AN INSTITUTIONAL ECONOMIC ANALYSIS OF PUBLIC HEALTH CARE ORGANISATIONS IN LOW-INCOME COUNTRIES

Bruno Meessen

May 2009

PhD in Economics

Director: Prof. Marthe Nyssens, Department of Economics, CERISIS, UCL

Committee members:

Prof. Marie-Christine Closon, School of Public Health, UCL

Prof. Jean Macq, School of Public Health, UCL

Prof. Robrecht Renard, Institute of Development Policy and Management, University of Antwerp

Prof. Wim Van Damme, Institute of Tropical Medicine, Antwerp

Facultés des sciences économiques, sociales et politiques

Département des Sciences Economiques

Université Catholique de Louvain

ACKNOLEDGMENT

This dissertation is the successful conclusion of a long journey that I never had to make alone. I would like to express my gratitude to all the people that have walked with me along this long and winding road over the last fifteen years.

Like many colleagues of my generation, it was during my stay at MSF that I discovered the challenges that health services in poor countries face. The six years I spent with MSF have been extremely rewarding, both on the human level and on the professional level, but individuals have also been crucial in my development. More in particular, my thoughts go towards the team of the Chad mission and notably to Walter Kessler who initiated me in health economics in poor countries. The time spent at the Medical Department in the team led by Francine Matthys opened my horizon even further.

If it is Wim Van Lerberghe who suggested me to join ITM, it is Wim Van Damme who really put me on the right track: our collaboration on the projects that he coordinated for MSF in Cambodia has greatly inspired this doctoral thesis. Cambodia opened my eyes to the importance of institutions and incentives in public health systems.

It has been ten years since I became a member of the public health department at ITM. I feel great here. Like many others, I benefit daily from the stimulating intellectual interaction in the department. Over the years, I have greatly appreciated the readiness to listen to me, the interest paid in my work and the encouragements of, among others, Bart Criel, Wim Van Damme, Vincent De Brouwere and Guy Kegels. More generally, I also want to thank all my former and current colleagues for various conversations we had on the issues covered in this thesis and the credit I got for sometimes rather iconoclastic propositions. I am grateful also to Isa Bogaert and Rita Verlinden for the daily support they provide.

My dissertation originates in my operational commitments in Africa and Asia in the past two decades. I owe so much to the people I met over there. As the second part of my thesis attests to, Cambodia and Rwanda have been key areas for the blossoming of novel ideas in recent years. Through their successful reforms, these countries prove that the performance of health systems can be boosted in poor countries.

The experiences described in the empirical part of this thesis were run by a number of agencies and people that unfortunately I can not mention here exhaustively. My own involvement occurred within the framework of various institutional and individual collaborations.

In Cambodia, I mainly worked with MSF and the National Institute of Public Health. As to operational matters, apart from the abovementioned Wim Van Damme, I would like to express my sincere thanks to Ir Por, Kiry Lo Veasna, Mathieu Noirhomme, Jean-Marc Thomé, Maurits Van Pelt, Bart Jacobs and Maryam Bigdeli for their abundance of ideas, contributions and availability. My work on health equity funds was always built on their field realizations and political endeavours.

On a more scientific level, I owe Thay Ly Heng, Kannarath Cheng, Seak Chhay Chap and Chean Rithy Men, notably for the contagious enthusiasm they displayed in the projects "Hospitals in Change" and "POVILL". Due to the necessity of focus, this dissertation does not touch upon some of my Asian work beyond Cambodia. I am

greatly indebted to Gerry Bloom for "opening up" China for me. My strategic reflections on health systems have in many aspects been influenced by the numerous discussions I had with Gerry over the past ten years.

I discovered Rwanda and Kabutare district in particular when I still worked with MSF. In 2001, when HealthNet International proposed me to work with Jean-Pierre Kashala on the set-up of a motivation strategy for staff based on performance, I gladly accepted the invitation. The Performance initiative has by now become a marvellous and grand reform with multiple ongoing developments. More in particular, I owe Laurent Musango, Claude Sekabaranga, Louis Rusa and Paulin Basinga, for allowing me to work with them in a very dynamic way. What they have succeeded in, with their colleagues and partners, is, I believe, a reason for hope for the whole of Africa. My gratitude also goes towards Agnès Soucat for the great confidence she had in me in recent years. The countless discussions we had during my various missions in Rwanda have certainly contributed to the consolidation of the vision offered in the last chapter of this thesis. The same chapter is also partly the synthesis of the great dialectic exercise in which I was involved with Robert Soeters since Cambodia. More recently, my reflections on performance-based financing were enriched by my exchanges with Gyuri Fritsche, Rena Eichler, Nicolas de Borman, Benjamin Loevinsohn and Jean Perrot, but also by discussions with participants of the 'Health policy' course at ITM.

This dissertation has equally greatly benefited from the critical look that economists took at my work in the past years. The long journey required by UCL to obtain a PhD – preparatory test, extended paper, doctoral school, dissertation – turned out to be extremely enriching. I wish to express my sincere gratitude to all the men and women that contributed to this program. My supervisor Marthe Nyssens provided precious support throughout the years. The attention she paid to rereading my texts was beyond category. I greatly appreciated her gentle guidance that let me explore my intuitions while helping me to refocus on academic rigour at various key moments. Although this thesis is in general not mathematical, nevertheless at one key moment during the writing process I have benefited from a more micro-economic reflection. I enjoyed working with Matthieu Delpierre on the model presented in an annex of the thesis.

A doctoral thesis is a long exercise of writing but also of re-lecture. The comments, suggestions and encouragements of the members of my PhD committee – Marie-Christine Closon, Wim Van Damme and Marthe Nyssens – joined by Jean Macq and Robrecht Renard at the stage of the final defence, have assisted me in the finalization of the document, notably to bring more nuances in some propositions. Further down the road, the availability, swiftness and pertinence of Kristof Decoster in numerous comments have prevented me from massacring Shakespeare's language (too much).

This thesis has de facto benefited from various funding options. The Flemish Community has financed my doctoral grant for many years. My gratitude also goes towards Bruno Gryseels for the defence of my cause when it proved necessary. The European Commission's Directorates-General "Research" and "Development" have financed my work in Asia.

This gratitude would not be complete without a word of sincere thanks for Veerle who had to sustain my physical and mental absence in some instances over the past few years. Her availability and patience at 'high alert' moments were of precious value. This dissertation is dedicated to my children Ella and Samuel.

TABLE OF CONTENT

INTRODUCTION: GENERAL CONTEXT

Low-income countries still face a number of major health challenges. Public health services respond to them with great difficulty. This low performance is traditionally attributed to a lack of resources. Yet, this constraint may not be the only cause.

In this introduction, we provide a brief historical overview of public health systems in low-income countries. We give some key facts with respect to the performance of the public health systems and its possible determinants. We present the main hypothesis of our research: the observed low performance is not only due to insufficient funding but stems also from the very way that the public health systems are institutionally established. Our belief is that the institutional dimension has not been correctly appreciated so far in theories and policies of health service organisation in low-income countries. Recent developments in organisational economic theory may help to increase the general understanding of this scientific question and the connected health policy issues. We conclude this introduction by circumscribing our field of investigation and giving the structure of our thesis.

1.1. A PROLONGED CRISIS CALLING FOR INNOVATIVE THINKING

Public health systems in low-income countries: from disarray to hope?

For most of us, health probably is the dearest asset. If in our affluent societies, we often forget to value health, this is largely because we have an incredibly large package of medical services at our disposal. Hundreds of millions of human beings are less lucky: the health services they have access to are very basic, of low quality (Jaffré & Olivier de Sardan 2003) and relatively costly to use. Most of these people are living in the countryside of low-income countries, in sub-Saharan Africa and South Asia in particular. For them, a basic health problem can turn into a tragedy.

Every day, thousands of children die because of malaria, diarrhoea or respiratory tract infection (WHO 2000). Each year, more than 500,000 women die of complications related to childbirth (WHO 2005). There is something odious in the fact that such a reality still prevails nowadays. Indeed, most of this mortality is technically avoidable. Notwithstanding the factors beyond the range of the health sector itself (climate, education, sanitation, economic development…), solutions – preventive or therapeutic interventions – do exist (WHO 2005). The scientific evidence supporting them is sound. Many of these solutions are not only very effective, but they are also neither complex nor costly to implement (Bryce et al. 2005). Then, where does the problem lie?

Political commitment – at least, the formal one – is not the issue. At independence, most of the developing countries identified health as a key responsibility for their government. The State was identified as the key actor to organise and provide health services to the population. *Public health systems* were established along the government proprietary model of the Soviet Union or closer to us, of the United Kingdom, the so-called National Health Service (NHS).

As a whole, over a few decades, major progress was achieved, even sometimes in very remote areas. Governmental health services fared particularly well, especially in countries where they were a component of a more global policy focused on human development

(Halstead, Walsh, & Warren 1985;Kutty 2000;Newell 1975;Unger et al. 2008).[1] Yet, in many other countries, early progress was not confirmed in a sustainable manner.

The consensual explanation for this lack of sustained progress is the lack of resources, especially financial ones. For governments, financial problems appeared already after the first oil shock of 1973-74 (concomitant with a degradation of terms of trade and a drought, as far as Sahel countries were concerned), but dramatically worsened with the global recession that followed the second oil shock (1979-80). The hypertrophy of the public sector, irrelevant macroeconomic and growth policies and misallocation of public resources called in many developing countries for radical actions. But the urgent measures taken to redress the situation – e.g., the unpopular structural adjustments – often did not bring, immediately or later on, the expected economic recovery. One of their consequences was an even more drastic reduction of public budgets available for the social sectors. As the sharp reduction of fiscal resources raised at national level was not compensated by an increase in external aid, this had long-term effects on the public health system. Promising strategies which could have revitalised it, such as the primary health care and the health district, did not really get a chance (Van Balen 2004).

Main victims of this major weakening of the public health services were of course the households; desperate, they turned their back to the public sector and developed new health seeking behaviours. In many countries, a largely unregulated private sector developed to respond to the unmet demand.

Till the mid-90ies, this was the overall picture in many low-income countries. In some, the situation was even worse. Many countries collapsed into civil war, sometimes chronically. The human toll has been particularly heavy in Central Africa and in the countries of the Horn of Africa. The HIV/AIDS epidemic was another terrible shock for many societies and their health sector. The situation looks particularly desperate in Southern Africa.

Reasons to hope

Yet, since the mid-nineties, there are signs of hope. First, the world economy is doing much better and low-income countries benefit from the economic globalisation, mainly through the huge appetite of emerging countries for raw materials. Economic growth has been strong till 2008, which is good for households and for national public budgets. Second, several international initiatives have been launched to increase resources for development aid, and to the health sector in particular. The International Monetary Fund (IMF) and the World Bank have revised their policies and remarkably softened the structural adjustment conditions. The most highly indebted countries have seen their debts cancelled. In its negotiation with recipient countries, the World Bank tries to complement the softening of the budget constraint with an injection of supplementary resources by governments to social sectors. In Monterrey, the rich countries mutually reminded each other their pledge to dedicate 0.7% of their GDP to ODA. With the Millennium Development Goals, governments of rich and poor countries have agreed to be ambitious in terms of rolling back poverty at a global level.

The health sector has particularly been a point of focus. The tragedy of AIDS has of course been a major drive for change. At the turn of the millennium, it was acknowledged in different global forums (the G8 meetings, the United Nations General

[1] China, Costa Rica, Cuba, Sri Lanka and the State of Kerala in India are traditionally put forward as the most impressive achievers. These outlying countries are certainly sources of inspiration, but probably more in terms of political long-term commitment than health policies.

Assembly Special Session on AIDS, the Abuja African Summit) that countering the epidemic required a dramatic increase in resources. A Global Fund to fight AIDS, Tuberculosis and Malaria was established. Later, the US Presidency launched the President's Emergency Plan for AIDS Relief. The World Health Organization set itself very high targets with the "3 by 5 Initiative".

While HIV/AIDS has contributed to bringing more attention to the health sector, it has not been the sole factor. Significant improvements have occurred in terms of leadership and argumentation. The Commission on Macroeconomic and Health (2001) calculated the resources needed for establishing basic health services in low-income countries (Commission on Macroeconomics and Health 2001). This has been matched with commitments from the North (the 0.7% of GDP) and the South (e.g., the 2001 Abuja Declaration in which African government set a target of at least 15% of their annual budget for the health sector). A particularly powerful tool for mobilizing resources is the Millennium Development Goals (MDGs) agenda, as goals 4 (health of mothers), 5 (child mortality) and 6 (AIDS, malaria and other diseases) are health-focused. As the MDGs are quantified targets, it is now possible, with a set of assumptions, to calculate the resources required to attain the goals (Johns et al. 2007).

An effective use of resources is needed as well

This global commitment for injecting more resources in the health sector is welcome. Skeptical minds may remark that it is still unclear whether this will be confirmed by a sustained pattern of actual disbursements; yet, there have been some positive trends. This new situation is challenging for the governments and their public health systems: they have to swiftly demonstrate that they are able to absorb and effectively use the supplementary resources allocated to them. Such a rapid and effective use of resources is a challenge for many governments and their ministries of health especially, for at least four reasons.

First, in the short term, there are some structural rigidities in the health sector. A major one is the stock of medical and paramedical staff readily available. Many low-income countries lack qualified human resources for health (WHO 2006). Causes are multiple and can be quite context specific. Some inescapable solutions such as educating new cohorts of medical doctors or midwives will require some time. As there are clear links between human resources for health on post and health outcomes (Anand & Barnighausen 2004), rapid progress towards the health MDGs and better health in general will be difficult.

Second, in many countries, the prolonged economic and budgetary crises have greatly weakened the operational capacity of the State. In order to survive, many civil servants, including frontline health care providers, have developed a multitude of coping mechanisms, from legal ones (e.g., emigration) to illegal ones (e.g., embezzlement of public resources, pilferage of drugs, under-table payments…) (Ferrinho & Van Lerberghe 2000). Poor governance and corruption have undermined the legitimacy of the hierarchy to address these practices, including through the enforcement of sanctions. It is unclear whether all ministries of health will be able to rapidly restore the required leadership and authority to enforce accountability to their services.

Third, if there is any massive influx of money, it may take the shape of budget support (with the notorious exception of HIV/AIDS funding). Several donors, major ones in terms of influence and financial contribution (the World Bank, the European Commission and several European countries) have recently decided to abandon the project approach and channel their assistance as much as possible through direct budget

support (Paris Agreement).[2] This is a major change in the rules of the game, especially for a health sector so much accustomed to settling isolated deals with external actors. The crux of the matter will be now to be particularly convincing in the eyes of the Ministry of Finance.

The last challenge, but not the least, is in fact the question that will keep us busy throughout this thesis: do the Ministries of Health have effective policies[3] at their disposal? More specifically, can we be certain that injecting more resources in the public health system will automatically ensure better outcomes for the population? This may not be the case if the poor results observed so far did not stem only from the under-funding.

Attributing public health systems' distress to under-funding is probably a comfortable stance for many actors – both from the South and the North, yet we suspect that this is not the only explanation for the poor results. This suspicion stimulates our whole thesis. Our main hypothesis is that in many countries, institutional arrangements establishing the public health system are not the most appropriate ones. They do not set the most conducive incentives to managers' and health personnel's performance. If this view is right, a sufficient financing of interventions that are ideal from a public health point of view (i.e., effective, simple, cost-effective, affordable) may still lead to disappointing results.

Interestingly enough, in order to scientifically explore this research question, there is no need to go back in time to test our hypothesis. We do not need to demonstrate that institutional arrangements adopted a long time ago were already inappropriate at that time (we tend to think the opposite). We neither have to show how inadequate institutional arrangements contributed to the poor performance observed so far. Our only obligation is to argue (first part of our thesis) and prove (second part of our thesis) that today there are institutional arrangements more adequate to the new environment than those inherited from the past. If our analysis is correct and if governments are willing to reform their public health systems, important choices will have to be made. One of the motives of this thesis is to provide policy makers with a clearer understanding of possible opportunities, risks and paths for this grand venture.

A view shared with others, but with little impact so far in low-income countries

To what extent is our thesis original? We would not claim that the view that "getting more resources is not a sufficient condition" and that "incentives matter" are intellectual or policy breakthroughs.

Our work finds its place in a larger policy and scientific debate about the operation and performance of public health systems. As far as low-income countries are concerned, the landmark contributions (WHO 2000;World Bank 1993;World Bank 2003) have mainly been inspired by the growing dissatisfaction with the current situation. Yet, one should not hide that the debate takes its roots in the overall thrust for a critical reconsideration of the role of the State in our societies (Osborne & Glaeber 1992;Walsh 1995). If violent attacks on the State are over, still, there has certainly been a shift in policy thinking. The standard view today is that the State must pull out from all activities

[2] A project can be defined as an aid intervention outside the national budget framework. Budget support consists in channelling the aid funding through the national budget. The latter increases the control and ownership of the government.

[3] Like (Pritchett 2002), we make a distinction between a health intervention (e.g., immunisation, oral rehydration therapy) and a health policy (e.g., several interventions bundled into a package of activities to be delivered by a health facility submitted to a given set of incentives).

that can be better fulfilled by private actors (e.g., provision of services) and focus on the things that the private sector cannot do (because of market failures or redistribution considerations). In the health sector, the dominant analysis is not as simplistic. Full privatization is rarely recommended; yet, the preferred policy is often the partial introduction of market mechanisms within the public health system, and more generally paying more attention to the incentives in place (Saltman 2002).

There is of course a lively debate about the correctness of the diagnosis and the appropriateness of the recommended cure. For opponents, new public management and quasi-market arrangements are nothing but the market, disguised as a wolf in sheep's clothing. Resistance against this neoliberal inspired agenda must then be organized (Segall 2003). For others, these reforms are, first of all, attempts to build health systems (1) more responsive to society's needs (including those of the poorest) and (2) better in line with the general ethos prevailing today in our societies (Le Grand 2003). It is not incorrect to state that rightly or wrongly, this second group runs today the show, at least in high-income countries and in the leading international agencies. In terms of policy, the most influential contributions at a global level have been productions – annual or thematic reports – by the World Bank, the World Health Organization or the Organization for Economic Co-operation and Development.

Yet, these high-profile reports should be taken for what they are exactly. Stunning often is the discrepancy between what they recommend and the evidence they can rest on. If scientific evidence is accumulating on health sector reforms in high- and middle-income countries, little is available about reforms in low-income countries. This is probably largely due to the fact that few major public health reforms have actually taken place in low-income countries or if so, they are still in progress.

One may speculate on the main obstacles to reforms. As already mentioned, one reason could be that other more visible frustrations (under-funding, lack of human resources, poor governance) have not favoured the emergence at country level of a perceived need to reform the public health system. Moreover, it is unclear how the feeling of dissatisfaction is shared among national stakeholders and more importantly whether they are ready to embrace reforms that could jeopardise the stakes of some of them.

At the level of international partners active in countries, there is a widely shared feeling that reforms are necessary, but leadership has been lacking. The World Bank, the player in the best position to do so, is often handicapped by the multi-sectorial scope of its action, the lack of permanent health expertise in post in the countries and its reputation of pushing reforms based on too little evidence and too much ideology. The Non Governmental Organisations (NGOs) and civil society groups advocating for more international resources to the health sector have been quite silent on the reform agenda, if one leaves aside their opposition to user fees (Save the Children 2005;Van Leemput et al. 2007). *Médecins Sans Frontières*, possibly the international organisation engaging the most with the public health facilities in low-income countries, has no official position at all on reforms. Many other NGOs have difficulties to propose another stance than the quite standard hostility towards any step that may privilege the private sector to the detriment of the State (OXFAM 2009).

Our interpretation is that a key hindrance to changes is probably the lack of a clear understanding of what goes wrong and how it can be fixed. For example, in its landmark report advocating more funding, the Commission on Macroeconomics and Health (a

group gathering some of the top world expertise) did not deny that there were also institutional problems that should be set right in many countries (Commission on Macroeconomics and Health 2001). Yet, it remained quite vague in terms of paths for actions. The lack of a proper framework to diagnose problems, the paucity of experiences to guide actions and the inevitable inertia once one deals with public services preserves the status quo.

So far, few actors have dared to challenge that by bringing up new ideas. A remarkable exception was the radical position expressed by some World Bank's economists a few years ago (Filmer, Hammer, & Pritchett 2000). Their attack against public health systems and primary health care was perhaps too excessive to have an impact in the health policy community. Their angle – a high confidence in the validity of office-based econometric analyses, an ignorance of the epidemiological literature and a possible lack of field experience – has probably also weakened their point (economists are accepted in the health debate, not yet welcomed and certainly not trusted!). Their policy conclusions in a following paper were not really convincing either (Filmer, Hammer, & Pritchett 2002).

Nevertheless, their paper had the merit to radically question some ideas or explanations that had become dogmas in health service organisation. Moreover, the empirical work backing their radical view – a cross-country econometric study casting some doubts on the impact of public health spending on the reduction of infant and maternal mortality rates – was an original and useful contribution (Filmer & Pritchett 1999). Since then, their findings have been qualified[4] or even reversed by other studies often produced by other World Bank's economists (Bokhari, Gai, & Gottret 2007). Yet, nobody would deny that scepticism towards some public health systems and their very capacity to transform any increase of resources into major improvements is a legitimate intellectual position.

The persistence and scale of the ongoing tragedy in low-income countries require out of the box thinking. The above reported policy and scientific stalemate must be broken. Our suspicion is that some diagnoses and policy proposals made in high- and middle-income countries deserve to be considered in poorer countries as well (Meessen & Van Damme 2005). This thesis is our personal contribution to this work of thorough policy revision. We do it with our toolbox: economics. While economics has its own limits to think and organise human interactions, we believe that it also has an explanatory power insufficiently tapped so far for the design and operation of health systems in low-income countries.

1.2. ECONOMIC LENSES TO LOOK AT PUBLIC HEALTH SYSTEMS

A few arguments in support to our approach

Our interest for incentives may sound trivial to economists. Could there be any originality in declaring that incentives matter for the operations of public health systems? Is there any further need to look at public health systems of low-income countries through these lenses? We think so, and would like to quickly back up this position.

[4] Several authors have stressed the limit of looking at aggregate outcome figures; studies paying attention to benefit-incidence have shown that in fact, public spending could have superior effects on the poorest groups (Bidani & Ravallion 1997;Gupta, Verhoeven, & Tiongson 2003;Wagstaff 2003).

First, it is important to correctly appreciate how economics has contributed so far to health system thinking. Obviously, health economics has experienced tremendous development these last 25 years.[5] Institutional arrangements - health care provider remuneration contract but more recently ownership structure as well - have received considerable attention for at least twenty years (Maynard & Kanavos 2000). As it is evidenced by many reforms (e.g., the NHS one), health economics has deeply penetrated health system and policy thinking. But another truth is that it has done so with a huge bias towards situations and challenges faced by high-income countries.

Let us be accurate: there is a community of health economists working on low-income countries and their studies are really valued by international and national policy makers (cf. for example the work by the economists at the London School of Hygiene and Tropical Medicine, at the World Bank or the WHO). Yet, if one reviews the literature of these last twenty years, one is struck by the fact that institutional arrangements and incentives to health care providers have received quite limited attention.[6] Of course, there have been generic or empirical papers dealing with institutional issues (Barnum, Kutzin, & Saxenian 1995;Hanson, Archard, & McPake 2001), but very few authors have taken a view of health care facilities as organisations, frontally addressed the issue of incentives to public health care providers and articulated ways for reform of the public health system.

The rare studies are those dealing with recent reforms, mainly in middle-income countries (Liu & Mills 2003). Identifying the reasons behind this paucity of institutional analysis is quite crucial to appreciating the possible originality of this thesis.

Possible reasons for the lack of attention to public health care organisations so far

As already mentioned, a first possible explanation is that other problems, whose consequences are more obvious, keep on attracting most of the attention. Many donors, policy makers and scientists – including economists – are for example currently busy with the (vertical) response to the HIV/AIDS epidemics; 'horizontal' approaches (i.e. health centres and hospitals) remain in the shadow. There could be also some kind of observation bias or ideological preferences. For example, while there is a plethora of studies on the impact of user fees on the utilisation by vulnerable groups of health services, very few tried to assess their impact on providers' behaviours and more generally on the multidimensional performance of health care facilities.

The limited variance across health system organisation (many developing countries built their health systems on the model of the British NHS) could be a second explanation. This homogeneity may leave the impression that there is little scope for alternative approaches. As a matter of fact, the NHS model (vintage 1948) has deep historical roots[7] and still benefits from strong political support both at national (the

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[5] Health economics is a young sub-discipline of economics. A key milestone is certainly Kenneth Arrow's paper in the American Economic Review (Arrow 1963). The first issue of the *Journal of Health Economics* was published in 1982; the first issue of *Health Economics* was published in 1992.

[6] Interestingly enough, the publication of studies on low-income countries by the two most prestigious discipline journals mentioned in the previous footnote is quite recent. If one reviews other journals (*Health Policy and Planning*, *Health Policy*, *The Bulletin of the WHO*, *Social Science and Medicine, the International Journal of Health Planning and Management*.), one observes that cost-effectiveness of strategies, equity in access and health seeking behaviours constitute the bulk of the contributions. Community health insurance has emerged as a new topic these last ten years.

[7] This State proprietary model suited the dominant ideology at the post-independence period. It indeed replicated in the health sector the ideological choice of giving to the State a strong leadership in the development of the country, including through the direct provision of services.

Ministry of Health and the civil servants) and international levels. Design and operation of public health systems of low-income countries has been so far quite exclusively a prerogative of medical doctors and public health experts working under the direction of Ministry of Health. This has ideological consequences; for example, many of these experts have a clear preference for public planning and administration over mechanisms that may rely on decentralised forces or even mimic the market. For international experts, the privileged relationship with ministries of health, that are led by doctors, may also create the false perception that they have enough political instruments in their hands. We would contend that this intellectual and political environment is not conducive to 'out of the box' thinking. Economists could help, but clearly, establishing bridges between doctors and economists is a challenge per se (Neumann, Jacobson, & Palmer 2008).

A third reason behind the paucity of institutional analysis, stemming partly from the two previous ones, is the dearth of innovative experiments to document; this clearly limits opportunities for scientific documentation, especially to scientists poorly connected with policy makers and implementation agencies. Moreover there are huge methodological challenges for the rigorous assessment of any ambitious health system reform.

But economists would be wrong to blame only others: if insights from economics played little role in health system thinking (for better or worse!), the main culprits are certainly the economists themselves.

Until recently, economics was nearly totally silent on institutional arrangements and organisations in particular. This was true for the health sector, but even for corporations: organisations were just considered (and left alone) as black boxes. Modesty should lead economists to acknowledge that their interest for incentives – or at least, the structured study of them – is quite new. Beyond broad ideas and intuitions, there have been few theoretical developments or applications in the field of the health sector in low-income countries. There are several empirical studies, but these do not always keep up with recent theoretical progresses. Very few studies for example make explicit references to contract theory or transaction cost economics. Utilisation of these concepts is sometimes clumsy. We see in these weaknesses as many opportunities to expand knowledge in the understanding of public health systems in low-income countries. Our whole thesis is built on this intuition.

Why economics and not other organisational theories?

This recent interest of economists in organisations could suggest modesty and caution. Indeed, while economists were obsessed by their analysis of the market mechanisms, others spent considerable attention to organisations. Management schools trained millions of students in organisation 'science'. Managers, sociologists, psychologists and even feminists have developed quite sophisticated views and theories of organisations (Clegg & Hardy 1999). This raises an important question to us: why do not we capitalize on these theories first for our critical review of the public health system in low-income countries?

There are several reasons for our choice. First, this thesis is written by an economist for a PhD in economics. This sets boundaries in terms of both what the author is able and allowed to do. More positively, and this is our second reason, we see some benefits in our exclusive use of organisational economic theories. To our knowledge, such an

approach has not been much followed so far, especially as far as the public health system in low-income countries is concerned.[8] It makes sense then to explore the actual potential of these theories. Furthermore, our own work does not preclude other public health experts from adopting other theories.[9] Third, we suspect that economics, through its inherent radicalism, may bring new insights in how health systems operate. Economists are, for example, not ashamed to assume that human beings are self-interested. This crude view of mankind, which is a nonstarter for many public health experts trained in other traditions and disciplines, may disclose phenomena that are too often overlooked. Fourth, and much more fundamentally – it is at the core of this thesis in fact – we believe that what health system thinking lacks, is a theoretical framework able to embrace simultaneously both the organisations and the markets. Economics obviously fares better than alternatives from this perspective. Related to this ability is our fifth argument: economic theories could be one of the keys for a change in health system operation. As we hope to convincingly show with the empirical part of the thesis, from an instrumental perspective, economic theories open major opportunities to policy makers. Indeed, while economic theories are perhaps not very useful to the manager who is struggling on a daily basis with the micro-allocation of resources within his hospital, they can provide new ideas to those whose power lies in a capacity to design or influence institutions. A key ambition of this thesis is to demonstrate this possibility.

1.3. THE FOCUS AND STRUCTURE OF THIS THESIS

Circumscribing our object of study: public health systems in rural areas

Our thesis starts from a largely shared analysis: in any country, the State has a key role to play in the health system. This involvement is mainly required by the different market failures present on the health care market (positive externalities, increasing return on scale, asymmetries of information) and distributional concerns. The real question is what the actual involvement of the State should be and more particularly, as far as this thesis is concerned, the institutional modalities of this involvement.

While some experts question the fact that the State should have any role in the provision of care, we postulate that it has such a role. If we have to provide any reason for this postulate, let us say that this is the situation existing today in most countries of the world and from a political economy perspective, it is the starting point for any reform. Our thesis henceforth focuses on the public health system.

The 'public health system' concept' gathers a large set of missions, functions and organisations. Consequently, it is vital to circumscribe our object of study.

Our thesis will focus on the organisation of public health services for people living in rural areas in low-income countries. One of the reasons to focus on rural areas is the fact that three quarters of the poor in the world live in the countryside (Dercon 2009). As we shall see, the qualification of 'public' raises several challenges. At this stage, let us agree that it pertains to bodies that are officially involved in the implementation of a government health policy towards the general population. This includes health care

[8] Yet, things are changing. An outstanding contributor to the reflection is certainly Kenneth Leonard (University of Maryland) by his careful look at health care provider – patient relationships in sub-Saharan Africa (Leonard 2002;Leonard, Masatu, & Vialou 2007;Leonard & Zivin 2005).

[9] Quite surprisingly, organisational theories have not been applied much to health system organisation in low-income countries. Notable exceptions are the application of Mintzberg's theory by some of our ITM colleagues (Blaise & Kegels 2004;Unger et al. 2000).

providers (mainly health centres and referral hospitals) that have historically been identified by health authorities as in charge of some specific responsibilities for a geographically defined population, the bodies that co-ordinate their operations (mainly the district health office and any purchasing agencies) and the mechanisms organising them as a system (e.g., the health district strategy). These objects of study will be inserted in their general context, including the different mechanisms establishing a public health system.

The following elements will therefore not receive our attention: the production of qualified human resources, households' health seeking behaviours, health in urban contexts, private-for-profit providers (formal and informal), government-owned health facilities for exclusive groups (e.g. military hospitals), the pharmaceutical sector, vertical programs, the role of international agencies and the functions of the central level in terms of coordination (e.g., decisional criteria for priority setting).

This thesis mainly deals with the purchasing and the provision of health care. Other key dimensions of the health system, including the issues of resource collection by the government and of risk pooling are not at the core of the thesis. The interface between politics and the health system (what economists would call the 'political economy' of the health system) is also relatively overlooked.

As far as low-income countries are concerned, our thesis will mainly look at two countries: Rwanda and Cambodia. These two countries are quite representative of the situation of donor dependent countries.[10] A limitation of the first part of the thesis is its neglect of the general political economy of national health sectors in low-income countries. This issue is partly addressed in one of the papers included in the second part of the thesis.

The main research question and the way to investigate it

This thesis apprehends rural health facilities as institutional realities. According to this view, any health care organisation is characterised by the institutional arrangements it rests on. These institutional arrangements indeed set incentives to the different stakeholders (mainly the Ministry of Health and its cadres, the patients and the health staff); the actual set of incentives influences behaviours and eventually determines the nature of the provision of health services.

Our main research question is the adequacy of the existing institutional arrangements with regard to the objectives traditionally assigned to public health systems. Our main hypothesis is that, given the needs and the environment, in many countries the existing arrangements are inadequate or at least sub-optimal.

Our approach to this research question is built on organisational economics and public health. We acknowledge that tapping two scientific paradigms in the same thesis may be a source of eye brows' raising. Yet, we believe that each paradigm can be seen as addressing the main weakness of the other.

Public health – especially when it applies to health systems – is a rather pragmatic and eclectic science.[11] It draws on disciplines as diverse as medicine, epidemiology, sociology,

[10] There is one major difference with most donor dependent countries: our two countries of focus have experienced a recent genocide. It is unclear if this fact has any link with a greater willingness to experiment with new strategies. For sure, a civil war is the testimony of a societal failure; this may generate afterwards a greater eagerness to reform the society.

[11] One can in fact wonder whether public health is not just a field of study.

management, economics, political science… This open approach is useful for addressing health problems in an operational way. However, it also allows scholars and experts to leave (most often unwittingly) some key issues in the shadow. This thesis argues that this has been the case with respect to public health system thinking.

A key strength of theoretical economics is its rigour and its cautious development of causal models. Yet, its behavioural assumptions are crude; microeconomic models can handle only a limited number of variables. This greatly limits the seductiveness of economic theories for non-economists and certainly for policy makers dealing with real actors, complex situations and burning issues.[12]

More fundamentally, we believe that our double angle on the problem has real heuristic power. One hope animating this thesis is that public health colleagues trained in other scientific paradigms will realise that economics is a powerful tool to study health systems. Another message that this thesis tries to convey is that economists must get much closer to reality; they have instruments and ways of thinking that may contribute to a much better world for hundreds of millions of people. This may require them to be more involved in the design and study of policies and interventions.

The achievement of these two ambitious goals requires that our thesis is accessible to practitioners of both paradigms. We try to fulfil this requirement by adopting a discursive approach mainly.[13] If knowledge of the health economic literature is not a prerequisite for reading this thesis, it is purposely: our main concern is to build a general framework that could serve as a bridge between health economics and health system experts trained in other disciplines. This does not mean nevertheless that some previous exposure to basic microeconomic concepts is not an asset. Good knowledge of the organisation of public health systems in low-income countries greatly helps.

The structure of the thesis

Our investigation is organised in two parts.

Part 1 aims mainly at validating the utilisation of economics (and its institutional branches in particular) to analyse the organisation of public health system. This validation is done in successive steps. In our chapter 1, we set the scene as far as our object of study is concerned: we introduce public health systems in rural areas in low-income countries. This largely descriptive and historical chapter is helpful to provide the situation of reference discussed throughout the thesis.

With the next chapter, we shift to economic theory: our chapter 2 provides a review of recent development in the economics of institutions; it sketches the overall theoretical background and allows us to situate our own research program in this panorama. The next four chapters are dedicated to concepts that are helpful for the economic study of

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[12] Economists may pretend that applied economics address such weaknesses. This is true, but with variable relevance according to the studied phenomena. A major constraint is the scarcity of situations allowing to disentangle causal effects with certainty. For sure, econometricians have been quite creative to permit the empirical test of causal relationships in the most impossible situations; but this practice remains miles away from the rigour of randomised control trials as they are practiced by epidemiologists. Few public health experts would be convinced by a study as the one by Filmer, Hammer & Pritchett 2000. The recent move by economists to randomised control trial (Duflo 2004) surely is a sign of convergence. Yet, one may doubt that is feasible for complex policies or institutional arrangements.

[13] Still, one microeconomic model is annexed to the thesis. Its main function is to illustrate the power and limits of such formalisation, especially for the understanding of how institutional arrangements set incentives to economic agents. Note also our footnote policy. A substantial share of our footnotes are either things well-known by economists or things possibly too technical for our public health readers.

public health systems, concepts that we draw from this literature. Our chapters 3 and 4 introduce respectively the concepts of institutions and organisations. In our chapters 5 and 6, we highlight how institutions structure property rights and how property rights set incentives to economic agents. This tedious application of organisational economics to our case of study allow us to highlight a few pending conceptual questions in institutional economic theories.

In our chapter 7, we put these different concepts together and propose an institutional economic framework to study public health care organisations. Among other things, we show that this framework can help to structure the study of the performance of the public health systems.

In our chapter 8, we come back to the rural health systems introduced in our chapter 1. Thanks to our institutional economic framework, we put forward a new explanation for the low performance of public health systems.

Part 2 of the thesis explores the reform alternatives. Our chapter 9 is dedicated to the empirical scrutiny of two recent reforms: the Performance Initiative in Rwanda and the Health Equity Fund in Cambodia. The chapter consists in a collection of four papers published in peer-reviewed public health journals. Each paper is introduced and linked to the first part of the thesis. Our chapter 10 is the prescriptive one. We propose ways forward for reforming public health systems in low-income countries. Whereas our ten 'propositions' are to some extent speculative, they are clear enough to be falsifiable in the future. This allows us to identify some possible tracks for the expansion of our research program.

Our thesis ends with a conclusion highlighting our contribution to the scientific and policy debate.

PART I:

AN INSTITUTIONAL ECONOMIC FRAMEWORK TO STUDY HEALTH SYSTEMS

CHAPTER 1: RURAL HEALTH SYSTEMS IN LOW-INCOME COUNTRIES

The main hypothesis behind this thesis is that low performance of the public health systems in many low-income countries is largely the result of inadequate institutional arrangements.

In this chapter, we introduce our object of the study: the rural public health system in low-income countries. We zoom in on two of its key policy components: the health district strategy and the financing of the health care facilities. For both, we identify questions or hypotheses that have received too little attention so far.

1.1 A RAPID HISTORY

The colonial period

Much more than epidemiology or the evolution of medical knowledge and techniques, the main specificity of health systems of many low-income countries, and in sub-Saharan Africa in particular, is the key role entrusted to the State (Van Lerberghe & De Brouwere 2000). This privileged relationship between the Modern State and modern health services has old roots: it goes back to the arrival of colonial armies (Arnold 1993).

Till the late nineteenth century, in most colonies, the health workforce consisted nearly exclusively of army surgeons; this was especially the case in sub-Saharan Africa where colonization was still at an early stage. The exploitation of the colonies' resources rapidly required the settlement of the (reckless) Europeans ready to face the dangers of a life in the Tropics (at that time, tropical medicine was still in its infancy and the mortality among the newcomers was very high). In the early twentieth century, civil doctors first joined the already present community of traders, planters, engineers and colonial administrators. The main responsibility of these civil doctors, employed by the colonial administration, was to take care of the health of the settlers living in the new towns. Hospitals were built; hygiene programs – e.g. fight against vectors – were also developed.

It took several decades before the colonial powers realised that their exploitation of local resources was jeopardised by the lack of attention paid thus far to the native populations' health. In sub-Saharan Africa, the colonization had brought about very violent shocks on communities and their livelihood: import or spread of cattle diseases, a major weakening of staple food production due to compulsory work 'programs' and high mortality of men recruited in the mines, plantation or infrastructure construction. Mortality was on the rise and population in decline.

Furthermore the 'sanitary enclave' strategy was reaching its limits: white settlers worked on a daily basis with servants, employees or indigenous soldiers; communicable diseases such as plague and influenza did not stop at the 'native quarters'. Better protecting settlers' health required the extension of European medicine to native populations as well.

After the First World War, European powers started to invest significantly in health services for the indigenous populations. In terms of scale, in many places, the first priority for the colonial administration was to fight the endemic tropical diseases which

were hindering the exploitation of fertile territories (e.g. yaws, trypanosomiasis). The ancestors of the 'vertical programs' were established; organised in a military way, these disease control interventions rested on centralisation, mobile teams and coercive population screening. Progressively the colonial State got involved in curative and more comprehensive services; it did so initially mainly through 'surrogates'; the mining and plantation companies developed services for their workers (and their families), and more remarkably, catholic and protestant missions rapidly recognised that health services (rural hospitals and dispensaries) could be a key component of their civilising and developing mission.

The colonial heritage

At independence, most of the developing countries inherited a health sector resting on three main components (Van Lerberghe & De Brouwere 2000): (1) the public vertical services against some major tropical diseases, (2) well-equipped and well-staffed public city hospitals and (3) a network of dispensaries and small hospitals owned by the State, public agencies, missions or private companies. Key characteristics of this 'system' were its exogenous origin, a very recent existence and the central role taken up by the State in its operation. These three characteristics implied that those health systems benefited only indirectly from the centuries-long institutional maturing process that led to health care provision in Western countries, especially with respect to the institutions establishing trust between patients and individual practitioners.

The 'independence fathers' and new rulers maintained those major orientations. The free health care model relying on a government proprietary health system became the norm. The main institutional traits of such NHS-like systems are the following: (1) the financing of the public health system is mainly tax-based; (2) the central government's budget is organized around line items, it is managed and executed by a Ministry of Finance; (3) there is a Ministry of Health in charge of the operation of the public health system; it has key allocation rights on the health budget; (4) the Ministry of Health is organized as a hierarchical administration with some decentralized units, including regional offices and health care facilities; (5) most personnel of this administration, including those posted in health care facilities, are civil servants working under a civil servant law; they receive a fixed wage; hire and fire decision rights are held by the central government; (6) decentralized units can affect their share of the health budget and the composition of this share through the planning-budget cycle; they receive an important part of their resources in kind; (7) physical assets are owned by one level of the government; (8) services are free at the point of use; they are quite standardized across the country.

Of course, each country adapted the model according to its own constraints. After some time, a few corrections were necessary. The Alma Ata Conference, the Bamako Initiative and the Harare Declaration were particularly important stages in the reorientation of many public health systems, and more particularly in the move towards greater decentralization.

The need for some adjustments

The Declaration of Alma Ata

In many developing countries, the power abandoned by the colonial authority was rapidly captured by a new coalition of national elites and international actors (often from the former ruling country). As far as the health sector was concerned, a major priority of many governments was to provide high quality hospital services for the urban elites, as

these services were perceived at the time as a key feature of a modern health system. Hence public city hospitals, their staff and their users rapidly became the main beneficiaries of the national health budget.

This bias did not bring of course major progress for the health situation of the general population, which was still very poor and rural, generally speaking. This did not remain unnoticed by a new class of actors: the cooperation technical assistants and international health experts. In fact, similar problems were being observed by development actors active in other sectors of the economy: development had been imbalanced until then and its outcomes were inequitably distributed. In the seventies, the whole 'modernization paradigm' came under attack. From then on, 'basic needs' had to be the priority (Streeten & Burki 1978). In the health sector, the Declaration of Alma Ata in 1978 is traditionally seen as the key political milestone for this shift in favour of rural masses.

The Alma Ata Conference gathered 132 member states of the World Health Organization. This event was pivotal in several aspects. The main inspiration for participants was a value-based approach to health. A core value certainly was to see health as a human right. The declared goal was to attain Health for All by the year 2000. In order to make this right effective, participants fully recognized that a multisectoral approach was needed: a healthy population is the product of many factors (e.g. nutrition, clean water, education…). Participants finalized a strategy for implementing their vision: *primary health care*. A major feature of primary health care was to stress the need to involve the population in the production of health services. The 'hard line' version of that was an approach heavily relying on community health workers, along the acclaimed model (at that time) of the barefoot doctors in China (Sidel & Sidel 1975). For sure, Alma Ata was a major step away from centralism and the technocratic and medical control of a population's health; yet, the State was still seen as the key player to roll out the strategy.

The Bamako Initiative

The second oil shock and the subsequent recession in rich countries dramatically affected what was an ambitious agenda for developing countries. The public budgetary crises and the following structural adjustment programs particularly harmed the financing of the public health facilities; they brought the rural health systems close to a collapse (Van Lerberghe and De Brouwere 2000). A response to this health care financing crisis was the Bamako Initiative (1987). Under the leadership of UNICEF and the World Bank mainly, sub-Saharan African countries were invited to introduce or to formalize user fees in their health centres (World Bank 1987); the main purpose was to raise funds to ensure the daily operation of the health facilities, and more particularly their supply in essential drugs (Jarret & Ofosu-Amaah 1992). This reform was also an opportunity to materialize the involvement of the communities in the governance of their health centres. In many countries, so-called 'health committees' ('*comité de santé*') gathering village representatives were established; they were entrusted the management of the health centre drug stocks ('*pharmacies communautaires*').

The Harare Declaration

Another landmark event in 1987 was the Declaration of the Harare Conference. This conference organized under the leadership of the WHO was prompted by the diagnosis in the mid-eighties that progress towards the Health for All objectives was not rapid enough. Community-based approaches adopted in the aftermath of the Alma Ata Conference (e.g. training of community health workers and traditional birth attendants) failed to live up to the expectations. Self-reliance, empowerment, and intersectoral collaboration were nice ideas on paper, but the facts were proving that the operationalisation of the primary health care strategy would be impossible without the

involvement of the professional health workers. In terms of both service delivery and interface with the population, the health centres emerged as the mainstream option (Van Lerberghe, De Béthune, & De Brouwere 1997). However, it also became rapidly clear that a health system based on primary health care could not exist without referral hospitals (Aga Khan Foundation 1981). Another shared analysis was that primary health care demanded strong capacity in terms of planning and management. Coordinating everything from the central level was impossible: decentralization was needed.

At the meeting in Harare, 22 sub-Saharan African governments endorsed the *district health system* as the mainstream strategy to provide primary health care to their populations (WHO 1987).

1.2. THE HEALTH DISTRICT STRATEGY

The health district: a planner's dream?

The health district has received different interpretations. For some, it is a planning unit (Unger 1992). For others, it is more an analytical framework than a strategy.[14] For governments and their partners, the health district has mainly been a strategy to organize the development and the coordination of primary health care. This was particularly the case in countries where under-coverage was huge.

The general principle of the health district model is to cover a given population with at least two tiers of services, the health centres and the referral hospital, and to ensure the coordination of this coverage through different mechanisms, including a coordination unit. This general principle can be implemented in different ways, according to local constraints and opportunities. Yet, in general, the way it has been understood and implemented in low-income countries has been quite standard.

According to guidelines developed for low-income countries, a district can cover a population in a range of 50,000-300,000 people, but should probably preferably be around 150,000 people (Görgen 1994;Unger 1992).

The first tier, very close to the population (within walking distance), rests on the *health centre*, which should provide a *minimum package of activities* (MPA). This traditionally includes preventive, curative, rehabilitative and promotional services. It has traditionally a heavy focus on mother and child health services and treatment of acute infectious diseases. The MPA gathers services that are much in need in the population and can be provided by a team of health staff with low to middle qualification. In most low-income countries, due to scarcity of skills, the highest qualified staff that can be posted at this level is at best a registered nurse (e.g. Bac + 3 in Western African countries).

The system is organized on a population-basis: each village is attached to a health centre and each health centre knows the villages it is responsible for. They are the *responsibility areas*. Whereas it partly depends on the local density of the population and the size of the health centre team, many country guidelines recommended that a responsibility area covers around 10,000 people with a team of 6-10 persons (Unger 1992).

While the health centre is able to take care of the basic health needs of the population (e.g. a malaria episode, a normal delivery, a family planning consultation, a child immunisation), there are health problems that need to be handled at a higher level. It is

[14] Cf. for example our interview with Vincent Litt (Meessen 1999).

then expected that health centres refer their patients to the *referral hospital*. The referral hospital has to provide a so-called *complementary package of activities* (CPA) to the whole district population.

Referral hospitals are focused on inpatient care. They are traditionally organized around a few services and wards: paediatrics, internal medical, maternity, surgery and tuberculosis. They have also support capacities, the most important ones being a basic diagnostic capacity (laboratory, X-ray, ultrasound), an operation theatre, a pharmacy and an administrative department.

District hospitals vary in size across countries but also within a same country (Van Lerberghe, Van Balen, & Kegels 1992).[15] The number of doctors is probably the variable varying the most across countries, as doctors are the scarcest resource. In some sub-Saharan African countries, a district hospital is sometimes operated by 1-3 doctors.

The last building block of the district model is the *district office*. This unit does not directly deliver services to the population. Its main function is to support the health care facilities in their implementation of the national health policy. Its main tasks are: to supply health facilities (with vaccines for the immunization program, drugs and consumables, management tools), to supervise their activities (those of the health centres in particular), to develop coordinated action if necessary (e.g. during outbreaks), to strengthen technical capacities (e.g. training), to collect and analyse health information, to plan activities and to allocate resources. The district office is organized around a district management team ('*équipe-cadre de district*') lead by a medical doctor. It traditionally consists of a team of nurses in charge of health centre supervision, some vertical program managers (e.g. the expanded program of immunization), a pharmacist, clerks and accountants. Besides its offices, its main equipment consists of vehicles, storage rooms and fridges, computers and telecommunication equipment.

Strong arguments in favour of the model

There were strong empirical arguments backing the health district strategy. First of all, it was bringing together two different levels of services, for which there were plenty of successful experiences throughout sub-Saharan Africa (Jancloes et al. 1982;Kasongo Project Team et al. 1981;King 1966). To a large extent, the district model was developed, formalized and promoted on the basis of these field experiences much more than on the basis of hard evidence. Through an action-research process, experiences were particularly useful to improve the strategy, to detail its contents and to demonstrate its feasibility, effectiveness and affordability. A pilot experiment launched in the early seventies in Zaïre – the Kasongo Project – proved for example that it was possible to operate a health district with US$ 3 per capita only (Kasongo Project Team et al. 1981).

Formalization of the strategy led to more theoretical arguments in favour of it. In fact, the way the strategy combines equity and efficiency is close to irresistible in the eyes of a primary health care inspired planner. Let us review some key arguments.[16]

The strategy achieves efficiency (measured in monetary units spent to achieve coverage of needs) at several levels.

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[15] In (Meessen et al. 2008a) we document for example the case of six Cambodian hospitals, where health staff ranges from 28 to 168 and the number of beds from 41 to 195.

[16] Our point here is not to make a complete review of arguments put forward in the original documents. Furthermore, to ease the discussion we formulate them in a slightly more economic way.

A first possible source of efficiency is the division of the district in areas of responsibility. Two benefits are searched for through this division: the limitation of uncovered needs and the limitation of overlaps. The underlying rationale is the mere impossibility to build a health centre and to post qualified staff in every village. Organizing the rationing on population basis is a way to optimize the rare available resources, but also to assign clear and quantifiable missions to each health centre (as their target populations are known). Experience rapidly gave rough estimates of the optimal size of the responsibility area and health centre team (see for example, Unger 1992 or Görgen 1994).

The approach by activity package is particularly efficient. Gains are seized at several levels.

First, the very decision on their composition can greatly contribute to a rational use of scarce resources. While many advocates of the district strategy have presented the definition of the activity packages as a process where the objectives of the central level and the demand of the local population should meet, in practice, the packages have often been defined by health technocrats along cost-effectiveness criteria, and may be to a lesser degree, along criteria that one would today lump together under the term 'burden of disease' (e.g. mortality). If the technocrats are well-informed (as is usually the case), the activity package approach is a very powerful way for the government and its external partners to focus priorities on a limited list of health problems.

Second, the bundling of activities within a same activity package allows to seize technical efficiency gains. Indeed, if activities are complementary – e.g. weight monitoring and child immunization – the health facility will be able to seize economies of scope. A lot of action-research has been done at this level. Economies of scope are, theoretically at least, also present at the district office level (e.g. supervision).

Third, the fact that the activity packages are usually homogenous for the whole country allows a systematic standardization of the health care production. Skills, job descriptions, tasks, treatments, drugs, reporting, equipment and even infrastructure are standardizable. The fact that the Ministry of Health has full authority on the list of essential drugs and the prescription protocols, often owns the central medical store, employs the health staff, can seize returns on scale (e.g. organisation of the same training throughout the country, adoption of a nationwide information system) gives it the main leverage handles to enforce such a standardization. As it is well-known, standardization taps return on scale gains.

The fact that the system is organized around two coordinated levels of care is another interesting source of efficient use of resources. The split in two levels allows a division of labour, i.e. specialization: first line health centres deal with frequent problems amenable to standard protocols. The geographical and cultural proximity to the population reduces barriers to utilization. The health centre in contact with many users has also an important task of screening them and identifying those requiring more sophisticate diagnosis or care. The second line focused on more difficult health problems. This specialization allows the Ministry of Health to make the best use of the rarest resource: medical doctors. By concentrating them in hospitals, the Ministry of Health hopes they will focus on the core tasks that only doctors can perform: referral consultations, follow-up of inpatients, surgical interventions... In this set-up, having at least one urban health centre in the town where the hospital is located is particularly crucial to avoid that the hospital is overcrowded by patients manageable by nurses.

The decentralization from central level to district level of some key management tasks is a last source of efficiency. This gain is the standard benefit advocated by the

decentralization literature (Oates 1999): being closer to needs and preferences (of the population, but also of the health care facilities), district managers are better able to respond to multiple specific demands. Conversely, decentralization should not go too far: interesting returns on scale (e.g. the district medical store) can be seized if the district covers a sufficiently large population (Unger 1992).

Efficiency is not the only principle behind the health district approach. In terms of equity, the strategy fares also particularly well. Indeed it does not only aim at universal coverage, it implements it. The two-tiered system organized around standard activity packages simplifies the division of national resources (at least those under control of the planner): for example, a health centre will be attributed to every ten thousand people with the equipment, the health staff and the running cost budget deemed necessary to operate it. It is possible to ensure that everyone gets a similar share of the rare inputs. Furthermore, the allocation criteria are transparent and easy to monitor (by partners and health district managers at least).

Large adoption, narrow interpretation, rapid implementation

The district strategy was quickly adopted by countries. This success is probably not only due to the powerful technical arguments listed above. From a political economy perspective, the model was also appealing for many actors active in the health sector.

The main asset of the strategy was probably that it id not radically challenge the way national health systems were organized; it was more some kind of a reshuffling; the strategy was also giving clear guidance on how to allocate financial and technical support by aid partners. Governments, Ministries of Health and their partners could certainly subscribe to such a view.

Remarkable for example is the way the private sector has been handled during the implementation process. If one goes back to seminal texts (including the Harare Declaration), one notices that proponents of the strategy have always been cautious to remind their readers that the district strategy should be comprehensive in terms of actors; private health care providers should be involved as well. Yet, governments have always implemented the district as a pyramidal public health system (yet, most often, with the integration of private not-for-profit health care facilities to the extent that they endorsed the package of activities logic). Private for-profit providers have remained out of the policy framework, despite their already growing role in the health sector in the late eighties.

Our point is not to blame someone. This public interpretation of the model is in fact very natural, given for example the great proximity of the strategy with the British NHS.[17] The fact that the planning cycle was a core element of the coordination by the district office (but far from the only one) and the key mechanism to allocate resources probably did not help the involvement of the private-for-profit sector nor did it favour out of the box thinking.[18]

Aid partners have never really challenged this understanding of the strategy. The fact that they – especially international or bilateral aid agencies - preferably collaborate with the government is an explanation of this preference for governmental health facilities

[17] See for example the description of the NHS in (Propper 1995).

[18] This is not old history: we still observe such a strong bias towards the public sector (and blindness towards the private sector) among most of our participants to the Masters in Public Health at the Institute of Tropical Medicine, Antwerp. Many of them are health district managers.

(Meessen 1999).[19] The district strategy was also particularly handy for bilateral agencies (e.g. the GTZ) and big medical NGOs (e.g. MSF-B) willing and able to strengthen the public health system. The approach was particularly convenient for those having a project approach, as the district model is circumscribed to a geographical and administrative area.

The formal integration of the district model in the national health policy was rapid. In many countries, key building blocks (e.g. health centres and rural hospitals) were already there. The fact that the reform was consistent with other ongoing reforms (e.g. the adoption of essential drug lists and guidelines) helped as well.

Sometimes, the adoption of the district policy mainly required to carry out a division of the territory into responsibility areas, to reorganize a bit the intermediary levels, to formalize some key aspects (e.g. package of activities) and do the required capacity building.

In other cases, especially in countries coming out of a war, nearly everything had to be built from scratch. The health district was then the perfect template to organize the reconstruction and reorganisation of the health system. It was particularly helpful for long-term planning (e.g. constructions, equipment, and production of the workforce). Cambodia is one of these countries.

Disappointing results, pending questions

Till today, no one ever seriously assessed how the health district strategy has been implemented throughout low-income countries. In many countries, the model is so much integrated in the national policy that such an assessment would amount to reviewing the government health policy itself. Incontestably, there have been and there are still very well performing health districts. Yet, often, these successes have stemmed from conditions not reproducible at a larger scale in a sustainable way (e.g. presence of a charismatic health district manager, project set-up, support of a faith-based organisation or an international NGO). In many countries, the ultimate goal – the provision of quality care to the whole population – is far from being reached.

Several reasons have been put forward to explain the disappointing results.[20] For some, the poor results are mainly due to contextual factors (e.g. poverty, corruption, and incompetence). As a matter of fact, countries with poor performing health sector are rarely performing well in other social sectors. Another recurring explanation is that the strategy never got the funding it required (Van Balen 2004). This is certainly true in many places. Flawed implementation has been another major source of frustrations (Meessen 2000;Meessen 1999;Unger 1992). Sometimes, the strategy has been implemented in a too rigid, mechanical or even bureaucratic way. In countries where everything had to be done and local capacities are very limited (e.g. Chad, Niger), the technical assistance has perhaps been too short. In countries where the strategy had few historical roots (e.g. Cambodia), the limited exposure of national cadres and district officers to the strategy did certainly not help. For some key functions of the strategy (e.g. supervision), training strategies were also inadequate.

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[19] The truth is also that no one came early with a clear strategy on how to develop relationships with the very decentralized private sector. Recent involvement of the private sector still goes mainly through contracting to non-profit organisations.

[20] In 1998-1999, we were personally involved in a quite extensive review of the district projects of MSF-B. Part of the process was to interview some health district experts. We report here their own experiences and analyses.

In this thesis, we propose to explore another track to explain these disappointing results. We believe that the health district strategy deserves to be analyzed as an institutional arrangement through the lenses of organisational economics. Our suspicion is that the incentives set by the different institutions of which the district consists are not the most appropriate ones, given the objectives that should be pursued by public health policies in low-income countries.

This hypothesis clearly requires us to have a good understanding of concepts and phenomena such as institutions, organisations and incentives.

1.3. HEALTH CARE FINANCING

User fees and their consequences

In low-income countries as well as anywhere else, health care financing is one of the key components of the health policy. We have seen that in the wake of the degradation of international terms of trade and the two oil shocks, many governments of developing countries were not able anymore to correctly finance their public health facilities. The situation was particularly catastrophic in sub-Saharan Africa (Vogel 1988). The introduction of user fees in the public health facilities[21] was perceived as the only option to avoid a collapse of the health system. Under the leadership of UNICEF, most of the sub-Saharan African governments endorsed the 'Bamako Initiative' in 1987. They adopted the strategy first for their health centres; later they extended the logic of payment by the user to hospital services. Within a decade, most other low-income countries followed suit.

Different objectives have been pursued through user fees. The main objective has traditionally been to improve the quality or the sustainability of health services through the mobilisation of more resources (World Bank 1987). The postulate is that households are willing to pay for some services, especially curative services (de Ferranti 1985). In sub-Saharan African countries, the user fees were introduced mainly to finance drugs and local running costs. For political economy reasons, it had been indeed easier for governments to cut budgets for drugs, running costs and investments than cut budgets for human resources (whom were in their vast majority civil servants).

At health centre level, the declared objective was (and often still is) to ensure full cost recovery for these items. In combination with the government funding for the salaries and with donor's assistance for some items generating positive externalities (e.g. tuberculosis drugs, vaccines), the expectation is to reach a sustainable provision of the minimum package of activities. The 'revolving drug fund' strategy for example aimed for a good availability of essential drugs. At hospital level, where full cost recovery of drugs and running costs is a chimera given the poverty of the general population, the financial objective pursued through the user fees has often been less clear. In Cambodia, user fees mainly go to bonuses for health facility staff. It has been a key strategy there to improve the quality of services (Van Damme et al. 2001; Meessen et al. 2002).

In the eighties, the World Bank experts stressed that user charges could contribute to efficiency (de Ferranti 1985). The collected revenue for curative services would allow to concentrate the scarce public budget on interventions with 'public good' characteristics.

[21] User fees were already present in many missionary hospitals and dispensaries.

The introduction of user fees was also expected to ration the 'frivolous demand' one can expect if services are for free.[22]

A last possible benefit of user fees (but rarely formulated ex ante as an objective per se) was the possible empowerment of the users it could bring about. The weak version of the argument was that the population would exert more pressure for quality once it paid for the services. The strongest version was the recognition that the management of revenues collected by the health centres could be entrusted to the community; this new role would give them more decision rights on the performance of 'their' health facility.

Different forms of user charges have been adopted across countries and sometimes within countries (Nolan & Turbat 1995;Singh 2003). A didactic literature was developed to identify pros and cons of different ways to charge patients (Goodman & Waddington 1993;Shaw & Griffin 1995). Yet, this did not prevent weird design features in some places (e.g., the obligation for the health facilities to retrocede their income to the local tax department).

User fees and their impact, especially in terms of utilisation of curative services by the poorer groups, have received and are still receiving a lot of attention from experts and scholars. Scholars are quite negative on the strategy. Their studies, for a long time constrained by research design limits (Palmer et al. 2004) have consistently shown that user fees are a barrier and hurt the poor first (James et al. 2006). Technical experts, who often have a broader view on the benefits, have been less negative on the strategy (Levy-Bruhl et al. 1997). All agree that some design errors have sometimes led to catastrophic outcomes in terms of quality of care and efficiency (e.g. the adoption of the prescription charge system in China which induces over-prescription) (Liu & Mills 2002) .

There is also a consensus that the implementation of user fees policies has often been flawed (Gilson et al. 2001). This probably partly explained the limited success reached by the policy in terms of total resource mobilisation and population empowerment. The same goes for its impact on access by the poor. For example, at the endorsement of the Bamako Initiative, many African governments committed to ensuring free access for the poorest through some waiver arrangements. However, these waiver schemes were poorly designed, their financing not settled and the list of indigents eligible for free health care rarely established. This has led to poor results nearly everywhere (Kivumbi & Kintu 2002;Ridde 2008;Stierle et al. 1999;Willis & Leighton 1995).

The problem of financial inaccessibility generated by the user fees has also attracted much attention among the aid agencies. The response of the international community and governments was mainly twofold. In the late nineties, acknowledging that user fees were there to stay, many actors (including the World Health Organization, the World Bank and the International Labour Office) turned to community health insurance as a way to circumvent the accessibility problems generated by the user fees (Ndiaye et al., 2007; Preker and Carrin, 2004). More recently, another group of actors – mainly international NGOs – advocated more radically for the removal of user fees (Save the Children 2005). As a result, the situation today is less homogenous than 10 years ago. For example, while Uganda abolished user fees in 2001, neighbouring Rwanda is building its rural health system on community health insurance (Musango et al. 2006;Tashobya, Ssengooba, & Cruz 2006).

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[22] One might doubt whether this argument carried any weight in poverty stricken settings. The only exception is maybe situations where health care was free at hospital level, while payment was requested at first line: extending user fees at hospital level was then necessary to avoid or at least reduce an inefficient shift in utilisation by the population.

Going further than questions studied so far

At the international level, the debate on user fees is still raging. It has suffered for a long time from the limited rigour of the empirical evidence available: just like for the health district strategy, it is often difficult to extricate the exact contribution of the user fees (or their removal) to an observed change in the health system performance. The generalisation of randomised evaluations could change the nature of the debate (Ansah et al. 2009;Kremer & Miguel 2007). The barrier character of user fees will not be deniable anymore; the question will probably move to whether curative care should be the key priority for scarce public resources.

In fact, a remarkable trait of the debate on user fees over the last twenty years has been their analysis in isolation of other sources of funding. Yet, some early research revealed that user fees often provided a relatively meagre contribution to the total funding of public health systems (Gilson, Russell, & Buse 1995). While this finding has over and over been used to conclude that the limited benefits in terms of revenue generation were not worth the social cost (exclusion of the poorest), nearly no one came to another obvious conclusion: scientists should widen their attention to other funding sources of public health services as well.

Whereas some governments may have seized the opportunity of the user fee introduction to reduce their commitments to the health sector, many have continued to commit quite considerable amounts of resources to their health systems, if only for the salaries. Furthermore, the public health system is a major beneficiary of external aid. As mentioned in the introduction, in many countries, thanks to stronger commitment to poverty reduction and human development, both governments and donors are increasing the amount of resources allocated to the health sector.

While this creates new opportunities, the best way for the governments and donors to organise and channel their financial support to health facilities has been little studied so far. This neglect is at odds with the fact that compensation mechanisms set incentives that are not neutral on providers' performance (Barnum, Kutzin, & Saxenian 1995), but surely is in line with a general inattention to provider incentives. In fact, even in the very active debate on user fees, provider incentives have not received the attention they deserve.

Our analysis is that the reflection on user fees and health care financing would benefit from a more comprehensive view of the institutional arrangements determining the health care providers' behaviour in low-income countries. In particular, the complementary contribution of the government in the funding, the different means it has at its disposal to channel these funds and the way this affects the incentives faced by the different parties must be brought into the analysis. This broader view would allow to understand better some pitfalls but maybe also to identify some innovative approaches not tried so far. It seems also a prerequisite if one seriously wants to consider a full take-over of health care financing by government funding.

A related debate is the one concerning the relative merits of public health providers versus private ones. One must acknowledge that the introduction of user fees in public health facilities has blurred this distinction. This is clearly the case in China for example, where 'public' hospitals rely for up to 95 % on the fees charged to the patients (Meessen & Bloom 2007). If many agree that we have to move away from simplistic categorisation (Giusti, Criel, & De Béthune 1997), it is clear also that the role and meaning of ownership is still not satisfactorily apprehended today in the policy debate.

Finally, the debate on health care financing could benefit also from a broadening of metrics of focus. In the last decade, health economists studying low-income countries have enlarged their interest beyond access: the welfare effect of out-of-pocket expenditure has become another major topic for research. The truth is that in some countries, out-of-pocket expenditures are so high that some households end up in poverty because of their health care expenditure; this is the so-called 'catastrophic health care expenditure' problem (Wagstaff & Van Doorslaer 2003). This is an important step, yet, the performance of a health system is not limited to these two aspects. Unfortunately, definitions of health system and health care provider performance have been largely ad hoc until today.

Our analysis is that there is today a real need for knowledge going beyond the mere observation that "user fees are a barrier to access and that they hurt the poor first". We need more exploratory work in terms of possible solutions to the prevailing dissatisfactory situation. This exploratory program requires innovative experiments in terms of health care financing schemes. We should not shy away from innovation that may challenge some of our taboos (e.g. the role of the private sector, the power of incentives). Hopefully, this will lead to new solutions. However, empiricism is also reaching some of its limits. We need a clearer conceptual framework to understand why what has been tried so far did not work, to identify new possible policy tracks and more generally to organise our thinking. This framework should be able to welcome theories and models explaining links between key variables.

A summary

In this chapter, we have rapidly presented rural public health systems in low-income countries. We have highlighted two key components: the health district strategy and the user fee policy.

For both policies, we have identified pending questions. We have argued that answering them would require a much better understanding of phenomena such as institutions, organisations, ownership, incentives or performance. In the next five chapters we try to make such a conceptual clarification.

CHAPTER 2. THE ECONOMIC STUDY OF INSTITUTIONS AND ORGANISATIONS

"Pluralism is what holds promise for overcoming our ignorance".

Oliver E. Williamson (2000)

The main assumption of this thesis is that institutional arrangements are key determinants of the performance of any health system. In our introduction, we have argued that institutions have been inadequately appreciated so far in the field of health service organisation in low-income countries; we have identified the possible reasons behind this state of affairs. This incomplete understanding of the 'institutional fact' could partly explain the mismatch between existing institutional set-ups and missions assigned to public health services. This mismatch is, we argue, one of the causes of the low performance of health sector in low-income countries.

In this first chapter, we review the major theoretical propositions made by economists with respect to the study of institutional arrangements. A postulate of this thesis indeed is that recent progress in economic theories has huge potential to rethink the organisation of public health systems in low-income countries. In a first section, we try to organise a bit the profusion of propositions; it is indeed a source of confusion for many researchers. Some key concepts are introduced. A few epistemological issues are discussed. In our second section, we identify the theoretical contributions that look the most promising ones with respect to our research questions. We announce that our main ambition will be to build a framework. We show how our research program distinguishes itself from other works in organisational economics.

2.1. INSTITUTIONAL ARRANGEMENTS FROM AN ECONOMIC PERSPECTIVE

A review of some recent theoretical developments

The interest of economists in institutional arrangements other than the market can at least be traced back to Adam Smith's pin factory (Smith 1776). Yet, following economists such as David Ricardo, Antoine Augustin Cournot, Léon Walras and later on the Neoclassical School as initiated by Alfred Marshall, mainstream economists shifted exclusively their focus to markets.[23] Other modes of human coordination were left to

[23] Economics is in fact far from being a single paradigm or monolithic science. In the shadow of mainstream economics, there have been – and there are still – economists challenging the dogmas and developing their original approaches to the economic reality. They have variable success in the adoption and development of their thinking and in influencing economic policy. Some – like Karl Marx, John Maynard Keynes – were very successful, at least for a period of time (yet, the recent economic crisis is bringing again Keynes to the forefront). Yet, the fate of most of them is to be progressively forgotten, except for in the books of history of economic thought. At the turn of the century, several economists were highly interested in institutions. This interest initiated by German economists, was developed by

other disciplines. In 1901, Emile Durkheim declared that sociology was the "science of institutions" and that economics was the "science of market" (quoted in Aoki 2001, p 4).

The study of the price system engrossed economists for several decades. With the general equilibrium theory, significant progress was made in formalizing Adam Smith's intuition that markets and prices could be effective ways to coordinate agents (Arrow & Debreu 1954); efforts went also to identifying outcomes in situations of imperfect competition and to assessing the possible corrective measures (Tirole 1988). Yet, these mathematically sophisticated developments were made at the cost of major simplifications of the reality and of the other institutional mechanisms in particular. Retrospectively, the main simplification was probably to assume property rights as enforced at a nil cost. Among other things, this allowed neoclassical economics to take the households and the firms as the elementary units of the economic system, i.e. to exclude any of their internal transactions from economic analysis (Gabrié & Jacquier 1994).[24] As far as the firm was concerned, it meant, in particular, that the two factors of production, capital and labour, could be treated in a symmetric way: workers were as disciplined as machines to optimally contribute to output production and any subsequent profit.

We owe to Ronald Coase the identification of the limits of such an unrealistic representation and the emphasis on the need for economists to take a much broader perspective on institutional arrangements. He made his point in two different papers more than twenty years apart.

In 'The Nature of the Firm', Coase argues that by its mere existence, the firm proves that the market reaches some limits as a mechanism to coordinate economic agents (Coase 1937). There are some costs to transact. Coase identified them as the costs of using the price mechanism, which includes the costs of discovering relevant prices, and negotiating and concluding contracts. Once these costs are considered, the firm by its practice of authority relationship may be an allocation mechanism more optimal than the market. Inversely, the fact that the economy does not consist in a sole gigantic firm indicates that there are also costs to internalize transactions. There is therefore an issue of where any transaction should take place.

In 'The Problem of Social Cost', Coase attacked standard economics on a seemingly narrower issue: the alleged divergence between private and social cost stemming from externalities (Coase 1960). Coase contested the moralistic view seeing the negative externality as a situation characterised by a perpetrator (e.g. the polluting plant) and a victim (e.g. the downstream fisherman). The externality is in fact a situation where at least two parties are willing to use one scarce resource (e.g. the river) in inconsistent ways. Coase invites us to see any production factor not as a physical unit, but as a bundle of utilisation rights on a given resource. In fact, any transaction is on some utilisation rights (yet, usually on different physical units). A corollary of this vision is that

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American economists to a point that it became the school of 'institutional economics'. Thorstein Veblen, John .R. Commons, Wesley Clair Mitchell and Walton .H. Hamilton are traditionally considered as the main contributors to this school of thought. Their strength was to see the economy as a changing process and to acknowledge the place of power and values. Their weakness – probably the main cause of their limited success – was the lack of a theory and the overemphasis on empiricism and description. This tradition – defended by the Association for Evolutionary Economics and its Journal of Economic Issues – has recently received a boost thanks to new contributors such as W. Richard Scott. By preference and due to a need of focus, we have decided not to consider this school of thought. Other heterodox schools such as the French "*Economie des conventions*" are also not covered.

[24] As a matter of fact, co-ordination issues within the firms became the realm of management schools.

decentralised bargaining is, theoretically at least, also the best way to deal with externalities. Rightly, this paper is mainly known as the first proposal of what will be later called the *'Coase Theorem'*.[25] Yet, its main legacy is maybe somewhere else: it stimulated economists to pay more attention to property rights, a very neglected field until then (Demsetz 1998).

Whereas 'The Nature of the Firm' remained in the shadow for more than three decades, 'The Problem of Social Cost' attracted quickly a great deal of interest. Both papers shared some common messages, the main one being the importance of integrating transaction costs in the economic analysis.[26] They also shared the characteristic of being very innovative in terms of questions they were raising, and understandably, of letting several questions pending. Consequently, they opened whole new research programs to economists, which we can identify respectively as the 'theory of the firm' (why do firms exist; what determines their boundaries relative to the market; and the analysis of their internal organisation pattern) and the broader field of 'law and economics'. Tracking down the developments of both papers is a nice way to organise our review of the numerous and quite scattered economic theories dealing with institutional arrangements. As much as possible, we will highlight features possibly interesting for our own research question. The review is also an opportunity to introduce some key concepts.

Theories of the firm

In his paper on 'The Nature of the Firm', Coase did not fully identify the circumstances under which the cost of managing resources within the confines of the firm is lower relative to the cost of allocating resources through market transactions. Two answers, to which one can link some later developments, were put forward in the seventies.

The 'old' property rights theory

The first proposal originated from two property right economists, Arman Alchian and Harold Demsetz. In their famous paper, they first observe (1) the existence of situations favourable to team production (any production process in which an output by a team of workers is greater than the sum of the individual outputs), (2) the incentive for each individual team member to economise on his effort (to privately benefit from leisure), (3) the opportunities for him to shirk (because of the difficulty for anyone, including colleagues, to measure individual productivity) and (4) the possibility to partially observe effort (Alchian & Demsetz 1972). From these observations, they infer that the most efficient institutional arrangement in such conditions is the one in which a team member (i) gets specialised in the tasks of monitoring the efforts by others and of designing, negotiating and enforcing contracts in such a way that individual effort beneficial to the team production is rewarded and (ii) gets the residual claim status, i.e. rights on the net earnings of the team (net of payments to other inputs).

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[25] There are several interpretations of the theorem (Medema & Zerbe 1999). The standard one is the following: if property rights are clearly delineated (no transaction cost), right holders can find an agreement without interference of a third-party regulator and the final allocation of rights over resources will be the most efficient from a society's perspective, regardless of the initial distribution of property rights.

[26] Yet, it is not Coase who coined the term 'transaction costs'. In his 1937 paper, he refers to 'the cost of using the price system'; in his 1960 paper, he refers to the 'costs of market transactions'. The issue of transaction costs was in fact raised in parallel by neo-classical economists in the field of monetary economics and general equilibrium theory. For a history of the concept of transaction costs, see (Allen 1999;Klaes 2000).

This attempt to provide a coherent theory of the capitalist firm, i.e. an explanation for (1) its existence (its superiority to a market-based arrangement) and (2) its very nature, has been, if not fully convincing, highly influential.[27] It has initiated a new school of thought, the *property rights theory of the firm*.[28] According to this school of thought an organisation is better seen as a *nexus of contracts* distributing rights on assets (Cheung 1983;Jensen & Meckling 1976). Contrary to Coase, these authors do not see a dichotomy between the market and the firm: difference just lies in the nature of the contracts.

Within this framework, we would contend that the research focus has mainly been to explain why under a given set of conditions it is a given class of patrons (the investor, the entrepreneur, the employees…) that holds the residual rights and to study the coordination problems generated by the contingent division of roles.[29] The main underlying assumption is that without government intervention (including tax distortion), the form of organisation that survives in a sector is the one that delivers the product demanded by the customers (a good, a religious service, education…) at the lowest price while covering costs (Fama & Jensen 1983b). The bulk of works has been theoretical. It has focused on for-profit organisations (the capitalist firm, employee-owned firms, cooperatives…). Yet, there were also applications to other situations, including non-profit organisations (Hansmann 1996). At the core of most of these theories lie the so-called *agency problems* (Fama & Jensen 1983a): the organisation is mainly seen as a mechanism to overcome asymmetric information on behaviours between agents and their principals.[30] The costs to minimise are then the so-called 'agency costs', which include the costs of structuring, monitoring, and bonding a set of contracts among agents with conflicting interests, plus the residual welfare loss[31] incurred because the cost of full enforcement of contracts exceeds the benefits (Jensen and Meckling 1976). Among the different agency problems, the one between the owners of the firm and its manager – the issue of the separation of ownership and (effective) control – has received peculiar attention (Fama & Jensen 1983b). A major field of application has been the design of compensation schemes to managers (e.g., stock options). The main handicap for the development of the sub-paradigm has probably been the vagueness of its assumptions (on rationality, completeness and explicitness of contracts…). Further developments came from sub-paradigms which have been more explicit in this respect.

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[27] For Alchian and Demsetz, the capitalist firm is the contractual organisation of inputs characterised by the present features: (a) joint production function; (b) several input owners; (c) one party common to all the contracts of the inputs; (d) that has rights to renegotiate any input's contract independently of contracts with other input owners; (e) that holds the residual claim; and (f) that has the right to sell his central contractual residual status (Alchian & Demsetz 1972). As a matter of fact, Alchian and Demstetz's theory does not provide an explanation for the boundary of the firm. See (Gabrié & Jacquier 1994) for a critique.

[28] As our reader will note throughout this chapter, there is an issue of the right label for each theory. The 'property rights theory of the firm' label is today also used to categorise the work along the Grossman-Hart-Moore's tradition (see for example, Williamson 2000). Some authors distinguish both groups of theories by referring to the 'old property rights theory of the firm' (the theory here under review) and the 'new property rights theory of the firm (see later in the chapter). The label 'agency theory of the firm' is sometimes also used to refer to the Alchian-Demsetz-Jensen-Meckling's tradition (Charreaux 2002). Yet, this creates confusion with the more formalised theory of complete contracts (see later in the chapter)! A similar confusion exists for the label 'New Institutional Economics'.

[29] For a quite similar interpretation, see (Grandori 2005).

[30] In his book "The Ownership of Enterprise", Hansmann argues that other market imperfections play as well (Hansmann 1996).

[31] Against the first best solution obtained under the fictional situation of costless enforcement of contracts.

The transaction cost theory

The second proposal was made by Oliver Williamson (Williamson 1975;Williamson 1985;Williamson 1996). Compared with property rights theorists, Williamson's work is more in line with the Coasean track of seeing the organisation and the market as alternative arrangements for coordinating transactions; it is also one step further away from neo-classical economics and Williamson would argue one step closer towards realism.

Williamson's research program is to demonstrate that the main purpose and effect of organisations – and non-standard forms in particular – are to economise on transaction costs[32]. His approach to the problem of the existence and nature of the capitalist firm is original in terms of assumptions and methods. He adopts Herbert Simon's view on the cognitive capacity of human beings: they are *bounded rational*: "intendedly rational, but only limitedly so" (Simon 1947: xxiv).[33] Another behavioural assumption is that individuals are opportunistic, i.e. they seek their self-interest with guile. Then, Williamson takes the transaction as his main unit of analysis.[34]

Through a careful look at transaction characteristics – Williamson allows for the complexity of actual institutional arrangements (but with a focus on one bilateral relationship) – he tries to explain the existence and properties of alternative modes of coordination for the production of goods and services. His approach, which he calls "discrete structural analysis", is comparative: the idea is to confront, from a transaction cost perspective, alternative coordination arrangements. Williamson's work on the boundary of the firm (i.e. the issue of *vertical integration* of a supplier or of the 'make or buy' decision), is probably his most acknowledged contribution to the economic field. According to him, three transaction characteristics are particularly critical in the explanation of the adoption of a hierarchical relationship (or vertical integration) instead of a market one: frequency, uncertainty and *asset specificity*.[35] The more these characteristics are present, the more efficient hierarchy is to resolve possible ex post disputes.

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[32] Williamson defines transaction costs as "the ex ante costs of drafting, negotiating, and safeguarding an agreement and, more especially, the ex post costs of maladaptation and adjustment that arise when contract execution is misaligned as a result of gaps, errors, omissions, and unanticipated disturbances" (Williamson 1996, p. 379).

[33] The bounded rationality 'assumption' just starts from the observation that human beings have limited cognitive competence to receive, store, retrieve and process information. It is to be contrasted with the standard neo-classical assumption that agents are equipped with *substantive rationality*, i.e. in possession of complete information concerning the structure of the issues they confront, an ability to fully order their preferences and a capacity to compute the expected values of different states of nature at a zero cost (Brousseau & Glachant 2002).

[34] "A transaction occurs when a good or service is transferred across a technologically separable interface" (Williamson 1985, p.1).

[35] An investment has an asset specificity character when it cannot be redeployed to alternative uses or by alternative users except at a loss of productive value (Williamson 1996). The canonical example is the dies used to shape steel for making sections of the body of a car (Klein, Crawford, & Alchian 1978). These dies are expensive to make and are worthless if not used for the specific model. Imagine the case of a car manufacturer contracting the production of some body parts to a supplier. Ex ante, it is impossible to write a contract that will consider all the possible occurrences that may affect the sharing of the returns from the investment; the contract will be *incomplete*. The supplier then faces a risk of *hold-up*: after production of the dies, the car manufacturer may take argument of some occurrences to require a renegotiation of the contract terms; the supplier having lost most of his bargaining power, as he lacks alternatives for the use of dies. Aware of the hold-up risk, the supplier may refuse to undertake the investment, which would constitute an economic loss for both parties. In such a situation, transaction cost economics predicts ownership of the supplier by the car manufacturer.

Williamson's personal research program has unfolded over more than a quarter of century. The confirmatory empirical studies – they are quite numerous, but with sometimes debatable methods – have been conducted by others (Klein, Crawford, & Alchian 1978). While many studies have brought evidence in favour of the theory (Joskow 1988;Klein 2005), there are also plenty of actual cases showing that there are alternatives to integration for parties facing a *hold-up problem*[35] (Holmstrom & Roberts 1998); accordingly, Williamson and transaction costs economists have adapted their theory by considering intermediary forms such as hybrids and long-term contracts (Ménard 2004); empirical studies seem to support also transaction cost economics propositions with respect to such kinds of governance arrangements.

Williamson has had an impact much beyond his own 'thesis'. He has popularized the research program on the causality between transactional properties and governance structure, and has more generally brought transaction costs in the limelight. No one would deny today that they matter; yet, few would agree that they explain everything. For example, organisational theorists consider that Williamson overvalues cost minimization as the organisational imperative; strategizing can be more fundamental (Barney & Hesterly 1999). Another weakness is the insufficient account of the costs induced by integration (Grossman & Hart 1986). Internal organisation is in fact susceptible to costly bargaining and influences behaviour. Authority can be used in an opportunistic way. As a matter of fact, it is unclear how bureaucracy costs (which do not relate to one single transaction) can be compared with the cost related to the transaction of interest (Milgrom & Roberts 1992).

Law and economics

As made clear with the 1960 paper, Coase's idea of transaction costs had meanings much beyond the theory of the firm. Two main developments deserve reporting.

Property rights economics (again)

The first one has been the progressive clarification of the reality of property rights from an economic perspective. Researches have revolved around the condition for the formation of private property rights, the issues related to the enforcement of rights and the impact of their structuring (i.e. bundling or partitioning) on efficiency. This research program, which encompasses the theory of the firm mentioned above, is traditionally labelled *property rights economics* (Furubotn & Pejovich 1972). A key contributor was Arman Alchian. In his 1961 paper for instance, he identified economic rights, i.e. actual control over resources, as the real focus for analysis (rather than legal rights) (Alchian 1961). Another major contributor was Steven Cheung; his analysis of sharecropping arrangements is for example one of the first real attempts to study contracts (Cheung 1969); with his work, he generalised also Coase's 1960 original argument – when transaction costs are nil, organisations and institutions play no role in the allocation of resources – and tightened even more the link between property rights and transaction costs. More recently, Yoram Barzel has developed in a more systematic and positive way several key questions related to property rights (Barzel 1997). With Douglas Allen, he has put the stress on the costs of measuring attributes of assets. Among other things, their work has led to definitions of transaction costs stressing the issue of protection and enforcement.[36] The work by this group sheds also a critical light on some other sub-

[36] Allen defines transaction costs as 'the costs establishing and maintaining property rights' (Allen 1999). For Barzel, transaction costs are "the costs associated with the transfer, capture, and protection of rights" (Barzel 1997, p. 4). Similarly, Eggertsson defined transaction costs as "an actor's opportunity cost of establishing and maintaining internal control of resources. Transaction costs, the costs of measurement and

paradigms. Their theoretical propositions highlight the limits of formal approaches (complete and incomplete contract theories, see below) which restrain margins available to economic agents for optimisation (Foss & Foss 2000;Foss & Foss 2001). On the empirical side, Allen and Lueck's studies of farming in the US have also forced contract theorists to reconsider their standard explanation for sharecropping contracts (risk sharing) (Allen & Lueck 2003;Dubois 2002;Stiglitz 1974).

The institutional environment school

The second major development is the whole research program opened by Douglas North on institutions and economic growth (North 1981;North 1990;North & Thomas 1973). North's constant concern has been to establish a link between institutions, defined as the "the humanly devised constraints that shape human interaction" (North 1990), and the performance of an economy at macro-level. Institutions are seen as the rules of the game, organisations as the players of the game. Along North's view, institutions (e.g. the legal system, social norms), by allowing minimising uncertainty and thus cost of transacting[37], are a key to economic performance.

By writing books in a style accessible by all, North has done a lot to popularise institutions as a research topic for economists. Although his approach has limits from a scientific perspective (North uses concepts often vaguely defined), its impact has been tremendous. The research program 'institutions-economic performance' is today one of the most dynamic ones in applied economics. While North and others have initiated it mainly through historical studies, its most active application today, largely by contributors only slightly associated with New Instutional Economics (NIE), is the understanding of institutional challenges met by developing and transitional economies (La Porta et al. 1999;Platteau 2000;World Bank 2002). His whole work has contributed to legitimise questions on how culture, religion, tradition, norms, more formal institutions (e.g. constitutional regime) and State governance support markets or not, and play as possible causes of the disappointing economic performance of many 'developing countries'; these questions were long overdue, given the fact that such hypotheses had been shelved during nearly thirty years of development economics.

Formal theories

As evidenced by the seminal texts founding these different 'schools of thoughts', the study of institutions and organisations gave new legitimacy to discursive approaches to economic phenomena. Yet, this does not mean that mathematical tools were abandoned, quite the opposite: the numerous intuitions developed by pioneers opened new territories for mathematical modelization; the later led itself to new insights in institutional phenomena. Game theory developments have been particularly useful for this exploration (Fudenberg & Tirole 1991). Three branches, among others, deserve attention in this chapter.

The complete contract theory

In the seventies, mainstream microeconomists progressively shifted their interest from the consistent but unrealistic general equilibrium models to partial equilibrium models taking into account the fact that in the real world, information is imperfectly shared

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enforcement, are incurred to protect values both in voluntary exchange and against involuntary exchange, such as theft" (Eggertsson 1996, p. 8). Along the property rights view, fencing one's property or hiring a private guard is a transaction cost.

[37] North has defined transaction costs as "the costs of measuring the valuable attributes of what is being exchanged and the costs of protecting rights and policing and enforcing agreements" (North 1990, p. 27).

among economic agents (Akerlof 1970;Spence 1973). The point of focus rapidly became the institution of the bilateral contract (Hart & Holmstrom 1987). The best framework to grasp the key insights of this corpus of research is the *principal-agent model*, which in its simplest form formalises a situation where a monopolistic *principal* delegates a task to a monopsonic *agent* through a 'take it or leave it' contract (Salanié 1999). Delegation of tasks is indeed a feature of many economic relationships. It can have several motives: the mere seizure of the increasing returns associated with the division of tasks or the inability of the principal to perform the task himself (e.g. geographical distance, lack of time) or some form of bounded rationality of the principal. By the mere fact of delegation, there is an asymmetry of information between the principal and the agent (Laffont & Martimort 2002). The agent may have some private information on the action she takes – her effort is not observable by the principal; this is the case when there is hidden action or *moral hazard*; or the agent has some private knowledge about her cost or valuation that is ignored by the principal (e.g. the opportunity cost of the tasks, the extent to which the agent's abilities match the technology used by the principal, the risk profile) the case of hidden knowledge or *adverse selection*. The combined presence of this private information and of uncertainty added to the fact that the principal and the agent have conflicting objectives (a situation directly stemming from the standard assumption that economic agents pursue their private interests) generate incentive problems. The issue for the principal then is to propose the optimal contract to his agent, i.e. something interesting enough to induce her participation, but minimising the efficiency loss for himself.[38]

This research program is sometimes referred to as the '*incentive theory*'. Yet, to reflect the fact that the contract is the key institution of interest, '*contract theory*' is often preferred (or even more specific: '*complete contract theory*' in order to make a distinction from incomplete contract models, see below).

The development of the program has consisted in a very rapid accumulation of a corpus of analytical models, with mathematical formalisation giving homogeneity to the whole. A few early papers brought the main insights. Later developments mainly consisted in variations in terms of contractual configurations, increasing sophistication and application of the tools to various economic fields.

A major field of development has been the study of the structure of organisations, including their internal and decision-making processes. Contract theory has been peculiarly powerful to explore the potentials and limits of different remuneration schemes and their links with job description (Holmstrom & Milgrom 1991). A side-

[38] Let us provide an illustration for moral hazard. Take a landlord contracting a tenant farmer to work on a piece of land (Stiglitz 1974). To some extent, they have conflicting objectives: the landlord wants to maximise his revenue, the farmer wants to maximise her own wellbeing, i.e. to obtain high revenue but with a minimal effort. Both parties know that two main factors may explain a poor harvest, bad weather conditions and farmer's effort (not observable by the landlord), and that their respective contribution is difficult to disentangle. The best solution for all parties (the so-called *first best solution*) would be that the farmer pays the landowner the market fixed rent for having all decision rights on the use of the land and keeps all the revenue from the harvest (i.e. has the residual claimant status). Under such an arrangement, the non-observability of the farmer's effort is not a problem for the landlord anymore, as his income is not dependent on the effort. Yet, the farmer may be risk-adverse and refuse such a contract. The only acceptable contract for both parties may then be a sharecropping contract, where the landlord is partly paid with a share of the harvest. Yet, while the sharecropping ensures that the farmer does not bear fully the risk related to the weather, it reduces also the incentive for the farmer to exert full effort (as she will not benefit from all the fruits of her work); there is an efficiency loss. This arrangement is a so-called *second best solution*.

benefit has been the formalisation of some earlier views on the firm[39] and some original steps toward a theory of the firm as an incentive system (Holmstrom 1999;Holmstrom & Milgrom 1994).

The framework is particularly cherished for its flexibility – by nature, contract theory can be applied to any imaginable (ex ante) incentive alignment problem. Models are particularly useful to compare schemes (if a benchmark is available) or to highlight influence of scheme parameters on economic agents' behaviours (comparative statics).

For a long time, the main criticism towards the research program was that the explosion of theoretical models and their increasing sophistication had not gone hand in hand with empirical validation of the theoretical propositions (Salanié 1999). The profession's practice was to build a model and to bring a few anecdotes to show how the model was depicting well the reality ('casual empiricism'). Very few authors made the effort to identify propositions subject to empirical test.

Things have changed over these last few years (Chiappori & Salanié 2003). However, progress is uneven across empirical research programs: there is mounting evidence that contractual forms have effect on behaviours ("incentives matter"); studies checking whether optimal contracts are chosen in the real world are much rarer. New methodological developments, especially those dealing with the pervasive problem of *endogeneity*[40], are promising.

Other limits of the framework, mainly in terms of discrepancy between the models and the reality have been highlighted. Some deal with the behavioural assumptions, including the implausibleness of complete contracts, at least for deals that elapse on a long period. Other critics have underscored that many principal-agent models, to be tractable, handle only a short number of variables. This has often led to models drastically limiting the variables subject to optimisation by the economic agents (Foss & Foss 2000;Otsuka & Hayami 1988) and major simplification of reality. Obviously, the focus on one institution (the bilateral contract) limits also the external validity of any findings: in a different context, outcomes might be very different (Aoki 1996).

The incomplete contract theory

The *incomplete contract theory*, often also called the *(new) property right theory of the firm* (NPR), addresses some of the theoretical limits of complete contract theory (Grossman & Hart 1986;Hart 1995;Hart & Moore 1990). When Sanford Grossman and Oliver Hart designed the first incomplete contract theory model, their declared intention was both to formulate a model for Williamson's insights on ownership as a solution to the incentive investment problem due to the risk of hold-up, and to surpass them by creating an analytical framework able to embrace simultaneously the benefits and the costs of integration (Brousseau & Fares 2000). Because of some key departures from Willamson's theory, NPR theory has eventually found its own way.[41]

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[39] See for example, (Holmstrom 1982b) for a formalisation of Alchian-Demsetz's proposition of the firm as a solution of moral hazard in teams.

[40] Take the case of a voluntary health insurance. If there is a correlation between subscription and utilisation of health services, it can be that households with more health problems decide to enrol (adverse selection) or that once enrolled, households use more health services (moral hazard).

[41] The main source of difference is the way that incompleteness of contracts is justified (Brousseau & Fares 2000). In Williamson, incompleteness of contracts is endogenous to the theory: it is due to uncertainty and the bounded rationality of agents involved in the transaction. In NPR models, the argumentation is more ad hoc. While transacting parties are equipped with substantial rationality, it is assumed that the third-party

At the core of NPR theory are the non-human *assets*[42] required for the production of a final good or service (e.g. a building, a machine, a database). It is their ownership that defines the firm. For Grossman-Hart-Moore, ownership is equal to holding the *residual right of control* over the non-human assets[43], i.e. the decision rights not specified in the contracts between the firm owner and other transactional counterparts.

The central idea of NPR models is that asset ownership (assigned ex ante) provides leverage at the stage of ex post negotiation on the actual division of the surplus generated by the transaction, which influences bargaining outcomes and henceforth ex ante incentives to invest for both parties. This ex post negotiation happens because of the incomplete nature of contracts: in reality, contracts are incomplete, as it is impossible to specify a sharing rule for each possible contingency. Ownership can be seen as the institutional solution to the related coordination problem. While there is a dimension of symmetry in control – the residual rights bought by one party are lost for the other party, the allocation of ownership is potentially wealth-creating: benefits of control can be greater for one party than the other. The issue then is to assign ownership in an optimal way – by consideration of the benefits of integration of the input supplier (better coordination), but also its costs (attenuation of the incentives for the integrated party).

The most acclaimed achievement of NPR theory is the production of a formalisation of the interplay between the firm and the market, something that was missing since Coase's seminal idea. In NPR models, the market is formalised as the right for parties in transaction to bargain and if not satisfied, to exit with the assets owned. Similarly, power consists in the ability to exclude the other from the use of the asset. Thanks to the unified account of the costs and benefits of integration, it is possible to assess the net gain (or loss) of integration and to explain both the limits of the market and of the firm (Garrouste & Saussier 2005;Gibbons 2005).

Incomplete contract theory has been applied to all fields where asset ownership could be a useful instrument for influencing individual incentives. The tool has been peculiarly helpful to re-think the right scope of a government, including the issue of privatisation (Shleifer 1998). What service should the State deliver in-house and what should it contract-out to the private sector (Hart, Shleifer, & Vishny 1997)? What are the relative merits of governments and private organisations for delivering 'public goods' (Besley & Ghatak 2001)? Within the State, what service should be entrusted respectively to central and local governments (Jack 2004)? As far as public-private partnerships are concerned, what is the right bundle of services (e.g. construction of the building + its management + the delivery of services) to contract (Bennett & Iossa 2006;Hart 2003a)? All these questions are examples of topics whose understanding has benefited from incomplete contract modelisation.

While incomplete contract theory is still undergoing theoretical development, it has already had its share of critical reviews. Some criticisms are highly technical and deal mainly with assumptions backing contract incompleteness. Others are more prosaic; several authors have stressed that ownership boundaries may have other purposes than addressing incentive problems with relation-specific investment. Conversely, investment incentives are provided by many other ways than ownership (Holmström & Roberts

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who in complete contract theory is in charge of last resort enforcement of contracts (i.e. the court) suffers from some kind of bounded rationality: it cannot verify the relevant state of nature.

[42] An asset is any economic resource. It can be tangible (e.g. a piece of land, a building, a machine, a human being) or intangible (e.g. goodwill, a patent, a trademark).

[43] In the absence of slavery, residual rights on human assets always remain with individuals.

1998). Criticisms have been made also on the realism of the view proposed by NPR theory. As far as the firm is concerned, the model represents the situation of the owner-manager firm, a reality quite far from the one of large companies. Eventually, incomplete contract theory shares some of the limits of complete contract theory: it pays no attention to entrepreneurship, it suppresses some margins for optimizing agents (Foss & Foss 2000) and because of the difficulty to measure explanatory variables, has received little empirical validation so far (Baker & Hubbard 2001;Masten & Saussier 2000). Despite these criticisms, it is recognised that NPR been particularly helpful to bring a much better understanding of what ownership really means.

Comparative institutional analysis

A last research question which has greatly benefited from formalisation is the one of the origins, nature, and implications of institutions and institutional change. Two Stanford scholars, Masahiko Aoki and Avner Greif, have played a key role in the emergence of an original research program – *Historical and Comparative Institutional Analysis* – that elegantly combines evolutionary or repeated classical game theory and historical methods (Aoki 1996;Greif 1998): (1) a hypothesis regarding a particular institution is formulated based on a micro-level examination of a historical episode; (2) it is expressed /deductively explored with the assistance of a context-specific game model; (3) the historical process is empirically scrutinized through comparative case studies (over time and space), a process which allows substantiation of the game, especially the issue of the equilibrium selection (among the multiple possible equilibria).

This program shares obvious similarities with North's one, but it tackles a rather upstream question: why do societies evolve along distinct institutional trajectories; why do societies fail to adopt institutions successful elsewhere? They view institutions as the outcome of strategic behaviours by players of games. They are particularly interested in institutions that endogenously emerge and are self-enforcing, in the sense that they do not rely on third-party enforcement (e.g., norms). While most of their studies focus on institutional process in particular historical episodes (e.g. the role of merchant guilds in Medieval Europe (Greif, Milgrom, & Weingast 1994)), some more general insights have progressively emerged. Among other things, their work allows to bring answers to questions raised by North in his book "Institutions, institutional change and economic performance". Their studies highlight that a society's institutions are a complex web in which informal, implicit institutional features interrelate with formal ones to create a coherent whole. These interrelations determine institutional change and may cause the institutional complex to resist change more than its constituting parts would have done in isolation (Greif 1998). These are useful contributions to understand better the interdependencies and complementarities among institutions, the importance of history and the so-called issue of *path dependency*. In terms of prescription, all this work clearly alerts against universalistic institutional arrangements and simplistic approaches such as 'cutting & pasting' of an institution form (e.g. a contract) from a context to another. On a more positive note, it suggests also that cross-country institutional diversity creates opportunities (Aoki 1996).

A rapid assessment

This profusion of work around 'institutions' and 'organisations' may let our readers puzzled.[44] For sure, anyone trying to bridge this considerable body of knowledge with

[44] Note that our review was not exhaustive at all. For example, as far as the theory of the firm is concerned, other interesting recent strands are: relational contracts (Baker, Gibbons, & Murphy 2002), firm as

problems observed in the real world has not an easy task; the first challenge being to find one's own way among the theories. Frontiers between the different 'sub-paradigms' are obviously blurred (Ménard 2005). Several of them share some common research questions (e.g. the boundaries of the firm), but the overlap is never complete. Commonalities and differences exist also in terms research approaches and 'languages' (e.g. discursive economics versus mathematical formalisation). Very confusing also for 'outsiders' has been the practice by the different sub-paradigms of using a similar term in reference to different phenomena. The most remarkable illustration of this is certainly the multitude of definitions for the transaction costs. Furthermore, we have seen that this label issue applies also to the naming of the different sub-paradigms.

This 'mess' has inspired a growing literature of interpretation. As we have seen, there have been early efforts to formalise ideas that were initially put forward in a discursive manner. Interestingly enough, the Williamson-Hart story has revealed that the expression '*traduttore,trattore'* also applies to economics. Experience has shown also that when different theories address the same research question, there will be effort to come with a synthesis or at least an integrative framework; a good example of such a dynamic is the work on the boundaries of the firm (Gibbons 2005;Holmstrom 1999). Comparing the empirical performance of competing theories should ideally be the ultimate test. Unfortunately, there has been too little of that (Klein 1999;Masten & Saussier 2000). A remarkable exception – and a testimony of the difficulty to decide between theories – has been all the work on the sharecropping contract (Ackerberg & Botticini 2002;Allen & Lueck 2003;Dubois 2002;Otsuka, Chuma, & Hayami 1992;Otsuka & Hayami 1988;Shaban 1987). As far as the firm is concerned, it is unclear whether one theory will emerge as the ultimate one; the consensual stance so far has often been to recognise that various theories are complementary to each other (Foss, Lando, & Thomsen 2000;Holmstrom & Roberts 1998).

Help may also come from 'meta-theorists' trying to look at the theories from epistemological or history of economic thought perspectives (Acheson 2000;Klaes 2000;Pessali 2006) . The concept of 'theoretical isolation' put forward by Uskali Mäki is particularly interesting; it helps to reveal which dimension of reality each sub-paradigm is excluding and including in its endeavour to comprehend organisational phenomena (Foss & Foss 2000;Mäki 2004). As far as theories of the firm are concerned, one can roughly say that each theory relaxes the neo-classical hypothesis of perfect and costless enforcement of property rights, but they do it on some dimensions only and all of them, on different dimensions.

In fact, we cannot deny there is a fair share of ex post interpretative reconstruction in our effort to give some logic to all these strands of theories. Except, perhaps, for the complete contract theory, homogeneity and consistency are not always present within a sub-paradigm. The truth is that these research programs over organisations and institutions are an evolving process. Frontiers between the different sub-paradigms are porous. Coase inspired Williamson who inspired Hart who inspired Holmström, Tirole… and Williamson again. While some authors, like Coase and Williamson, have been loyal to their first intuitions, a few like Jean Tirole or Jean-Jacques Laffont , inspired by the power of the mathematical formalisation have taken pleasure to do some cross-bordering. Eventually many applied economists have weak preference with respect to

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communication network (Bolton & Dewatripont 1994), firm as a multicontract organisation (Laffont & Martimort 1997), firm as a dedicated hierarchy (Rajan & Zingales 2001) and attention to entrepreneurship as a core feature (Casson 2005).

theories, and will pick the model the most convenient for their specific question. The only certitude is that there is today a community of economists studying organisational and institutional phenomena. While there are areas of disagreement, most of them probably share the opinion that "plurarism is what holds promise for overcoming our ignorance" (Williamson 2000).[45]

The aim of this thesis is not to solve hermeneutic problems. Yet, in order to move forward, we need to stabilize a bit the content relative to each sub-paradigm. Table 1 provides a comparative overview of the different sub-paradigms dealing with institutional arrangements.

For each of them, we provide a label (and the names of some key contributors), describe the research focus, the main hypothesis (to test), the approach, the key assumptions underlying the research program[46], the main transaction costs of interest, the view of the firm conveyed by the research program, the way to test the hypothesis, evidence of scientific performance, including some criticisms made to the program.

The differences between these theories should not hide what they have in common. First, they share a common interest: institutional arrangement. "Transaction and their related costs are at the core of the theory and constitute the force that unifies the sub-fields that have developed" (Ménard 2001). Behind this lie two common postulates: (1) institutions matter and (2) they are susceptible to analysis by the tools of economic theory. Secondly, several of them share a common challenge: to propose an integrative framework to account for the interplay between markets and organisation. Thirdly, all of them share with the neoclassical theory the orientation towards efficiency. The main difference with neoclassical theory is the institutional perspective, i.e. efficiency is searched through institutional arrangements (Gabrié & Jacquier 1994). In that sense, the different theories are much more complementary to the neoclassical theory than substitutes. They just tackle situations which the latter does not cover: when transaction costs are not nil.

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[45] A nice testimony of this happy coexistence is the Handbook of New Institutional Economics (Ménard & Shirley 2005): it gathers contributions by Coase, North, Williamson, Weingast, Greif, Allen and Lueck, among many others!

[46] All of them are economic theories and adopt methodological individualism as an approach to social phenomena.

Sub-paradigm	**Research focus**	**Main hypothesis**	**Approach**	**Key assumptions**	**Main transaction costs of interest**	**View of the organisation**	**Testing the theory**	**Performance of the program (+)**	**Performance of the program (-)**
(Old) property rights theory of the firm *Alchian-Demsetz; Fama-Jensen-Meckling; Hansmann*	To apply property right economics to the study of formal organisations; to explain the presence of various ownership models for formal organisations; to study the coordination problems generated by the contingent division of roles.	The dominance of a given ownership model in an industry stems from its superiority in terms of minimizing information costs between input suppliers.	Discursive and formalization. Comparison across sectors. 'Excogitated speculation'.	Substantive or bounded rationality (some variation across theories); imperfect information; uncertainty.	The agency costs (defined à la Jensen-Meckling).	Organisations are seen as nexus of explicit contracts.	Explanatory variables: the information costs affecting the production of the specific good or service. Dependent variable: the identity of the patron holding the residual rights.	Has structured the study of the presence of various ownership models. Has inspired contract theorists.	As the explanatory variables cannot easily be measured, the program cannot really go further than 'explanatory tales' for observed phenomena.
Transaction cost economics à la *Williamson* The 'Governance branch of New Institutional Economics'	To explain the existence and properties of alternative modes of coordination for the production of goods and services; to explain the boundaries of the firm.	Governance structures are chosen by concerned parties for their performance in minimizing transaction costs.	Mainly discursive. Micro-analytic: the transaction is the unit of analysis. Comparative. Realistic and empirical drive, with quantitative and qualitative methods.	Bounded rationality and uncertainty (together they imply incomplete contracts); opportunism.	A focus on complex transactions and the related ex post costs of maladaptation and adjustment that arise when contract execution is misaligned as a result of gaps, errors, omissions and unanticipated disturbances.	Spot markets, incomplete long term contracts, hybrids, firms and bureaus are alternative governance structures for completing transactions.	Explanatory variables: (1) the characteristics of the studied transaction; (2) the institutional environment. Dependent variable: the actual governance structure adopted for the studied transaction.	Appreciated for its realism and testability. Validated by empirical studies in some situations. Highly inspirational.	Criticized for its poor account of internal organisation costs and its overstress on transaction cost minimization.

Table 1: Comparison of different organisational economic theories

Sub-paradigm	**Research focus**	**Main hypothesis**	**Approach**	**Key assumptions**	**Main transaction cost of interest**	**View of the organisation**	**Testing the theory**	**Performance of the program (+)**	**Performance of the program (-)**
Incomplete contract theory or Property right theory of the firm à la *Grossman-Hart – Moore*	To formalize Williamson's insights on vertical integration as a response to hold-up problems stemming from investment in specific asset. To study what determines firm boundaries.	A firm's boundaries reflect trade-offs surrounding the allocation of residual rights of control between the firm and its suppliers of inputs.	Formalization "à la *MIT"* (keep your model simple to make your message clear).	Transacting parties have substantive rationality. Contracts are incomplete. This is derived from the non contractibility and *non verifiability* (i.e. non observability by a third party possibly in charge of enforcing the contract) of the variable under optimization. Parties to a contract are unable to commit not to renegotiate their contract. Enforcement costs of ownership over non-human assets are nil.	Ex post negotiation costs due to incompleteness of contract.	The firm is seen as a set of non-human assets under common ownership.	Explanatory variable: respective marginal returns to non-contractible investment. Dependent variable: integration or not of the studied transaction.	Highlight the role of ownership of non-physical assets in determining firm boundaries. It is in fact a theory of asset ownership (in the framework of a transaction for an intermediary good).	Very little empirical work so far (because of the difficulty to measure the explanatory variable). Ownership boundaries may have other purposes than addressing incentive problems with relation-specific investment. Conversely, investment incentives are provided by many other ways than ownership.

Table 1: Comparison of different organisational economic theories

Sub-paradigm	Research focus	Main hypothesis	Approach	Key assumptions	Main transaction cost of interest	View of the organisation	Testing the theory	Performance of the program (+)	Performance of the program (-)
Complete contract theory or Theory of incentives *Stiglitz; Akerlof; Holmström; Milgrom; Laffont*	To assess how contracts can mitigate welfare loss due to asymmetries of information. In situations of task delegation, identify how the principal can best induce his agent to behave according to his interest. The problem is not specific to the firm; it exists for interactions both on the market and within organisations.	There are contracts more efficient than others to get a thing done.	Formalization. It models the interactions between a few individual economic agents. It is an instrumentalist approach (versus realistic); it stylized facts. It is to be assessed on its predictive power.	Substantive rationality (for example, the principal is able to put himself in his agent's place to 'feel' the participation and incentive compatibility constraints) Asymmetric information (the agent has private information on at least one variable). Uncertainty. Possible to write complete contracts at a nil cost. The contract formalizes a remuneration scheme that conditions a payment on a verifiable signal resulting from the agent's behaviour. There is a third-party in charge of enforcing contracts (well functioning legal system).	The agency costs, defined as the loss of welfare resulting from the information rent of the agent.	In most sophisticated models, the organisation is formalized as an incentive system. In many models, it just appears as one of the contracting parties.	One could think of at least two forms. Strong form: Explanatory variables: the transaction under consideration (one task or several; degree of information asymmetry; uncertainty); the profile of transacting parties, and their attitude towards risk in particular. Dependent variable: the contract chosen by the parties. Weak form: Explanatory variable: the contractual scheme Dependent variable: some outcome measure (e.g. use of inputs, performance).	Has unbounded the exploration of incentive alignment problems in the co-ordination of economic agents. Has formalized and qualified many intuitions of 'old property rights economists' with respect to the firm. Has been applied to enlighten a great variety of situations, including the structure of organisations. Growing evidence showing that contracts influence behaviours (weak form of test).	Substantive rationality and complete contract are not representative of real life situations. It is the whole complex of institutions that matters; the focus on one contract limits external validity. Discrepancy between model proliferation and empirical validation.

Table 1: Comparison of different organisational economic theories

Sub-paradigm	**Research focus**	**Main hypothesis**	**Approach**	**Key assumptions**	**Main transaction cost of interest**	**View of the firm**	**Testing the theory**	**Performance of the program (+)**	**Performance of the program (-)**
Property rights theory, *Alchian; Cheung; Barzel; Allen*	Any issue related to property rights: their nature, the origins of various structurings and the impact of the latter on efficiency.	The fact that assets have many attributes and that agents have various strategies to gain control over them requires economists to study other mechanisms than just the price system. By setting incentives, institutions are substitute to physical strategies (e.g. direct observation, force) to enforce property rights. Both kinds of strategies must be studied in an integrative framework.	Mainly discursive, with very simple models.	Substantive rationality Assets have many attributes; these attributes are variable across units and alterable by economic agents; moreover, they are costly to measure. Uncertainty.	Transaction costs are seen as all the costs related to the enforcement and maintenance of property rights, they are not limited to exchange.	See above.	Explanatory variables: measurement costs (or factors affecting them). Dependent variable: contract arrangement.	Realistic and quite intuitive. Allen and Lueck have provided strong evidence on sharecropping contracts in the US.	The lack of a well-defined research question and of a common framework has been a limiting factor. A bit early to assess recent developments. Can probably be partly integrated in contract theory through multitasking models.
Transaction cost economics à la *North* 'Institutional environment branch of New Institutional Economics'	To understand the influence of institutions (legal systems, norms…) on the performance of an economy.	Institutions determine economic outcomes. Inefficient (not transaction cost minimizing) institutions may persist, as rulers devise property rights in their own interests.	Discursive. Comparative, a same economy across history or different economies at a same period of time.	Bounded rationality. Opportunism.	Extensive: but with a focus on those that relate to protecting rights and enforcing agreements.	Organisations are seen as the players of the game. Their internal co-ordination problems are not the focus of interest.	Explanatory variables: institutions. Dependent variable: economic growth.	Highly inspirational, as it opened a major research program; it offers a backdrop for more specific studies.	Many concepts are vague.

Table 1: Comparison of different organisational economic theories

Research program	**Research focus**	**Main hypothesis**	**Approach**	**Key assumptions**	**Main transaction costs of interest**	**View of the organisation**	**Testing the theory**	**Performance of the program (+)**	**Performance of the program (-)**
Comparative Institutional Analysis (Game theory à la *Greif, Aoki*)	To explain the nature, origin and implications of institutions and institutional changes. The interdependency within the matrix of institutions is a particular matter of focus.	An institution is the self-enforcing outcome of forces, such as strategic interactions, evolutionary process, and limits on cognition. Institutional dynamics are not necessarily an optimal response to the changing environment.	An interactive combination of induction from historical case studies and formalization through evolutionary or repeated classical game theory.	Substantive rationality.	Most studies focus on one particular transaction. Most of them are interactions between similar actors (e.g. merchants).	Originally, an organisation (e.g. merchant guild) is an equilibrium outcome emerging from parties' interaction. Then, it establishes itself as a new player that changes information available to players or payoffs associated with certain actions.	Is done on one particular historical episode, by identifying change of parameters that may explain the change of institution. Explanatory variables (for the analytical step): the different parameters of the underlying game (the payoffs, discount factor, risk preference, wealth and the number of players). Explanatory variables (for the empirical step): the cultural features, beliefs and social structures inherited from the past. Dependent variable: the institution of interest.	Highlights the importance of the institutional, historical, political and cultural environment. Alerts against simplistic prescriptive messages (of the cut/paste type). Very convenient to approach informal institutions, especially in settings where law enforcement does not prevail.	Too early to be assessed.

Table 1: Comparison of different organisational economic theories

2.2. THE APPROACH ADOPTED IN THIS THESIS

Towards an analytical framework

The multiplicity of research programs on institutional arrangements raises a challenge for this thesis: the very question of the theory to choose for our work.

One approach could be to opt for one school of thought, quite a standard approach in economics. While we do not deny the power of such an approach, especially in terms of theoretical cohesiveness, this is not the route taken here. Our analysis, shared by many, is that the various institutional theories are not redundant; they adopt different levels of analysis (Eggertsson 1996) and highlight different phenomena related to organisations (Barney & Hesterly 1999). Given our own policy drive, this plurality of theories is an asset. As Gortner et al. put it: "The larger the number and variety of conceptual tools that we have to work with, the more facets of the organisation problem we can see, and the better and more intelligent our choice of action can be" (Gortner, Nichols, & Ball 1997) (p 15). Among other things, it gives us a toolbox which expands our capacity to deal with reality.

The originality of this thesis is that we will not choose a specific theory: our main objective will be to build an *analytical framework*, which one can define as the analytical level that identifies the elements and relationships among these elements that one needs to consider for an analysis (Ostrom 2005).

The main reason for such a choice is that our prime goal in terms of health system thinking is relative modest: much more than proposing a new truth, our objective is to question the dominant beliefs, views and practices. Identifying variables that have been overlooked in the understanding of health care organisation performance and establishing conceptual links between them is already an endeavour susceptible to shake ideas and policies. The second reason for a limited ambition in terms of theoretical proposition or validation is that organisational economics is not yet a stabilized theoretical field (Ménard 1997a). The profusion of theoretical propositions is such that adopting one theory would mean to lose the potential analytical power of others. By trying to remain open to all the theories, we avail of different angles for identifying possible limits of current health system models. Having a framework already allows us to formulate hypotheses on the causes of the observable low performance of public health organisations and on possible remedies.

As our main concern is to be responsive (as scientists) to the realities and needs observable today in low-income countries, we believe that our framework should secure five key attributes. First, it should have *descriptive power*, i.e. the capacity to seize, accurately and unambiguously report and summarize the dominant traits of a public health system in a given low-income country. Second, it should be capable to welcome theories and models with strong *analytical power*, i.e. the capacity to put forward a sensible and coherent explanation to problems observed in this public health system. This is tantamount to establishing causal links between the variables portraying the public health system. Ideally, the links should move from a hypothetical status to an empirically tested one. Third, the framework should have some *instrumental power,* i.e. the capacity to identify feasible lines of actions to solve the studied problems. This implies that some of the explanatory variables are susceptible to action. The instrumental power – if you do A, you get X – is a key for effective prescription; yet, the prescription must also be relevant – getting X is good. Therefore, our framework will need some *normative power*. The minimal one is the capacity to identify what is not satisfactory in the performance of the

public health system' and the normative issues that any policy proposition conveys. Eventually, our framework should have some *argumentative power*, i.e. the capacity to convince scientists and policy makers, especially non-economists.

One must acknowledge that there are possible trade-offs among these five attributes. While descriptive power may highlight that institutional arrangements are embedded in a given context, analytical power may require simplification. Conversely, we know that formalised analytical models can be quite abstruse. In fact, the constraints imposed by reality will often meet the requests of policy makers or non-economist scientists active in the field. Indeed, a rather narrow focus on a few variables can be self-defeating at the stage of interactions with decision-makers and scientists trained in other paradigms (including some trained in management and organisational theories). In order to have some influence, economists who enter the public health arena have to choose for concepts also understandable and acceptable by outsiders. This requirement may set the research at the frontiers of several disciplines.[47]

In order to build our framework, we will refrain from reviewing what each organisational economic theory could bring with respect to each problem. Even if such a comparative exercise would be interesting, our approach will be to lean on a theory each time we need it to strengthen our argumentation. We will draw on the following sources. For the concept of institution, after the review of the propositions by North and by Aoki, we will adopt a definition very close to the second one. Our view on organisation is a slight adaptation of the nexus of contracts view. Our explanation of how institutions structure property rights is along the property rights tradition, and is inspired by Barzel in particular. Our study of the link between property rights and behaviours rests to a large extent on contract theory.

As mentioned in the introduction, the second part of our thesis will be made up of empirical studies. They do not really rest on a specific theory, but as much as possible, links will be established with our framework and the different theories. The main function of the empirical papers will be to show that institutional arrangements can be changed and that higher performance may be the outcome.

How our research program distinguishes itself from other works in organisational economics

Readers familiar with institutional and organisational economics may be a bit surprised by our approach. At this point of development, it is probably useful to highlight and justify some differences between this research program and more traditional studies in institutional/organisational economics.

Firstly, our objects of research will mainly be nonprofit organisations, be they public or private.[48] This is in marked contrast with the bulk of theoretical and empirical work developed so far in organisational economics, which has focused on for-profit

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[47] Again, this is not a heresy in the economics of institutions. The definition proposed on the International Society for New Institutional Economics' website (www.isnie.org) is quite enlightening on the importance of multidisciplinarity to study institutions. "The New Institutional Economics (NIE) is an interdisciplinary enterprise combining economics, law, organization theory, political science, sociology and anthropology to understand the institutions of social, political and commercial life. It borrows liberally from various social-science disciplines, but its primary language is economics. Its goal is to explain what institutions are, how they arise, what purposes they serve, how they change and how - if at all – they should be reformed."

[48] Yet, as shown by the case of Chinese hospitals, traditional frontiers can be quite blurred (Meessen & Bloom 2007).

organisations.[49] In our attempt of stretching the intuitions and concepts of institutional economics beyond the case of for-profit organisations, we may lose or at least undermine some of the positive power of the theory. We think for example of the evolutionary hypothesis first put forward by Alchian (Alchian 1950) and later adopted by several authors under different forms (e.g. Williamson, Fama and Jensen, Hansmann, Milgrom and Roberts). According to this view, in a competitive world, only efficient forms of organisation (i.e. institutional arrangements minimising transaction costs) survive: other forms are unprofitable and either the entrepreneurs discard them ex ante (by conscious design and imitation) or they adopt them and go bankrupt ex post. It is doubtful that such a 'survivorship test' or any of its variant applies also to monopolistic governments and their agencies. As a matter of fact, there are non-developmental States that survive, and even thrive. Inefficient arrangements may prevail for a while, given the very nature of services entrusted to State agencies and the many imperfections of the political system. In fact, the prime motive for this thesis is our perception that many public health systems rest on inefficient arrangements.

Still, we believe that some key insights brought by institutional economic theories can be extended to public or private nonprofit organisations (the dominant form taken by public health care organisations in low-income countries). As put by Williamson, "the NIE is informative and should be included as part of the reform calculus" (Williamson 2000, p. 610). Some normative messages are quite obvious (e.g., government should choose institutional arrangements minimizing transaction costs). In fact, the health sector is probably in quite the same situation as the one prevailing in the past in the sector of utilities and networks (electricity, water, railway…): one can hope that organisation economics will be as much useful for developing new normative positions, especially in terms of regulation (Boerner & Macher 2002).

Another difference between the existing body of knowledge in organisational economics and our own work stems from the very different maturity of the respective research programs. Thanks to theoretical refinements and an emerging body of empirical evidence, organisational economic theories have established strongholds in the scientific landscape. In industrial organisation economics for example, vertical integration cannot be discussed anymore without considering Williamson or Hart's works. Comparatively, the research program that we join is still in its infancy.[50] A possible explanation for this status is the very pragmatic nature of public health policy. The lack of a theory has not simplified the work of experts and scholars willing to comment on and criticize the dominant view. Much more than a 'theory', we are today facing 'beliefs', 'policy views', 'practices' and 'explanations' (for the low performance of the public health system). Our work is shaped by this immature status of the debate: as already mentioned, much more than proving our own theory, we will draw from organisational economics arguments to challenge some dominant views. Many shadow areas will certainly remain.

A last aspect deserving a comment is the difficult relationship between organisational economics and reality. With this respect, it is unclear how we fare comparatively with the mass of economic studies dealing with organisations.

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[49] One may have to qualify a bit this assessment. On the theoretical side, contract theory has proved to be much more versatile than the other strands. In our chapter 6, we review this literature on the incentives in the public and private non-profit sector. On the applied side, there is a growing community of researchers trying to relate realities of government and nonprofit organisations to organisational economics theories.

[50] We mean 'from a scientific theory perspective'. The questions that we raise and some of the policies that we propose are advocated also by several actors in the international health arena, including the World Health Organization and the World Bank. But the theoretical foundations are often hasty.

As we have seen throughout our review in section 2.1., the relationship between organisational economics and reality has been problematic for a while. Whereas it is not incorrect to say that induction has been crucial in the development of organisation economics (Ménard 1997), theories were in general only inspired by reality. For instance, for around twenty years, contract theory has mainly done casual empiricism, i.e. reference to reality mainly through anecdotes, illustrations and examples. The point was often just to show that the model had some illuminating power on organisational reality; real testing was not the practice.

Till very recently, empirical validation of most theories was scarce or of insufficient quality; even the transaction costs economics has less backing than often pretended by its proponents (Acheson 2000;Chiappori & Salanié 2003). It was superior to others indeed (Masten 1996), but in the kingdom of the blind, the one-eyed man is king. A major constraint for all these theories is that only bits of them are amenable to traditional testing; this is largely due to the fact that many key concepts are difficult to measure (e.g. transaction costs, quasi-rents, information asymmetry, uncertainty, risk aversion).

Still, early efforts have helped to clarify the possible methodological toolbox. Unsurprisingly, econometrics applied to existing databases is a key route (Masten & Saussier 2000). Yet, interestingly enough, new institutional economics has also re-legitimized qualitative methods such as case studies (Alston 1996;Ménard 2001;Williamson 1976). This is not a surprise (at least for people accustomed to struggling with the study of health care organisations): there is a mismatch between the complexity of institutional arrangements and what is feasible with quantitative methods.[51] Case studies are therefore more and more seen as necessary complements to econometric analysis (Masten & Saussier 2000).

Our own relation to reality will reflect these difficulties experienced by more established organisational economists. We will also use case studies. The rule, as put by Ménard, is that the case should be relevant to the exploration of the specific theoretical question (Ménard 2001). Our empirical studies do not tap recent developments in terms of experimental research design. Besides complexity and limits of these techniques, the truth is that our thesis and the experiments that we report had started before the recent surge of empirical interest for institutional arrangements in the health sector.

A summary

In this chapter, we have reviewed the main strands of organisational economics; identified their major traits and problem of focus. We see this multiplicity of theoretical propositions as an asset. The main goal that we pursue through this dissertation is to challenge the dominant view on the organisation of public health systems in low-income countries. This does not require opting for one specific theory. Building an analytical framework can already allow to identify variables that have been overlooked so far in the analysis of the possible causes of the low performance of public health sector.

[51] This already indicates that randomised evaluations, a very popular approach today in economics, will quickly reach its limits in the study of complex institutional arrangements. At least, their promoters will have to acknowledge their very limited external validity (Ravallion 2009).

CHAPTER 3: INSTITUTIONS

"One of the most difficult problems to overcome in the study of institutions is how to identify and measure them".

Elinor Ostrom (2005)

The main assumption of this thesis is that institutions are key determinants of the performance of any organisation. This thesis is inspired by the hope that a better understanding of this relationship would contribute to the design of better public health systems in low-income countries.

Building this better understanding is a more complicated task than one may think at first sight. Indeed, the four elements in our analysis – the object of study (the organisation), the explanatory variable (the institutions), the explained variable (performance of the organisation) and the causal relationship – all pose conceptual and empirical challenges.

Our next four chapters will deal with rather general issues, whose relevance goes much beyond health care organisations. In chapters 3 and 4, we clarify what we respectively understand by institutions and organisations. Contrary to common language, which uses institution and organisation as close synonyms, most economists make a distinction. However, while both concepts are in vogue today, including in the health sector, many scholars using them elude the step of giving them a clear content. Between broad and vague generalities in essays and sophisticated formalisation in microeconomic models, there is some kind of conceptual no-man's land that we want to address. For both concepts, related empirical challenges also have to be identified.

The structure of this chapter is the following. In a first section, we introduce the concept of institution. We review two economic approaches to this reality. We argue that the two views derive from two complementary research programs. In a second section, we situate our own research program and adopt our own definition of an institution. We present an original view on how an existing institution can be documented. Our main contention is that most institutions can be observed on four levels. We derive a few consequences of this 'four-state view' for empirical work.

3.1. INSTITUTION AS A CONCEPT

What is an institution? A review of two approaches

Several definitions of institution have been proposed by social scientists, be it economists, political scientists or sociologists.[52] Our objective here is not to thoroughly review this diversity of traditions or practices. There is already a multiplicity of propositions by economists; these propositions are not always easy to reconcile. While there is definitely a need for some minimal concept clarification for our own studies, it is

[52] For a review of the institution concept by a sociologist, see (Scott 2001). For a philosophical perspective, especially on ontological aspects of institutional facts, see (Searle 2005). For an analytical review of various definitions along a 'grammar', see (Crawford & Ostrom 1995).

wise not to be overly ambitious and tackle too much. Accordingly, we will stay away from the work done by 'old institutionalist' economists and their contemporary followers.[53] Our approach here will be to take stock of two different schools of thought presented in chapter 2 – which we will identify, for the sake of convenience, with the scholars North and Aoki – and assess how the latter can contribute to our theoretical and empirical analysis. An interesting spill-over effect of this undertaking will be the identification of two research programs that are complementary.

There are probably various ways to classify the different economic theories tackling the institution phenomenon. Aoki has argued that game theory allows two different ways to view an institution: the exogenous view, which, along Hurwicz, formalises the institution as a game-form[54] and the endogenous view, which formalises the institution as an equilibrium outcome of the game (Aoki 2001;Aoki 2007;Hurwicz 1996). This distinction is certainly not an established divide between two traditions of thoughts; the standard practice is much more vague and implicit (e.g. North 1990). Concept accuracy matters. Aoki's distinction is a useful way to come to a clear definition of what an institution is. We contend that it also helps to organise all scientific efforts around institutions.

The exogenous view: North

An illustration of the first track is the definition popularised by North, who considers institutions as the rules of the game of a society. According to him, "institutions are the humanly devised constraints that structure human interactions. They are made up of formal constraints (rules, laws, constitutions), informal constraints (norms of behavior, conventions, and self-imposed codes of conduct), and their enforcement characteristics. Together they define the incentive structure of societies and specifically economies" (North 1996, page 344).

This definition – certainly the most quoted and influential one so far – has several characteristics. First, it is quite comprehensive. It allows including any contractual or legal phenomena (e.g. a remuneration contract, a constitution, the legislation regulating a market), but also rules and customs implicitly agreed on by the involved parties. Second, it is a quite overarching definition: while developed for the study of macro aspects of institutional changes upon economies (North 1990), it looks compatible, at first sight at least, with research programs focusing on choices at micro level – for setting the institutional environment, the so-called rules of the game (Williamson 1996; Williamson 2000) or for representing a contractual arrangement. Third, the analytical logic is pretty straightforward: institutions are presented as observable variables that eventually determine some observable economic outcomes (e.g. GDP growth; basically though, the outcome could be anything stemming from human interactions); institutions have an impact through the incentive structure (expected pay-offs), which itself determines actors' behaviours (Figure 1). The empirical studies capable to falsify/confirm the hypothesis follow naturally: the researcher has to prove that the change of a given outcome is due to a change in some institutions.

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[53] For a presentation of institutions from an 'old institutionalist' perspective, see for example (Parto 2005).
[54] The terminology 'game-form' was introduced by Gibbard (Gibbard 1973). It allows to represent a game before players' individual utilities are attached to consequences of their choice in their respective strategy domains. It therefore captures only the objectively identifiable parameters of the game.

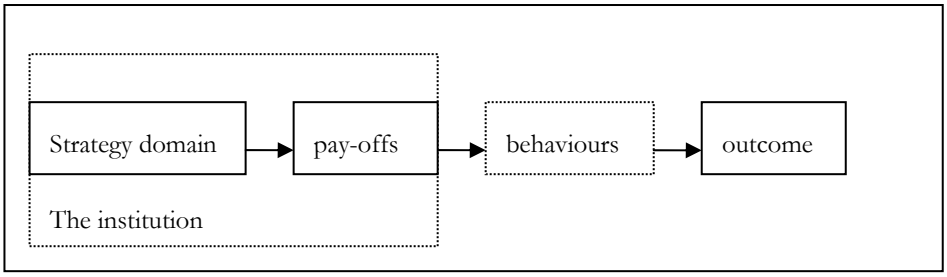

Figure 1: institutions as the rules of the game (North 1990)

This analytical logic gives the approach its whole appeal: it sets the door wide open for prescriptive messages. To the extent that some institutions are subject to change, one has a route to affect the outcome of human interactions. The quest for better institutions, i.e. institutions that can lead to a better outcome than the prevailing ones, is then open. A remaining constraint is obviously the aptitude of various institutions to be changed. As stressed by several authors, this aptitude is not equally shared (North 1990;Roland 2004;Williamson 2000); some may be changed overnight (e.g. a law), while others are much more 'slow-moving' (e.g. a custom); but the general message of the approach is optimistic. This quality certainly explains part of the success of the view, for example among scholars and experts dealing with policies in transitional countries.

Yet, North's definition has also a certain amount of vagueness. Two major aspects of ambiguity deserve our discussion.

First, it is quite silent on where one should actually search in order to observe and measure an institution: in the social environment/structure/culture (what is that?), on paper forms (e.g. as is possible with the constitution or laws), in people's minds (their beliefs, expectations) or in regular patterns in their actual behaviours (including habits)? When reading "North 1990", you get the impression that institutions are a bit everywhere.[55] We contend that any rigorous analytical work requires some consistency in measurement – i.e. the same and a unique space/ level of observation across institutions – or at least a clear delineation of the different levels of observations, and the respective information that they are able to bring. This position is of course even more compelling for empirical work. Our criticism is not aimed at North in particular. This lack of clarity in terms of level of observation and metrics is in fact a quite well entrenched practice, both in old and new institutional economics. It obviously stems from the multifaceted character of the institutional phenomenon[56] (a multifaceted character, which itself explains the great variety of definitions already put forward for the institutional phenomenon). Yet, we suspect that this confusion may also reflect some imbalance in the various research programs, with insufficient effort made to translate the concept into empirical research.

Second, the exogenous approach leaves a major theoretical question unanswered: which mechanism enforces institutions? The formula "enforcement characteristics" used

[55] In later work, North has taken the clarification of the different facets of the institutional phenomenon one step further by an exploration of the institution's contacts with concepts such as shared mental models and ideologies (Denzau & North 1994). This obviously raises complex questions bordering on psychology, cognitive sciences and behavioural economics, but does not bring any answer for empirical studies.
[56] Sociologists and contemporary 'old institutionalists' are particularly aware of this multidimensional aspect (see for example, Scott 2001 or Parto 2005).

by North is very vague. One may see institutions as "enforced by particular organisations, such as the court, or social sanctions, but then the question can be raised as to how the enforcer(s) is motivated to enforce the specified rules, which leads to the infinite regression of who enforces the enforcer(s), who enforces the latter, ad infinitum" (Aoki 2007, p. 5). The easiest option for researchers subscribing to the exogenous view of institutions is to identify this as not the issue of focus. This is, for example, the approach adopted in the standard principal-agent framework, with respect to the principal.[57] The principal's commitment is made credible by assuming that there is a benevolent and competent institutional framework (e.g., a court) able to enforce the contract upon him (Brousseau & Glachant 2002). The enforcement issue is then posed as another scientific problem, for example as the main assignment for political economics.

The endogenous view: Aoki

The endogenous view largely deals with this conceptual weakness, but offers also possible answers for the empirical question. While the approach to institutions-as-equilibria has old roots (e.g. Smith, Durkheim, Menger, Hayek), it is undeniable that it has greatly gained from the analytical power of game theory.[58] Along this perspective, institutions are seen not as the external description of the game-form before its play, but as the very outcome of a repeated game (i.e. an equilibrium). Aoki proposes for example to define an institution as "self-sustaining, salient patterns of social interactions, as represented by meaningful rules that every agent knows and are incorporated as agents' shared beliefs about how the game is played and to be played" (Aoki 2007, p.6). Similar definitions have been proposed by Durkheim or Schotter, among others (Greif & Laitin 2004;Schotter 1981).

The main strength of this approach is that it solves the problem of enforcement, at least for all self-enforced institutions (e.g. norms); to a large extent, the institutional concept stands by itself.[59]

In terms of the observation of the institutions, it is also much clearer. It offers its two components as levels for observation: the shared beliefs and the regularities in players' behaviours (in repeated game theory: the fact that most players in the game systematically pick the same strategy in their respective strategy domain).

A constraint with shared beliefs is that they are invisible (Ostrom 2005). However, several authors have stressed that in order to be known to everybody, such relevant features of the state of games must have somewhat a collective representation, which itself requires a linguistic or symbolic expression (Crawford & Ostrom 1995; Searle 2005; Aoki 2007); this 'codifiability' is particularly important to allow social transmission but also enforcement for those institutions that have a normative content (Hodgson 2006). From an empirical perspective, this establishes the institution as an observer-dependent reality which can be written down, talked about and documented through reviews or

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[57] As a reminder, by construction, a principal-agent model assesses the conditions that make the agent spontaneously comply with the contract offered by her principal. Enforcement is therefore not an issue at this level.

[58] Conceptualising institutions as the way a game is played was first proposed by Andrew Schotter (Schotter 1981). Analyses through game theory were later developed by authors like Greif, Weingast or Aoki. Axelrod explored the potential of evolutionary game theory (Axelrod 1986).

[59] For institutions benefiting from a back up by another institution (e.g. contract benefiting from the legal environment and court enforcement), the connectedness can be modelled through linked games or institutional complementarities (Aoki 2001; Aoki 2007). In fact, as was rightly noticed by several authors but best developed by Searle, there remains a need for at least one primary institution: the language (Searle 2005).

interviews. The researcher can for example interview members of a community to know their beliefs on the assistance they expect from other community members in case of a health problem (e.g. the need to bring their wife in labour to the hospital) and appreciate the extent to which these beliefs are shared.

The regularities in players' behaviours are observable phenomena; this ensures that we are not stuck with the subjectivity of the informants only. Furthermore, one can establish an institution as true or false through actual experience, as the 'regularities in behaviours' facet offers an objective reality which can be tested. One can for example 'experience' the institution of politeness, by being very rude. The empirical researchers can observe whether community members actually give some help to evacuate women in labour.

This approach to institutions alerts us also against the mistake of taking the factual existence of a rule in a book (e.g. a law in the Gazette, an article in the hospital internal regulation) as proof of its existence as an institution. If a law is not credible (because of its unenforceability) and therefore not respected, the institution may be the 'illegal' practice that the law aims to deter/sanction (Aoki 2001, Ostrom 2005).

It is important to note that the institutions-as-equilibria view leads to a different analytical approach (see Figure 2).[60] In terms of empirical studies, the challenge is to prove that a change in an institution has been caused by a change in some parameters.

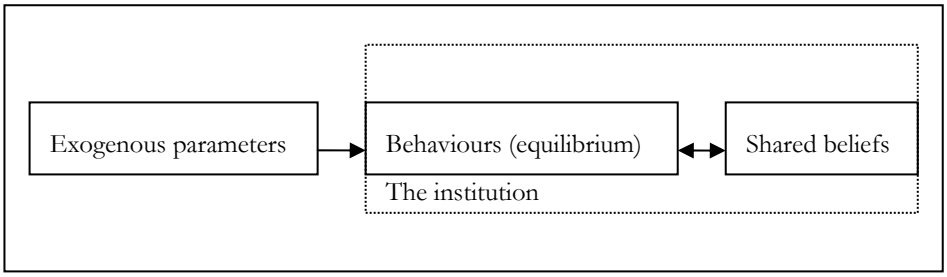

Figure 2: institutions as equilibria

As far as policy prescription is concerned, the 'institutions as equilibria' approach sheds light on the possible difficulties to change institutions: if conditions of enforcement are not met, the new institution, regardless of the good intentions behind it, will not survive. As far as prescriptions are concerned, this obviously offers less optimistic prospects than the exogenous view. For Aoki, blueprints are excluded by definition, as history, social context and balance of power all matter. There may be institutions better than others for achieving a given outcome, but bringing about this particular institutional equilibrium is not that easy and certainly not straightforward for external actors. Development aid sceptics surely fall under this pessimistic tradition.

Two complementary research programs

In a recent book, Elinor Ostrom has made general propositions for the economic analysis of institutions. She makes a distinction between *frameworks*, *theories* and *models* (Ostrom 2005b). The framework is the analytical level "that helps to identify the

[60] It is crucial to note that we are not talking of the same behaviours in figures 1 and 2. In figure 1, it corresponds to what is called 'effort' in principal-agent models. In figure 2, it refers to compliance with the terms of the institutions (e.g. in the sharecropping set-up, the fact that at the time of harvest, the tenant gives his share of the output to the landlord).

elements (and relationships among these elements) that one needs to consider for institutional analysis" (Ostrom 2005b, p.28). Theories are the analytical step that enables "the analyst to specify which components of a framework are relevant for certain kinds of questions and to make broad working assumptions about these elements. Thus, theories focus on parts of a framework and make specific assumptions that are necessary for an analyst to diagnose a phenomenon, explain its processes, and predict outcomes"(idem, p. 28) "Models are the last analytical level; their development and use "make precise assumptions about a limited set of parameters and variables" (ibidem, p.28).

If we adopt her classification, we can see that all the sub-paradigms reviewed in our previous chapter fit in a common framework, as they take institutional arrangements as their core focus. What we call sub-paradigms are what Ostrom calls theories.

In fact, another way to organise the wealth of economic work on institutions is to acknowledge that there are mainly two complementary *research programs* as depicted in our figures 1 and 2.

The endogenous view belongs to a program tackling a quite important question: what establishes an institution? Why do transacting parties adopt and perpetuate an institutional arrangement, and why do they decide to change it? The exogenous view is attached to a program stressing the general function of institutions: to structure human interactions. It addresses the next question: how does an institution determine a social outcome? If we formulate these two programs in terms of the study of institutional change (Alston 1996), the complementary nature is obvious: the first one studies the causes of institutional changes (e.g. why has the health district strategy been adopted by many governments and bilateral aid agencies), the second one examines the effects of institutional change (e.g. what has been the impact of the health district strategy on the population's health).

Our contention is that in fact, all the sub-paradigms reviewed in the previous chapter belong to one of these two broad research programs (or to both). The bias of economists for theories has just obscured the view; once empirical questions are the starting point, there is no ambiguity anymore: either the institution is among the explanatory variables or it is the explained one.

Explaining the existence of firms (e.g. Coase, Hart), the choice for a governance arrangement (Williamson), the attribution of residual rights to a patron (Hansmann), the adoption of a specific hierarchical structure (Rajan & Zingales), the adoption of a contract (contract theory) or of an institution more generally (Aoki) clearly belongs to the endogenous research program. Strands of research belonging to the exogenous research program are for example the work done by North, but also contract theory models limiting themselves to comparative statics analysis. The recognition of these two main strands does not of course dismiss the originality of each sub-paradigm. Originality prevails in terms of research questions, variables of focus, theories and approach more generally.[61]

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[61] Let us give two examples. If we compare Aoki-Greif with Williamson, we can see that both sub-paradigms are highly inductive and case-specific. Yet, focus, approaches and explanatory variables differ. Aoki-Greif's route mainly consists in identifying a remarkable change in the institutional solutions adopted by a homogenous group of actors for a given transaction and explaining this change of equilibrium by a significant change in the value of some parameters or so-called quasi-parameters – e.g. relative prices of resources, technology, balance of power (Greif 1998;Greif & Laitin 2004). Institutional change is central and is put in a historical perspective. Williamson and transaction cost economists take another route. Their

In Table 2, we give an overview of these two families of research programs on institutions.

Characteristics	Endogenous view	Exogenous view
Analytical focus	Factor supporting the emergence, the adoption and the sustainability of an institutional arrangement.	Impact of an institutional arrangement on behaviours and economic outcomes.
Assignment to the theory / model	Assert some causal links between external parameters and the institution.	Assert some causal links between the institution and a behaviour or an economic outcome.
Individual choice	Contribute to the institutional equilibrium.	Constrained by the exogenous institution.
Examples of theories	- The theories of the firm. - Contract theory (when an optimal contract is found).	- North's research program. - Contract theory (when only comparative statics is carried out).
Example of empirical questions in the literature	Why sharecropping contracts are adopted for some crops and not for others?	What is the impact of a change in the contract arrangement on the the farmer's output?
Example of empirical questions in our own field	In Cambodia, why do donors prefer to entrust the management of funds earmarked for the poor to local NGOs?	In Rwanda, what has been the impact of performance-based financing on the work effort by health centre teams?

Table 2: two main research programs on institutions

We do not contend that all economic works on institutions fall in these two categories. Ostrom's "Institutional Analysis and Development Framework" (see Figure 3) shows that several causal links can be studied, including the feedback loops (the dotted arrows).[62] This is for instance the issue addressed by political economists, when they investigate in which sequence institutions should be changed (Roland 2000). On the empirical side, not all studies deal with causation. This is for instance the case of studies trying to check whether some key assumptions of organisational economics (e.g. asymmetry of information) hold in reality (Chiappori & Salanié 2003).

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standard approach is to focus on a transaction between firms of the same industry and their suppliers of a key input (Joskow 1985). The issue is to explain the institutional arrangement adopted for this transaction (under the assumption that economic agents have to minimise their transaction costs to ensure their survival). The explanation is searched at the level of the characteristics of the transaction. Empirically, the approach consists in linking, in a sample of contemporary companies in the same industry, the variation in terms of characteristics with variations in terms of institutional arrangements.

[62] Her model points also at possible empirical difficulties of institutional analysis. The feedback loop, for example, introduces endogeneity, which raises considerably the challenge for empirical work (i.e. the need for instrument variables, panel data).

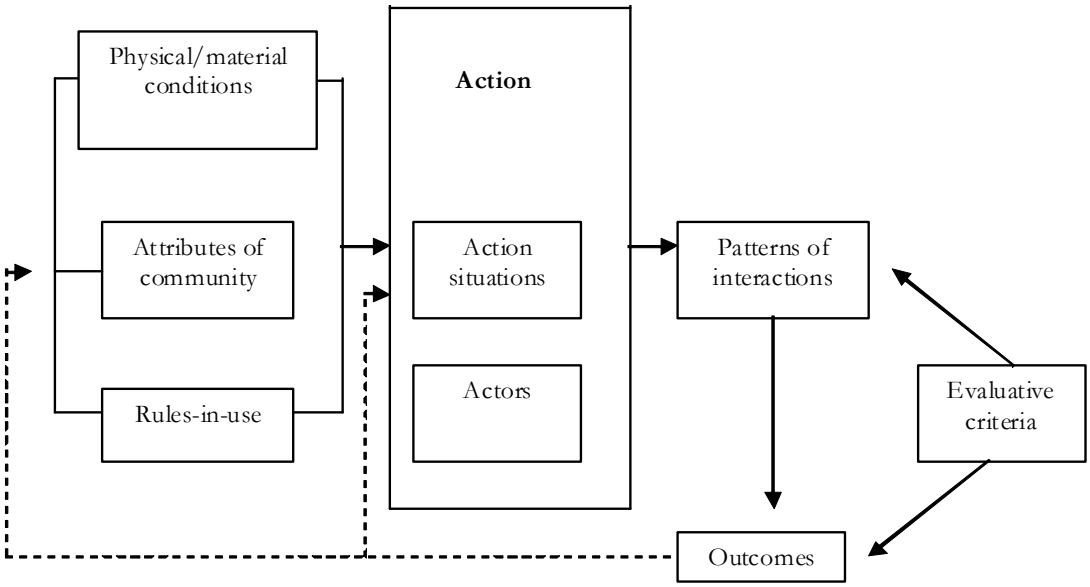

Figure 3: Ostrom's framework for institutional analysis (source: Ostrom 2005)

Eventually, let us observe that the complementary nature of the two programs may also apply in terms of settings of application. The exogenous program – for example, contract theory – fits nicely settings where enforcement is not a problem. This is usually the case in high-income countries, where third-party enforcement is impartial and trustworthy. The most interesting questions may then be related to possible impacts on behaviours of changes in contract parameters. In some situations, third-party enforcement is not available (e.g. absence of a powerful judicial system) (Dixit 2004). Still, thanks to decentralised enforcement, there are probably institutional mechanisms in place. The most important question then may be to understand what maintains them. Game theory is then useful. No surprise, development economists are extensive users of this approach.

3.2. OUR APPROACH TO INSTITUTIONS

Some difficulties inherent to the reality of institutions

We are able now to better situate our own research program. When we announce that we will document how institutions influence performance of health care organisation or that we will scrutinize whether the health district strategy (as implemented in many countries) could not partly explain the observed low performance, we mainly belong to the exogenous branch of institutional analysis: the effect of institutions on behaviours. In this thesis, the causes and origins of institutional changes (or lack of change) will be quite neglected.[63] We adopt a *deus ex machina* view on the health system and focus on issues related to the design of better performing institutional arrangements.

[63] At least three dynamics of institutional changes matter for health care organisations: endogenous change at local level, exogenous change induced by the health policy makers and endogenous change at system level in reaction to a change from the environment. The first case does not apply much today in most low-income countries: public health systems are fairly rigid and health facility managers have very limited control over the institutional arrangements. The second case looks more in line with our thesis. Yet, our thesis is not a 'health political economic' one. We acknowledge that not documenting the relationships

This orientation does not mean of course that our research must necessarily suffer from the conceptual and empirical vagueness that has characterised some important work within the exogenous program.

In order to remove any ambiguity, we therefore propose clarification at three levels: (1) the definition of an institution that we will adopt for our thesis; (2) the level(s) on which one can observe institutions; and (3) the information sources to describe an institution.

(1) Definition

An asset of Aoki's definition is the stress it puts on the very nature of an institution. A nearly equivalent definition, but perhaps a bit more general, could be the following one: an institution is a way to interact which

(1) applies to a specific social situation / coordination problem;
(2) is not exclusively determined by common preferences, physical, biological or technological constraints;
(3) is expected by most of the individuals aware of the interaction;
(4) is respected by most individuals actually interacting.

This definition allows us to give answers to the two main conceptual questions: what does make a social phenomenon an institution and how can one distinguish an institution from other institutions?

An institution is a way to interact, i.e. a pattern for social behaviour. The pattern characteristic means that to some extent, the institution constrains the individual in his choice of behaviours. This constraining nature stems from the interactive character of the institution: an institution is a shared pattern. It is never the decision/product of a single person, at least two parties are involved.

One needs some behavioural regularity to have an institution, but it is not a sufficient condition.[64] An individual habit (e.g. brushing one's teeth before sleep) is not an institution. It becomes an institution if the regularity has been codified in some way and is expected and respected by others (e.g. every night, the father, who is a baker, goes to bed at 10 p.m. sharp; every household member knows this practice and respects it by avoiding noise or disturbance).[65]

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between the political system (to be extended to external actors in donor dependent countries) and the public health system conceals some major questions about the lack of change one can observe in many countries (despite the appalling performance of the health system), about recent trends (e.g. the adoption of the budget support approach by key donors) or about the implementation of a reform (e.g. big bang versus incremental change). As far as reforms are concerned, we will focus our attention in the second part of this thesis on reforms that actually took place and overcame the barrier of political acceptance and implementation. The third case lies somewhere in between the two others. It involves the case of public health care organisations that are confronted with some dramatic changes in their environment and then benefit from some transfer of rights in order to develop the most suitable response. This situation corresponds for example to the case of transitional countries. We have quite extensively reported on the case of the Chinese rural health sector in a paper not included in this thesis (Meessen and Bloom 2007).

[64] Note that the frequency of the behavioural regularity depends on the occurrence of the problem to be coordinated. This occurrence may be rare.

[65] This example allows us to dispel the possible suspicion that our definition is a tautological one (a way to interact that structures human interactions). For the children, the institution of 'we do not make noise after 10 pm' is structuring as it closes some options (the son does not play amplified electric guitar), but creates also others (the daughter appreciates the silence that is provided for reading). We come back on this in our chapter 5.

Not all shared patterns of behaviours are institutions. Regularities that are determined exclusively by common preferences or exposure to common physical or technological constraints are not institutions.[66] The combined idea that the way to interact is not exclusively determined by preferences and physical or technological constraints and is respected by individuals introduces the idea that there is some free choice (consciously or not) for the transacting parties. The fact that some people do not comply with the institution reinforces this idea of free choice. Note that the exclusion of preferential, physical and technological origins of the shared pattern leaves open the possibility that the institution is determined by other institutions (or rests on them).

The next question is how one can distinguish an institution from another one. As a general rule, there are two ways for an institution to distinguish itself as a specific reality: (1) it applies to a specific coordination problem / transaction not addressed by other institutions; (2) it applies to a coordination problem addressed by some other institutions as well, but brings another outcome (e.g. the difference between the traffic light and the stop sign). Having said this, we shall see later in this thesis, that the focus should be put much less on the institutions per se than on their structuring impact on interactions. There are two main reasons for such a focus: (1) in many situations, several institutions overlap or are intertwined; disentangling the exact contribution of each institution is very difficult; (2) more fundamentally the fact that institutions are instruments, not goals per se often limits the interest to focus on a specific institution.

At this stage, let us observe two things. First, our definition confirms the possible relevance of economics for the study of institutions. Component (4) of the definition requires indeed a behavioural theory; no doubt, assuming that human beings behave like the *homo oeconomicus* is a serious candidate for explaining compliance.[67] Furthermore, the fact that institutions are co-produced creates collective action problems. Second, our definition already gives some interesting indications on what should be reported in the documentation of an institution. There is primarily a coordination problem between some individuals (e.g. exchanging ideas). This sets a possibly identifiable group on which an interactive behavioural regularity can be spotted (e.g. speaking French). The institutional character of the regularity has to be ascertained (e.g. French language has grammatical rules that are followed and expected). One can also delineate the interaction of appliance and the exact resonance of the institution in the group of reference (after having situated it in its human and temporal context, as pay-offs are not constant across situations and time) (e.g. the same French social scientist may use English during a scientific conference and slang when he meets some suburb teenagers). Yet, we need more precise direction for own empirical work.

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[66] Of course there can be several persons having the same individual behavioural regularity; this does not make for an institution. This can be due to common physical constraints (e.g. human beings have to eat if they want to survive), technological constraints (e.g. people put fuel in their car) or common preferences (e.g. an international group of researchers go to the restaurant, all the Indian scientists choose spicy meals). Most of the time, the regularity will be the outcome of several determinants. Delimiting the exact institutional part of it can be difficult. Furthermore, frontiers are sometimes fuzzy. Fashion is a good illustration. The fact that two persons have the same preferences with respect to clothes is not an institution. Yet, we communicate, i.e. interact, through our clothes. Enforcement can be very decentralised (every day life), more communitarian (e.g. a dress code within a teenage group) or even centralised (e.g. military uniform). Furthermore, preferences are not definitely given; demonstrating an aptitude for changing them (e.g. being a 'trendsetter') is a possible strategy of interaction.

[67] Note that component (3) implies that interacting agents have also some kind of theory to formulate their expectations.

(2) The levels of observation: the four-state view

Now that these conceptual clarifications are made, we can move to the second question: on which level of observation should one conduct such descriptive work? As highlighted in our literature review, many authors have remained quite elusive on the exact level of observation of an institutional phenomenon. This ambiguity must be dispelled if one wants to undertake some applied analyses.

For our purpose, we propose to distinguish four levels at which information on an institution can be collected. On each level (or space), one can observe a specific *state* of the institution.

The first two states are not always present. The *moral state* is the status of an institution at the level of moral values and aspirations among individuals. For example, I value and respect others' physical integrity. The *formal state* is the status of an institution at the level of explicit intentions of some agents; it has been formulated so that it is known by at least one other person. It is for example the law as it has been voted by a parliament, the contract as it has been agreed by parties, the new rule as it has been written by the director. The *actual state* corresponds to the first facet of Aoki's definition: it is the institution at the level of regularities in behaviours or practices. It is the law as it manifests itself in complying behaviours, the contract as it is respected by parties. The *expected state* corresponds somewhat to the second facet of Aoki's definition: it is the status of an institution at the level of shared expectations. The expected state is the law, the rule, the contract the way the concerned parties expect it to be practiced. Shared beliefs are key to the enforcement of any institution. Only if beliefs are shared can there be credibility of rewards (in case of compliance) and sanctions (in case of infringement).

As previously defined, it is the combination of both the expected and the actual states that sets an institution as a reality. Table 3 presents examples of the four states for six institutions.

Clearing up some misunderstandings

This four-state view of institutions is mainly meant for structuring our empirical work. The view will therefore be validated through the demonstration of its analytical power over our problem of study. However, we believe that by distinguishing the different facets of an institution, the view has the capacity to clear up some persisting misunderstandings in the literature. As we shall see, clarity mainly comes from revealing relationships between the four different states (instead of the practice of mixing up dimensions into a single concept).

Several authors have for example developed analyses based on a distinction between formal and informal institutions (Helmke & Levitsky 2004;North 1990;Pejovich 1999), with enforcement characteristics as the distinctive character.[68] Like Hodgson, we believe that such categories and approaches are difficult to defend (Hodgson 2006). As already argued, formality does not warrant actuality of an institution. "If laws or declarations are neither customary nor embodied in individual dispositions, then – "formal" or not – they have insignificant effects. They are mere declarations or proclamations, rather than

[68] For example, North sees formal institutions as those that "are enforced by courts and things like that. Informal norms are enforced usually by your peers or others who will impose costs on you if you do live up to them" (Hodgson 2006, p. 20-21). Helmke and Levitsky extend a bit the formal domain to include rules and procedures created, communicated and enforced by organisations such as corporations, political parties and interest groups, but they also stress the importance of the officially sanctioned channels (Helmke and Levitsky 2004).

effective social rules" (Hodgson 2006, p.18). Everyone would agree also that the lack of formality does not prevent the actuality of an institution. There is a consensus that norms of behaviours (cf. our examples #5-6 in Table 3) are institutions, despite the fact that they are deprived from an explicit, written or oral, agreement between parties.

A better way to distinguish institutions goes like this: there are institutions with a formal state (our examples #1-4) and institutions without such a state (example #5-6). It is wrong to see enforcement mechanisms as exclusive: several mechanisms can play a role at the same time. If I do not steal the wallets of my colleagues, this honest behaviour is not mainly due to fear of legal punishment, but also and perhaps more importantly because of my personal values, my respect for social norms and the willingness to maintain harmonious and trustful relationships, perhaps with an eye on all the future private benefits that follow from this harmonious interaction. The issue is henceforth not to check how 'formal' and 'informal institutions' interact (Helmke and Levitsky 2004; Pejovich 1999), but whether and how the various forces contributing to enforcement play a consistent role or not with respect to the construction and maintenance of some given behaviours. A lot rests in fact on the extent to which the four different states are consistent, i.e. pull in the same direction. It is true that interactions with other institutions matter as well, but this issue of interplay is relevant with any other institution, whether the latter has a formal state or not.

The formal and moral states as back up

The fact that having a formal state is neither a sufficient nor a necessary condition for the existence of an institution raises the question of the relevance of the 'formal state' concept. We would suggest that while the formal state is not explicitly part of the conceptual definition of an institution (see our definition above), it is not excluded from this definition. Indeed, the idea of free choice embodied in the concept of institution is quite open: it can include the case of individuals having decided themselves the content and nature of the rule, i.e. a contract.[69] We would contend that the formal state is pivotal for understanding those institutions that have been – and may still be – established on an initial intention of some actors. Such 'intentional institutions' are key instruments for the direction of our societies.

Often, making the original intention of such an institution unambiguous requires high sophistication in the codification. A peculiar issue is to link (in a proper way) the new institution with the whole web of already existing institutions in order to set coherent property rights and incentives (hence the need for lawyers). Adopting a formal state is then inescapable.

Without access to the formal state, anyone requested to describe or assess the institution would be in big trouble – you may think for example of the venture of inferring a constitution, a law or a contract from an observation of behaviours or interviews! This instrumental role of the formal state is relevant for the positivist scientist, but more fundamentally – and normatively – it is crucial for the enforcement of the institution.

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[69] A minimal definition of contract is "an agreement under which two parties make reciprocal commitments in terms of their behavior". It is a *bilateral coordination arrangement* (Brousseau & Glachant 2002). "This may be explicit and embodied in a written agreement. It may also be implicit if it relies on a system of behavioral norms, for instance. An explicit contract will be guaranteed by a "third party" (e.g. a court or a mediator) or by the desire agents have to maintain a reputation for fair trading. An implicit contract will need to be sustained as an equilibrium in the interaction between the parties" (Salanié 1999).

The formal state may support the enforcement of the institution by at least two means. Ex ante, it is a powerful communication tool among actors. It may help to clarify how the institution should be practiced and expected. This is important both when the formal state tries to alter some existing institutions (many formal states enact and regulate behaviours already regularly practiced by some, cf. legislation on abortion or how words enter the dictionary) or when it marks the start of a new institution (e.g. a contract). Ex post, if there is any need to identify and assess a breach in the statutory rule, the formal state will be the key reference for the transacting parties and any third-party designated as legitimate to enforce the foreseen sanction.[70]

The formal state gives also clues on the extent to which the institution is alterable by parties: an explicit contract rests on a unanimity rule, but can be modified by the (few) signatory parties; a law administrates the interactions of more people, rests on a majority rule only but requires a whole representative system to be in place. Conversely, a social norm is difficult to change as it has no formal state and relies on decentralised enforcement.

Like the formal state, the moral state is neither a sufficient nor a necessary condition for an institution to exist. A code is an institution, but it has no moral 'backup' (see our example #4). The moral state is better seen as some kind of proto- or environmental institutional level: at this level, the institution is still vague; it includes not even agreed intentions about some specific transactions; it reflects more general aspirations and attitudes shared consciously or not by the concerned individuals, for example along a process of analogy (i.e. the existence of institutions that apply for situations close to the one under scrutiny). Yet, these aspirations can be quite influential in the determination of the other states. Laws rarely fall from heaven. Most of them reflect what the majority sees as fair. The moral state may also influence the expected state to some extent: one can quite correctly infer some behaviours in a group only by looking at the values shared in the group. Finally, it is quite clear that the moral state has huge influence on the actual state: institutions perceived as unfair or highly inefficient are challenged by people and undermined by their behaviours. These are all good reasons for the positivist scientist to collect information on this level as well.

[70] The fact that from an institution perspective, formality is essentially instrumental is attested by the fact that in a lot of legal systems, an oral contract is already valid. The written form is just valued as a mechanism to facilitate its enforcement (especially when third-party enforcement is required).

Institutions	Moral state	Formal state	Actual state	Expected state
#1: traffic lights	Respect physical integrity and properties of others and yours; be prudent.	The relevant article in the driving code: any road user should stop when the traffic light is red.	Many road users respect this rule; when they are in a hurry, some users, including pedestrians, do not. Pedestrians tend to comply less when there is no vehicle on the road.	When the light is green, I will move forward, as I expect the traffic light to be red for others (I believe in the related technological arrangement that synchronizes the lights) and I expect them to comply with the law. Yet, I will still be cautious, as I know that some users do not respect the rule.
#2: ITM duly and fully paying its employees at the end of the month	Respect others, keep up to promises; value the work duly achieved; respect the law.	The labour contract I signed with the Institute of Tropical Medicine (but also, the labour law; *commission paritaire* # 200…).	ITM has always paid me at due time (salary transferred to my bank account at the end of the month).	I expect ITM to pay my salary at the end of the month. If the pay does not arrive before the end of the month, I will wait a few more days. If the money still does not arrive, I will check with a colleague whether he faces the same situation. I will then contact the management.
#3: doctors prescribing the best available treatment to their patients in Belgium.	Do good; do not harm.	Hippocratic oath and medical codes of conduct as they are being taught (in books and lectures) to future doctors; medical science; the implicit contract between the doctor and his patient; guidelines promoted or enforced by regulatory bodies.	Uneasy to measure; it seems that most of the doctors do their best for their patients' health. Yet, there are some conflicts of interest that may be exacerbated by other institutions: the physician may try to save some time during the consultation or under-invest in updating his medical knowledge (because of the remuneration system), to prescribe some unnecessary diagnoses (to reduce litigation risk).	Most patients in Belgium have a trust relationship with their doctors. Doctors are expected by their peers to behave accordingly.
#4: English language	None	English language as it is put in dictionaries and grammar books.	English as it is practiced by a group of persons.	English as you expect it from the next person you will talk to.
#5: paying a bribe to receive health care in some countries	Respect authority; acknowledge the resource nature of the relationship?	None	In some situations, nearly everyone pay a bribe (when it gives access to a key resource). In other situations, only those who are in a hurry (jump in the queue)	The patient may know before coming to the health centre that he will have to pay a bribe. For example, he may spontaneously insert some bank notes in his patient book. Sometimes, the health staff has to demand the bribe; patients rarely complain.
#6: removing one's hat when entering a church	Respect God (if believer); respect others' beliefs (if not believer)	None	Most people remove hat when entering church	If someone keeps his hat on during the service, I expect some looks of disapproval from other church service attendant. Someone may come to him and remind him the 'rule'. If he keeps his hat on, people will perceive him as weird or antagonistic to them.

Table 3: examples of the four states of an institution

(3) Describing institutions: using the four state view

We are now better equipped to specify some first rules for applied institutional analysis. Yet, we will take just a tiny step here. In this section, we will deal only with the stage of describing institutions, and only on one of the related challenges: the information source for reporting the existence of an institution. Other questions – how to locate an institution and what one should actually describe – are dealt with in our chapter 7.

The four states as a source of information

Let us assume that one has identified an institution relevant to describe (see below). We believe that the four-state view is quite indicative on how to collect data on this institution. The actual state is the only level where regularities of behaviours can be observed. It is therefore crucial for formulating the hypothesis that an institution exists. The observation can be made directly (the way anthropologists do it by participatory observation) or indirectly (as economists do it by ex post scrutiny of a database gathering a succession of behavioural choices). As already mentioned, ascertaining the institutional character of the regularities requires excluding an exclusive role of other possible determinants. The expected state is more subjective. For any contemporary institution, it can be documented by interviewing directly or indirectly involved individuals ('key informants'). A key methodological challenge is to develop questionnaires and methods able to reveal in a comprehensive way expectations on others' behaviours but also on informant's behaviours (= intention for the next game). An issue will be to control possible strategic actions by the informants (e.g. lying in their report). Triangulation – i.e. the coverage of the same reality by interviewing different respondents with different stakes and perspectives – will be crucial to capture the complexity of the phenomena. For an institution with a formal state, the review of any existing written or audio records is very useful. As already mentioned, this step is crucial to enlighten researchers on the intentions of the actors. The values (moral state) supporting the institution can be documented through interview with key informants but also via reading about the society of study.

Analysing discrepancies between states

The four-state view suggests also some possible empirical undertakings. Quite clearly, it casts doubts on descriptions that would be based on an observation made on one level only. It urges the empirical scientist to undertake observations of the greatest number of states possible and to put these various observations together in a meaningful way.

Three combinations seem particularly interesting: (1) the combined documentation of the actual and the expected states – whose intersection gives what we defined as an institution; (2) the comparison between the formal state and the former combination – which reveals problems of enforcement of initial intentions (a possible explanation is that there has been a change in the equilibrium, for example because of a modification in the balance of power); (3) the comparison between the moral state and the formal state – which may indicate some inadequacy of the formal state when comparing with the prevailing culture and values and possibly explain the discrepancy between the formal state and the actual institution.

An illustration

The most valid descriptions will probably be those built on an iterative combination of the different observational approaches. Take the example of the institution of 'sanctioning a hospital staff member for having asked a bribe'. The best approach to document this institution is probably first to explore the actual state of the institution.

The researcher can interview a few key informants (the hospital director, but good to triangulate also with the head nurse and someone representing the hospital staff in a management body) whether anyone was ever sanctioned for such a fault. If they answer negatively, the researcher should check whether it is because no one asks under-table payment, no one was ever caught or someone was caught but there was no sanction. Let us suppose that the respondents report the last situation or they answered that yes someone was caught and sanctioned.

The researcher can ask them to report the case(s); if possible, he should also consult the minutes of the disciplinary committee (if any). A key step will be to confront the actions the management took with the internal regulation of the hospital (i.e. the formal state of the institution). Have they respected the disciplinary rules? If there is any discrepancy, the researcher should ask why it was so.

The next step could be to investigate a bit the expected state of the institution. This should be done with the managers, but also some staff members. What do they expect in the future if someone is caught asking a bribe from a patient? Trust and triangulation for such a question are crucial: some respondents may want to present a rosy view to the researcher. A key issue is to check whether the expectations are quite the same across informants (resonance of the institution).

At this point of the study, the researcher should have a good view on the practice in the hospital. Comparison across hospitals may reveal several patterns for this institution: it could be 'sanctions are taken along the rules known by everyone'; 'sanctions are taken in an autocratic and possibly arbitrary way by the director'; or 'sanctions are rarely or not taken'.

As a reminder, what establishes an institution as a 'living' entity is the congruence between the actual and expected states for a significant proportion of concerned persons. At equilibrium, these two states usually overlap very well (expectations determine behaviours which themselves are a major source of information for future expectations). This fact makes that an empirical study based only on one of the two states may still be highly reliable. Usually, there will be also a good overlap with the moral state. In some settings at least, this is less true with respect to the formal state. As repeatedly argued here, the fact that a rule is written in a document is not enough to establish it as an institution. Caution is particularly recommended for studies in low-income or transitional countries, where the formal state can be in contradiction with the moral state or clashes with other prevailing institutions.

The difficulty to isolate an institution

Sometimes, the identification of the institutional character of a pattern of behaviours is easy. This is particularly the case if the behaviours look at odds with efficiency at that very moment: there must be another explanation. Think of the driver waiting for the green light at 3 a.m. whereas he is clearly the only user of the road.

However, in most situations, things are much more difficult. Let us take another example. A health centre staff member behaves in a certain way in his vaccination practice. While available resources (e.g. his competence, the availability of renewable materials…) are possible determinants, institutions do matter as well, but which ones? There are several institutions, partially overlapping, that shape the interaction: the national immunisation guideline, the internal regulation of the health centre, the staff member's job description, his remuneration contract… Some 'further away' institutions may play also indirectly: the supply system for the vials of antigens, the fees charged upon other services to be carried out by this staff member…

The fact that a given relationship occurs in a larger set of interactions, which are also shaped by their own institutions raises the empirical challenge enormously. In fact, as we shall see later in this thesis, this is not really a problem. In the health sector, the research focus will rarely be on a specific institution. Much more important is the capacity for the researcher to document the existing structuring of property rights over the main assets (workforce, building, equipment, drugs, patient files, reputation…) and the incentives they set on the economic agents.

Having said this, this undertaking will be easier if the researcher can identify, at a preliminary stage, the key institutions. Our experience taught us that three complementary approaches are possible: the inductive one, which starts from the observation of a puzzling way to behave and tries to collect information on possible influential institutions (e.g. through interviews of key informants); a more deductive one, which starts from the documentary review of institutions having a written formal state; and eventually a more comparative one, which uses knowledge of institutions adopted elsewhere to deal with similar coordination problems (in another sector, or in another health system). We will come back on that in our chapter 7.

A summary

Our objective is to understand how institutions determine the performance of health care organisations. This chapter has focused on defining the concept of institution. We have reviewed two economic approaches to this reality. One, popularised by North, is to see institutions as humanly devised constraints structuring human interactions. A limit of this exogenous view of institutions is that it remains silent on mechanisms enforcing institutions themselves. The other approach sees institutions as the endogenous outcome of the individuals' interactions. We have argued that both views can be seen as complementary and as looking at different parts of the chain. Whereas our research program belongs to the exogenous program on institutions, we have indicated our preference to define institution as an endogenous outcome: an institution is a way of interacting, which is chosen, expected and practiced. We have then presented an original view on how an existing institution can be documented. Our main contention is that most institutions can be observed on four levels. We have derived a few consequences of this 'four-state view' for empirical work.

CHAPTER 4: ORGANISATIONS

The main objects of study of this thesis are health care organisations. To move forward, we have to clarify first conceptually what an organisation is. A definition is helpful for this task, but is not enough; the crux is to develop a *view* which will allow us to carry out our analysis.

We have seen in our chapter 2 that over the last decades, economists have made significant progress in the study of organisations. Their main quest was to find answers to two key questions relative to the firm (i.e. organisation with a legal status): why do firms exist and what determines their boundaries relative to the market? These research questions have led them to explain some organisational pattern internal to the firm, but also institutional arrangements situated somewhere between the firm and the market, the so-called 'hybrids'. After our chapter 3, we can see that all these research questions belong to the research program dealing with the determinants of the adoption of given institutional arrangements by economic agents. As far as organisations are concerned, our own research program is much more modest: we just need to adopt a view on how we should look at them. In this chapter, we propose to develop one of the main propositions that we have reviewed in chapter 2: the firm as a nexus of contracts.

The structure of this chapter is the following. In a first section, we introduce the view of the organisation as a nexus of contracts. Our proposition is to adopt a slightly modified view of it. In our second section, we list health care organisations which will get our attention.

4.1. THE ORGANISATION AS AN OBJECT OF STUDY

The organisation as a nexus of contracts: a view more than a theory

Definitions of organisation abound in the economic and management literature. For Milgrom and Roberts, economic organisations are "created entities within and through which people interact to reach individual and collective economic goals" (Milgrom and Robert 1992, p.19). A somewhat more restrictive definition is the one proposed by Robbins in his textbook and taken over by Ménard (Ménard 1997): "an organisation is a consciously coordinated social entity, with a relatively identifiable boundary, which functions on a relatively continuous basis to achieve a common goal or a set of goals" (Robbins, 1990, p. 4).

One may be tempted to classify organisations in narrower categories. In their textbook, Milgrom and Robert specify at least two levels: lower-level and higher-level organisations. Their highest level organisation is the economy as a whole. In this respect, we may quote Milgrom and Roberts as it matches with one of our contexts of study (countries like Cambodia and China experiencing economic transition): "As an organisation, an economy can and should be evaluated based on its performance relative to possible alternative arrangements. The current experience in thoroughgoing reform of entire economic systems in Eastern Europe are prime examples of the importance of this perspective" (Milgrom & Roberts 1992, p.20). We recognize here the North-like scientific research program.

Milgrom and Roberts put at the next level those entities more traditionally regarded as organisations: "corporations, partnerships, sole proprietorships, labour unions, government agencies, universities, churches and other formal organizations" (idem p.20). They characterise these organisations by "their independent legal identity, which enables them to enter binding contracts, to seek court enforcement of those contracts, and to do so in their own name, separate from the individuals who belong to the organisation" (ibid. p.20). Said differently, this second level would include any social system in which there is enough centralisation of decision rights for someone to enter a (legally enforceable) binding contract on behalf of the system.

We can go on quoting Milgrom and Robert: "This ability to enter contracts is critical to one of the major approaches to the economic analysis of organisations. In this view, which was first suggested by Armen Alchian and Harold Demsetz, an organisation is regarded as a nexus of contracts, treaties, and understandings among the individual members of the organisations. The firm itself is then a legal fiction that enters relatively simple, bilateral contracts between itself and its suppliers, workers, investors, managers, and customers. Without a legal entity that can contract with them individually, these people would have to fashion complex, multilateral agreements among themselves to achieve their aims" (ibid., p.20).

If we reorganise a bit the argumentation, we touch here two interesting but quite distinct propositions.

The first one is the idea that any organisation can be seen as a nexus of contracts. The second one is that parties in interaction through an organisation have a choice to make: either to base the arrangement on some kind of multilateral agreement or to adopt the *firm* arrangement, i.e. to create a legal entity and entrust it to at least one owner, who will hold decision rights to organise the interactions on a set of bilateral contracts. It would be the complexity of the first option – or put in the language we practiced in our first chapter, the height of the related transaction costs – that would explain the preference for the 'legal entity + bilateral contracts' model. We propose to discuss these two ideas sequentially.

We have seen in our chapter 2 that the 'nexus of contracts' formula was popularised by property rights economists. They promoted this formula partly in opposition to Coase and Williamson's dichotomist view, which saw organisations and markets as alternative mechanisms to coordinate transactions. For Alchian and Demsetz, the employer-employee relationship can be likened to the one between a customer and his grocer. According to them, it is wrong to characterise the firm by its power to settle issues by authority. It has no disciplinary action any different from ordinary market contracting. One can also 'fire' one's grocery by stopping purchases from him, sue him for delivering faulty products or request him to carry out various tasks (Alchian & Demsetz, 1972).

Incomplete contract theory developments have partly invalidated the proposition that the firm has no more power over its employee than over any of its independent suppliers. Employees usually do not own their non-human assets, suppliers do; this gives the latter a better position in their negotiation with the firm. But does incomplete contract theory invalidate the view of the organisation as a nexus of contracts? We do

not think so: it just stresses the importance for the study to identify also who owns the non-human assets, i.e. who has the residual decision rights on these assets.[71]

More fundamentally, one must probably distinguish two components in the property rights economists' work: one which has many traits of what Ostrom would characterize as a framework (which we shall clarify and develop extensively in this dissertation), and one which consisted of more theoretical propositions. We would contend that whereas Alchian and Demsetz's nexus of contracts *theory* of the firm did not last long, the nexus of contracts *view* of the firm – which just says that organisational economists should focus on (complete and incomplete) contracts for their understanding of the reality of organisations – has still a lot of appeal.[72] We develop this idea in the next section.

Let us move now to the second idea that we have spotted in Milgrom and Robert's paragraph: the firm arrangement, i.e. the combination 'legal entity + bilateral contracts' would be a superior arrangement than the multilateral contract one. This question of discrete structural alternatives has some hypothetical character; mere common sense dictates us that at a certain stage of complexity, multilateral interactions require to be structured and coordinated. As we know from our previous chapter, Williamson is the one who initiated this kind of analysis (Williamson 1991).

Whereas such a question is certainly interesting, we have mentioned in the introduction of this chapter that it is not our focus. For our own purpose, we just have to agree on how to look at 'organisations". In this respect, we would tend to disagree with the idea that an organisation necessarily equates with a legal identity. There are 'lower-level organisations' without legal identity. The best examples are certainly the household unit and all organisations of the informal sector. Having said this, we do not deny that a legal status does give a special character to an organisation (Hodgson 2002), henceforth our preference to use the term '*firm*' to refer to organisations with a legal status.

We believe that the distinct legal entity approach is misleading for a second reason: it creates the false perception that the boundaries of the organisation stop at this legal entity. A bit ironically, this is in fact contradictory to the nexus of contracts view, which suggests that the institutional study of an organisation requires considering all the contracts the organisation participates in, as precisely these contracts shape/constitute the organisation.

In fact, we believe that if one takes up the nexus of contracts view – as we shall do with some flexibility in this thesis – one has to acknowledge that some fuzziness is inherent to organisation analysis.

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[71] As shown by Rajan and Zingales, ownership of a non-human asset is not even required; what matters are the control rights on determining *current access* to a *critical resource* (Rajan & Zingales 1998;Rajan & Zingales 2001).

[72] There exist also organisational theories not focusing on contracts (Bolton & Dewatripont 1994).

Our approach: a 'complex of institutions' view

Given our goal, the 'nexus of contracts' approach to organisations is appealing, especially because of its qualities at the analytical level.

Four qualities of the nexus of contracts view

First, it is clearly compatible with our choice for methodological individualism (i.e. social phenomena as the results of individual actions only). It shares the view that organisations are, first of all, artefacts developed and voluntarily adopted by individuals in order to coordinate themselves. This emphasis on individuals' decisions marks an epistemological break with the tradition of seeing an organisation as an established body with its own reality and goals.

As Milgrom and Robert put it:

"The ultimate participants in transactions are individual human beings, and their interests and behaviour are of fundamental importance for understanding organizations. People are fundamental first in the sense of being indivisible decision makers and actors; it is people – and not organizations – who actually decide, vote or act. The actions of individuals determine the behaviour and performance of organizations. Furthermore, only the needs, wants, and objectives of individuals have ethical significance. Economic organizations are judged only on the basis of how well they serve people's intended purposes. Finally, it is people who ultimately create and manage organizations, judge their performance, and redesign or reject them if this performance is found inadequate." (Milgrom & Roberts 1992, p. 21).

Second, the nexus of contracts view is compatible with a view of economic agents as rational optimisers of their well-being. The organisation is strictly an instrument for this optimisation. Along this view, "people give their allegiance to an organisation that serves their interests" (idem., p. 20). For economists, this quality is important: it ensures that microeconomic modelling is possible (cf. our chapters 2 and 6). Yet, the view is not exclusive either in terms of assumptions on the behaviours of participating individuals; as testified by the work of people like Williamson or Hart, the view can accommodate also bounded rationality.

Third, the nexus of contracts view proposes an extended scope of analysis: indeed by considering contracts – all the contracts – the view expands quite considerably the things the analyst has to look at. This analytical quality, which has not been appreciated enough so far, deserves some longer developments

If one fully respects the nexus of contracts logic, any contract is somehow a constitutive element of the organisation: changing a contract is somehow changing the organisation. This transcends an important weakness of the 'distinct legal entity' approach: the naivety of the latter with respect to what really matters. As highlighted by Milgrom and Roberts, the legal criterion may misidentify the effective boundaries of the organisation. They give the example of the national subsidiary of a multinational company: the subsidiary has an independent legal identity; yet, from a certain perspective, it can be erroneous to view it as a separate organisation of the larger corporation, which owns the subsidiary and controls therefore the key decision rights. Milgrom and Roberts conclude that "in these circumstances, a useful way to look at the defining boundaries of an organization is in terms of the smallest unit that is functionally autonomous, in that it is largely free from intervention by outside parties in its affairs and decisions, over which it then enjoys broad internal discretion" (ibidem, p.21). Obviously, with this approach, what one gains in lucidity has a cost in terms of vagueness. While Milgrom and Robert tend to solve that by a restrictive view (they conclude that according to their test, the multinational company is then the separate organisation), our preference is to fully acknowledge this vagueness.

The reality is that frontiers of organisations are fuzzy; this directly stems from their contractual nature. The most intuitive way to recognise this fuzziness is probably the issue of 'level' identified above. Most organisations encompass lower units and are themselves encompassed in a higher unit. The key to define an organisational unit should be the property rights, especially those related to decisions on the utilisation of assets, held by the unit or its manager contingently to the functions to be performed. Property rights do not offer a good cut-off point for sure (more on this in our next chapter), but they indicate clearly that the organisational level of interest is not fixed. To come back to the multinational company, for some issues, it makes sense to consider the subsidiary as the organisational level of interest. But for some other matters, it can be useful to look at the separate production sites, their departments and even their teams of workers as organisations per se. Things are similar in the public sector with the central government, the line ministry (e.g. the Ministry of Health), the administration (e.g. the health district office), the frontline facility (e.g. the hospital) and its departments (e.g. wards). But this vertical view is in fact just a particular case. Contracts make that frontiers are porous with any agent. Partnerships, networks, subcontracting and continuity in relationships – all phenomena which obviously exist because of the economic benefits that they bring - may impede the clear-cut delineation from the 'external world'.

A similar view has been defended by Steven Cheung already 25 years ago (Cheung 1983):

"Some ten years I posed to Coase the following question: If an apple orchard owner contracts with a beekeeper to pollinate his fruits, is the result one firm or two firms? This question has no clear answer. The contract involved may be a hive-rental contract, a wage contract, a contract sharing the apple yield, or in principle, some combination of these and still other arrangements. In each case the beekeeper receives a remuneration for his service, and the orders he expects from the orchard owner vary with the form of contract. (…) Most economists would probably opt for only one firm if the beekeeper is hired on a wage contract but for two if the hives are rented. Does it make sense to say that the number of firms, hence firm size, depends on the chosen form of contract? (…) The truth is that according to one's view a "firm" may be as small as a contractual relationship between two input owners or, if the chain of contracts is allowed to spread, as big as the whole economy. (…) The important questions are why contracts take the forms observed and what are the economic implications of different contractual and pricing arrangements" (pp 16-18).

The crux in organisational analysis is to recognise that contracts can take many forms and that the full understanding of the incentive structure – which should be the real focus of attention if one fits in a research program on the impact of institutional arrangements on behaviours – requires a non exclusive view. Equating the organisation to its rental contracts (including salaried work) and the transfer of decision rights that they generate then is a mistake; this situation is just a polar case (Cheung 1983). Let us consider for example to the case of Belgian hospitals: would it make any sense to undertake their organisational analysis leaving aside physicians on the basis of their self-employed status? We do not think so.

As far as empirical work is concerned, the nexus of contracts view steers the organisational analyst in a clear direction: be inclusive, be ready to look at all the contracts. In fact, besides the unavoidable step of 'fixing' the object of interest, we believe that there is little value in setting firm boundaries to an organisation. It is important to acknowledge the difficulty lying in such an exercise; to some extent, it is because of this difficulty (which stems itself from the myriad of possible ways to distribute rights over assets), that institutional arrangements are a distinctive field of

research.[73] Our Figure 4 tries to depict that: the organisation boundaries are set by its control over various assets gained through contracts.

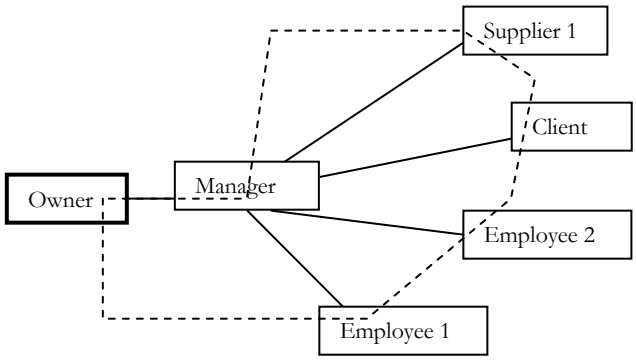

Figure 4: the boundaries of the organisation

A last quality of the nexus of contracts approach can be found at the instrumental level: it is its emphasis on the possibility to change the organisation; parties just have to agree to modify the underlying contractual arrangement. This sets organisational arrangements as alternatives; abandoning one in favour of another one is an option. Exploring the pros and cons of the different alternatives is in fact the whole research program of organisational economics.

The fact that the nexus of contracts view may capture a lot and is compatible with many theories, does not exclude however that it may also sometimes oversimplify reality.

One limit of the nexus of contracts view

A major criticism deals in fact with this idea that everything is negotiable. First, one must note that many contracts may be proposed on a 'take it or leave it' formula. Second, organisations have some collective character not reducible to the notion of contract (Brousseau & Glachant 2002;Petrella 2003). For example, trust between individuals and employees' identification with organisational goals (see further) are phenomena not negotiable between parties (Simon 1991). Third, there are also all the institutions agreed at another level of involvement, a level on which transacting parties may have no say (e.g. law, social norms).

In our chapters 1 and 2, we have seen that most theoretical propositions made by economists poorly handle the fact that contracts rely on the institutional environment for their design and enforcement. They are not just floating in the air. As Brousseau and Glachant put it:

"They (contracts) are also costly to devise and manage, so the contracting parties will, as much as possible, fall back on collective provisions emanating from the institutional framework. The latter plays two essential roles:

- First, it provides a *basic set of coordination rules*, freeing agents from the need to invent, or reinvent, all of them within their contractual relationships. For example, external technical

[73] Distinctive for example of previous works in market neo-classical economics.

standards eliminate the need to compose a voluminous specification manual, while "common knowledge" specific to a profession dispenses with the requirement to formally describe the criteria defining certain characteristics, or behavior, as "standard" or "fair".

- Second, the institutional framework lends credibility to *sanctions guaranteeing the performance of contractual obligations*. Reputation, the self-regulating systems of some professions, and public authorities' power to regulate and coerce, all provide further support for the contracting parties.

This has important consequences for the analysis of contracts. On the one hand, the nature of implementable contractual arrangements is highly dependent on the real characteristics of the institutional framework, particularly on the makeup of its failings. On the other hand, the institutional framework cannot be reduced to its public components, such as the legal environment and the judiciary. Formal collective institutions (such as professional codes of conduct or "self-regulations" enforced by corporations or professional associations) join with their "informal" analogs (including behavioral rules imposed by relational networks such as professions, social and ethnic groups, etc.) to flesh out the full complement of relevant properties of the institutional framework" (op. cit., p. 14).

The organisation as a nexus of institutions

These comments about the institutional fabric – are closely akin to Aoki's ones (Aoki 1996) – are obviously important, especially given our willingness to develop analyses relevant for policy makers. Our proposal for this thesis is (1) to take up a '*complex of institutions*' view of the organisation; (2) to apply it in a flexible way ('variable geometry').

The complex of institutions view holds that contracts play a central role in shaping organisations; yet, it acknowledges that 'environmental' institutions, which are given to parties, matter as well. The complex of institutions view tries also to acknowledge to some extent recent developments in organisational economics, especially those related to enforcement and power. In our next chapter, we will elaborate on this: the crux indeed in institutional analysis is to identify how economic property rights are distributed among economic agents. As will be made clear in the next chapter, any institution matters in this perspective.

Along this view, an organisation is a system of ways to interact, ways that are expected and practiced by a set of parties. It is a system because institutions are connected to each other. The systemic character derives also from the fact that the ways to interact, the institutions, are not together by accident. There is a logic that holds everything together and gives the organisation its coherence and cohesion: this logic is the convergence of wills of the different parties interacting through the organisation. To a large extent, the institutions have been chosen and moulded by the transacting parties, according to their individual and collective goals. This explains that contracts, which are alterable by the parties in transaction, are considered as key institutions.

This coordination of multiple interests, which always conflict to some extent, may be complex. Societies have established a key institution to facilitate it: the ownership of the organisation. This requires that the organisation adopts a legal status, i.e. becomes a *firm*. The specific legal status and its content in terms of property rights are of course other key dimensions of interest.

However, beyond the contracts and the legal status of the organisation (if any), there other institutions, which are not decided on by parties in transaction, but matter as well: moral norms and codes of conduct. The analyst has to consider them more as parameters.

A first step towards the framework

Our approach, which will be more extensively developed in the chapters to come, can already be assessed against the five key attributes of the 'ideal framework' identified in our section 2.2.

For sure, descriptive power is secured by our step towards a holistic view of the organisation. Critiques will remark that the challenge then is where to stop: the 'environment' can be quite large as a reality. As already argued above, allowing for fuzziness is in fact a required step in organisational studies. Let us note also that by adopting the complex of institutions view we are able to benefit from the empirical progress made in our previous chapter (the 'four state view'). Yet, as already mentioned in chapter 3, the systemic character of organisations creates major challenges to identify the influence of a specific institution on the economic agents' behaviours.

The flexible practice of the complex of institutions view will ensure some analytical power to our work. We will be able, at a certain stage, to tap the strengths of neoclassical modelling for getting insights on how contracts establish incentives. It may also help us to focus our empirical scrutiny on a few institutional parameters, something which may greatly ease the achievement of valid results.

Another quality of the 'complex of institutions' view is that it is sympathetic to other paradigms than economics. Stressing the importance of the environmental institutions for example is tantamount to acknowledging the role of culture. This openness – and the implicit acknowledgement that reality is too complex for being handled by a single paradigm – can only enhance the argumentative power of our work towards non-economists.

We eventually believe that the 'complex of institutions' view is beneficial for our prescriptive ambition. First, as far as instrumentalism is concerned, the view warns against the naïve and dangerous belief that a given nexus of contracts can easily be transplanted from one context to another. This may prevent us from overstating the external validity of our empirical findings, a pitfall in which too many experts advising developing countries have fallen in the past. The view also clearly summons scholars to set up context specific studies (Aoki 1996). Second, as we shall see in chapter 7, the 'complex of institutions' view facilitates dealing with some normative issues with respect to agents in interaction. More in particular, normative approaches to stakeholders are on firmer ground.

Individuals and organisation's goals

While the two definitions given at the start of this chapter were acknowledging that any organisation is an artefact adopted by interacting agents in order to attain some goals, the definitions were ambiguous about whose and which goals one refers to more in particular.

Within a nexus of contract view, the answer is quite straightforward: at the start, there are the goals of the contracting parties (among whom the owners, if the organisation is a firm). Along this view, the organisation is an instrument in the hands of fully autonomous individuals; they use it as a mechanism to turn their conflicts of private interests into mutual gains.[74] Yet, sociologists would certainly condemn this view for

[74] This view is compatible with any goals valued by the parties in contract: self-interest is surely a possibility, but as much as altruism or even self-sacrifice.

overlooking the fact that there are organisational goals imposing themselves upon individuals. We would argue that interestingly enough, the nexus of contract view does not exclude the existence of goals mainly attached to the organisation itself. One could even say that it predicts their emergence. The case of non-profit organisations is particularly insightful, as there is no real principal instrumentalizing other parties.

The argument would go as follows. An organisation does not necessarily disappear when one of the parties in contract dies or decides to end the contractual relationship. As long as there are human beings interested in interacting through a given organisation, it may continue. For those individuals valuing the perpetuation of this organisation as a mean of co-ordination, there is a benefit (from their private interest perspective) in getting the organisation known by other potential resource contributors. Indeed, in a situation where organisations are of various types (in terms of co-ordination problems that they solve) and pre-exist to individuals, a key issue for everyone is to identify which organisations to transact with (e.g., as an employee, as a donor). When the organisation is non-profit, the more it has its own identity and idiosyncratic goals (i.e. distinctive from heterogeneous private interests), the lower the search costs for the different parties will be. Clear identity plays as a sorting mechanism towards potential contracting parties. This is particularly true for employees: the doctor joining *Médecins Sans Frontières* knows to a large extent, what kind of professional challenges and experiences she is heading to.

This process leads to a progressive gathering of managers and employees with similar preferences and beliefs. To a large extent, the consolidation of organisational goals is in fact the result of a homogenization of preferences or equivalently, a differentiation from outsiders' preferences.

The existence of organisational goals also enhances the co-ordination among actors already transacting through the organisation. Any organisation is constructed on the basis of many contracts, some of which remain quite incomplete. Formulating the mission of the organisation in an unambiguous way is particularly useful when hierarchy is loose and employees make important decisions. Clear goals and missions help parties to identify courses of action that are allowed and those which are not. Accordingly, many nonprofit organisations try to make their mission and objectives explicit. When goals cannot be fully formulated in advance (i.e. are not contractible), the corporate culture – shared beliefs, assumptions and values – will be even more important. Again, *Médecins Sans Frontières* and its charter is a nice example of that.

In some sectors, the emergence of organisational goals has been so successful that they attract full attention when an assessment of performance is developed. We believe this is a mistake. We will come back on this in our chapter 7 which deals with the definition of performance of public health care organisations.

To summarise, our view is that goals pursued by individuals through organisations are primarily private; yet, the inter-individual co-ordination may benefit from the precedence of some organisational goals over private ones; in these situations, organisational goals will emerge and at a certain stage, establish their own reality, beyond any cold calculation by rational agents. They may supersede individuals' private interests to a point that individuals will have to choose between subscribing to these organisational goals or refraining from transacting with the organisation. This process is particularly into play with employees. The emergence of organisational goals is to a fair extent the result of the

progressive homogenization of personnel's preferences and beliefs, through sorting and common experience. As a matter of fact, firms are more homogenous than the society.[75]

4.2. HEALTH CARE ORGANISATIONS

Health care organisations

It is high time to apply the concept of organisation to our field of research and to isolate the organisations that will receive most of our attention.

As already said, there is no unambiguous empirical test to delineate the frontiers of an organisation. This makes partly arbitrary any effort to group organisations into separate categories. One option is to class them by number of persons involved in the coordination.

In our field of research, it makes sense to identify the *health system* as the highest organisational level below the whole economy. We would distinguish this level from the economy by the fact that the health system entity, by its elements, is more focused in terms of purposes: their common goal is to protect, improve or restore health.[76] As an organisation, the health system is marked by a very advanced decentralisation and more particularly by the absence of a representative body able to enter contracts on its behalf. The health system could therefore be referred as an 'overarching non-centralised organisation'. One must note that the focused nature of the organisation is partly a view of mind: some health actors may be unaware of the fact that they are part of the system. Yet, the extensive use of the concept by key players indicates that it has some actual relevance for conceptualising and thinking about their (inter)action.

Given the focus of this thesis, the next organisational level of interest would be the *public health system*. Despite its widespread utilisation in policy, debate and publications, this organisational level is less straightforward than it may look. This is due to the great ambiguity of the qualification 'public'.

One track is to restrict the public health system to organisational bodies which are owned by the State through one of its governments or agencies. This view would encompass for example health facilities owned by the Ministry of Health or local governments, but also health facilities owned by the Ministry of Education or the Ministry of Defence or even state-owned enterprises. Another option would be to look more at the population served by the health organisations. We could for example mimic the 'public transport' expression and gather under the public health system those organisations geared towards the needs and demands of the general public (versus health organisations serving exclusively some circumscribed groups, e.g. the military forces or employees of a company). This would mean that formal and informal private for-profit providers would be part of the public health system. A third option is to encompass under the public health system all the organisations that implement the government's health policy, possibly because they benefit from some government-controlled resources for this contribution. It seems to be the view adopted by observers of the situation in low-income countries when they attribute the public status to most not-for-profit health

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[75] For similar propositions, see the work by Eric Van den Steen, for example (Van den Steen 2005).
[76] We prefer the term 'health system' to the one of 'health sector'. The former indeed conveys the idea that there is some co-ordination (even in a decentralised form) between the sub-components and actors. The latter is just the recognition that in an economy, there are actors in the same field of activity.

care providers and, rightly or wrongly, deny it to the for-profit ones. In sub-Saharan African countries, such an approach would bring most of the church-owned health facilities within the public health system. A fourth option – a bit more inclusive than the previous one – would be to enlist as part of the public health systems all the health organisations that recognise Ministry of Health authority in health affairs and respect the pertaining obligations (registration, reporting, supervision visit…).

Obviously, convention rather than 'truth' is the answer here. In many countries, what we could call the owner, user, purchaser and regulator perspectives often overlap, but only partly and in a different manner. Furthermore, for each track there is an issue of degree (a health facility can have several owners, a hospital can focus on children, and regulation can be tight or very loose…). A definition consistent across settings is therefore impossible.

This thesis mainly addresses problems encountered by health systems historically organised along the NHS model; we propose therefore to circumscribe the public health system to organisations implementing the government's health policy, and the Ministry of Health's one in particular.

By our definition, the public health system is more centralised than the broader health system. In the countries where the *Ministry of Health* has full control over the public health facilities, there is a single legal entity able to enter contracts. Some centralisation can exist in other segments of the public health systems, for example through other line ministries (e.g., the Ministry of Education owning university hospitals) or levels of government (e.g., the township). Yet, some decentralisation is present also; this is obvious if the Ministry of Health relies also on private organisations to implement its policy, but this is also the case within the public administration itself.

Our thesis focuses on the services for the rural population. We have seen in our chapter 1 that in many low-income countries, rural health service providers are organised by geographical areas. A *health district* classically gathers several health centres, a referral hospital and a health district office in charge of coordinating the whole network. In such a situation, it makes sense to identify the health district as another intermediary organisation, with the district office as its representative.

The next level is made up of the *organisations with a mission of delivering services*. First, there are organisations providing health care services directly to the population: the health centres, the hospital and the specialised services (e.g., a screening unit focused on a disease). Other organisations are providing annex services to the population; for example, a community health insurance may provide protection against catastrophic health care expenditure. Eventually, there are also the auxiliary organisations providing supportive services to the first two categories; for example, the health district office.

The identification of organisations can be pushed one step further. First of all, a same legal entity (e.g., a hospital) may have facilities on different sites. Each site may have some autonomy in its organisation. Even further, for some issues, a hospital department can fulfil the definition of an organisation. Pushed to the extreme, the team that gathers to perform surgery in the operation theatre could be seen as a temporary organisation.

We see therefore that in the health sector as well, some organisations encompass others. Yet, it would be misleading to see this reality only as a collection of Russian dolls. As we have seen with the case of the church-owned health facilities, frontiers are porous. Another example is the health district: the district office plays some roles of co-ordination and representation, but facilities that it coordinates and represents, have also a large autonomy, especially if they are not owned by the government. As already said, we

do not believe that the exact delineation of an organisation is the key question. The crux is to acknowledge that there are different possible institutional options for the interacting agents to coordinate, and that some configurations are possibly more efficient than others in the attainment of some specific goals.

If exact delineation is not possible nor required, we still need to circumscribe our own study. We propose to focus the attention of this thesis on the organisations, which, in close connection with the government policy, deliver health services to the general population; they are hereafter called **public health care organisations**. We will focus on health centres (in the Rwanda papers of Part II) and rural hospitals (in the Cambodian papers). Yet, as made clear by our chapter 1, we will extend our analysis to the health district as well (our chapter 8). Organisations above this level (e.g. the Ministry of Health central office) or below the public health care organisations (e.g. households, community groups) will not be studied.

A summary

This chapter has focused on developing a view on organisation.

We have first introduced how economists apprehend organisations. A major proposal, put forward by property right economists, is to view the organisation as a nexus of contracts. A limit of this approach is that it is too restrictive; it does not capture some key aspects of organisations. We have therefore proposed a nexus of institutions view of the organisation. The main quality of this approach is to open the scope of analysis to all phenomena affecting the de facto distribution of rights over assets; among other things, it allows for the fact that frontiers of organisations can be quite fuzzy. In this chapter, we have also clarified which goals are pursued through organisations. We have taken the view that they are mainly those of the transacting parties; any kind of goal valued by them is possible. Yet, we have argued for the existence of organisational goals as well.

In the last section of this chapter, we have also listed key organisations of interest in the health sector.

CHAPTER 5: PROPERTY RIGHTS

"Property rights do not refer to relations between men and things but, rather, to the sanctioned behavioural relations among men that arise from the existence of things and pertain to their use"

Furubotn & Pejovich (1972)

Today, many economists would probably agree that the 'institutions – behaviours' relationship is one of the main areas of study for economics. There is a kind of paradox though: while economics has been dealing with institutions, incentives and behaviours nearly since its start, it is only recently that economic problems have been reformulated in this way by mainstream economists.[77]

In regard to this key relationship, one can spot two practices in the existing literature: either conceptual vagueness (e.g. North) or mathematical formalisation with a fair deal of implicitness (e.g. contract theory). Our stance throughout this thesis is to dismiss ambiguity.

The objective of the next two chapters is to unravel the chain of mechanisms that makes that institutions influence behaviours of individuals in interaction, and eventually performance of organisations. A key link in this chain is the structure of the property rights. This chapter mainly focuses on the determinants of this structuring, the next one on its impact on behaviours.

Our study of determinants of property rights structuring is organised in two sections, which follow to a large extent the historical sequence of theoretical developments in this domain. In our first section, we follow the standard approach which assumes most property rights as exogenously given. This allows us to establish a clear connection between institutions and property rights, and to introduce some key insights brought by the work of early property rights economists. In our second section, we introduce a more recent approach, which highlights that property rights are determined both exogenously and endogenously. This provides us with a framework particularly convenient to understand issues related to property rights enforcement. We summarize the main lessons for our research question in our third section.

5.1. PROPERTY RIGHTS AS EXOGENOUSLY GIVEN

The function of institutions (an introduction)

An intuitive way to approach the relationship between institutions and behaviours is the question of the very function of institutions; why do societies set up institutions?

According to North, the main function of institutions is to provide structure to our every day life. "Institutions exist to reduce the uncertainties in human interaction. These uncertainties arise as a consequence of both the complexity of the problems to be solved and the problem-solving software (to use a computer analogy) possessed by the individuals" (North 1990, p. 25). As a matter of fact, our life environment is complex.

[77] See for example, the first chapter of Laffont & Martimort 2002.

Due to labour specialisation, we are engaged in numerous human interactions. Already in a non-interactive set-up, computing the maximising behaviour is beyond our computational power. Our incomplete information about the behaviours of other individuals compounds even more the decision-making. As ways to interact that are practiced and expected, institutions provide a template for actions.

Along this view, institutions help us to solve our coordination problems by simplifying the interactive process. They indicate directions for behaviours. We have seen in our chapter 2 that North has stressed the constraining character of institutions.

Institutions restrict my individual choice set. They do so through their key attribute of resilience towards my short-term self-interest calculations. For example, today, I need some money; short-term calculation would induce me to ask a bribe from a rich patient who is queuing. Still, because of some professional code I internalised and expectations I have on future interactions, I will not opt for this behavioural strategy. As put by Giddens (quoted in Scott 2001, p.49): "Institutions by definition are the more enduring features of social life… giving 'solidity' [to social systems] across time and space".

While this is certainly true, we believe that North has not highlighted enough that institutions are also constraining others. If institutions restrict my choice set, but also others' options, they play an unambiguous role: to determine respective property rights.

Institutions shaping property rights

We have seen in our chapter 2 that property rights have been a major research field for economics these last forty years. Main insights and concepts were provided in a few seminal papers by Alchian and Demsetz and later improved by a second generation of researchers. Let us introduce these insights quickly.

Armen Alchian has defined property rights as the rights of individuals to use resources (Alchian 1961). An alternative definition is the one recently proposed by Allen: a property right is "the ability to freely exercise a choice over a good or service" (Allen 1999, p. 898). The right can be understood as a circumscribed entitlement to exercise one's will over the good or service without being accountable to others; it creates a certain zone of privacy (Cooter & Ulen 2004).

Very early, property right economists have stressed the social character of property rights. "In the world of Robinson Crusoe property rights play no role" (Demsetz 1967); or as stressed by Furubotn and Pejovich in 1972: "property rights do not refer to relations between men and things but, rather, to the sanctioned behavioural relations among men that arise from the existence of things and pertain to their use" (Furubotn & Pejovich 1972).[78]

The fact that property rights refer to 'sanctioned behavioural relations' establishes direct links between property rights and institutions (as we defined them). The first to establish this link between institutions and property rights was probably Alchian (Alchian 1961, quoted in Eggertsson 1990).

"The rights of individuals to the use of resources (i.e., property rights) in any society are to be construed as supported by the force of etiquette, social custom, ostracism, and formal legally enacted laws supported by the states' power of violence of punishment. Many of the constraints

[78] As highlighted by property rights economists, if one extends the notion of asset to the person, an interesting consequence is that the traditional divide between human rights and property rights becomes invalid. More fundamentally, this reference to the 'self' as an asset allows to consider contractual agreements on the individual's workforce (e.g., labour contract, service contract) as well.

on the use of what we call private property involve the force of etiquette and social ostracism. The level of noise, the kind of clothes we wear, our intrusion on other people's privacy are restricted not merely by laws backed by police force, but by social acceptance, reciprocity, and voluntary social ostracism for violators of accepted codes of conduct" (p 34).

Demsetz is even more explicit in his 1967 paper:

"Property rights are an instrument of society and derive their significance from the fact that they help a man form those expectations which he can reasonably hold in his dealings with others. These expectations find expression in the laws, customs, and mores of a society. An owner of property rights possesses the consent of fellowmen to allow him to act in particular ways. An owner expects the community to prevent others from interfering with his actions, provided that these actions are not prohibited in the specification of his rights" (p. 347).

As ways to interact that are practiced and expected, institutions determine the use of resources that are socially accepted. They delimitate what an individual can do with an asset without reprobation or sanction by others and the possible rewards attached to behaviours. From this perspective, they are key shapers of property rights.

An example may help clarify how the concepts of institutions and property rights link with each other. As a starting point, let us observe that the property rights concept, by essence, integrates at least two more pieces of information than the institutional one: it takes an individual's perspective and refers to a given asset. Obviously, a property title attributes the ownership of a house to someone. But the property rights are defined by a much broader set of institutions. There are laws, local decrees, social norms, customs, contracts and informal agreements that determine the actual utilisation one may have of the property. Think of the town-planning constraints on changing the structure of the building or its allotment, the obligations and rights attached to the building if listed, the rights attached to garbage collection, some tit-for-tat practices agreed with the neighbours…

In fact, for most assets, property rights are not established by property titles – for example, for all the movables, possession amounts to title.[79] It is the surrounding institutions and their combination more precisely, which are the real tracers of property right boundaries.

Crucial is to acknowledge that as institutions apply to others as well, they enhance our own control over resources. Think of the institution 'do stop when the traffic light is red'. Indeed it restricts my utilisation rights on my car and the public road; yet as it applies also to others, it puts obligations and an interdiction upon them. As a result, it protects my rights over my time (from a traffic jam), my car (from damage due to any accident) and my body (from injuries from any accident).

Property rights structuring

It is correct to say that according to the Alchian-Demsetz tradition, property rights are defined by institutions. To the extent that institutions are mouldable, it is possible for individuals to give a peculiar structure to someone's property rights. To understand challenges related to property rights structuring, we need to progress by steps. The first step is the mere recognition of the possibility to *partition* property rights. The second step is the adoption of an analytical key to look at a given structuring.

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[79] The article 2279 of the Napoleon Code: "*En fait de meuble, la possession vaut titre*" is probably the best example of the link between institutions (as ways to interact that are expected and practiced) and property rights.

Property rights partitioning

By their physical characteristics, many assets can be used by several economic agents in a sequence or at the same time. These multiple utilisations can apply for a same service (e.g. several drivers using a same road), but also for different usages of the asset. It is therefore standard for property rights economists to state that property rights can be *partitioned* (Eggertsson 1990). As an illustration of a partitioning of property rights, Alchian gives the example of land (Alchian 1961, pp 132-133).

> "By this I refer to the fact that at the same time several people may each possess some portion of the rights to use the land. A may possess the right to grow wheat on it. B may possess the right to walk across it. C may possess the right to dump ashes and smoke on it. D may possess the right to fly an airplane over it. E may have the right to subject it to vibrations consequent to the use of some neighboring equipment. And each of these rights may be transferable. In sum, private property rights to various partitioned uses of land are "owned" by different persons".

Partitioning can be organised on the different dimensions of the asset. One could imagine a partitioning on physical properties (you have property rights on surface of the land, I have rights on its underground), on uses (you can use the river to circulate on it, I can use it to make my millwheel turning) or on the temporal dimension (you have the car today, I have it tomorrow) (Stake 1999).

Combined with the multiplicity of individuals, this property creates a myriad of possible options for the decomposition of the property rights. To the extent that rights are tradable, one can imagine that anyone holding a substantial bundle of property rights will retain the rights that he values the most and sell or rent others rights which are demanded on the market. As a matter of fact, many market transactions are not transfers of full ownership: transactions bear on portions of rights only; the best example being of course the labour market where we rent property rights on our time, physical force and intellectual capacity.

Analytical decomposition

A major research question for property rights economists has been the identification of principles to guide decisions in terms of property rights structuring (Alchian 1961, Demsetz 1967, Eggertsson 1990). According to them, property rights can be divided into three main categories: (a) the right to use the asset; (b) the right to transfer/alienate any portion of the asset at mutually agreeable term; and (c) the right to appropriate the returns from the asset.

Utilisation must be understood in a broad sense; it includes using the asset for final consumption or as an input for a production process, developing or transforming the asset, but also not using it, for whatever reason valued by the owner (e.g. to keep the asset as a reserve of value). Obviously, some utilisation may require to change the form and/or substance of the asset, including its depletion or even destruction. The right to transfer includes exchange, sale, but also gift and bequest. It can be limited in time (e.g. a rent), to a component of the asset and to one of it specific services (e.g. when I buy a record, I buy the right to listen to it, not to reproduce it for commercial purposes). The right to transfer allows the last right: the right on earnings, which may come for example from selling, mortgaging or renting the asset.

In the study of organisation, it is classical to gather the first two categories of rights under the generic group of *control rights* or *decision rights* over the asset. The last one then is the *right on earnings*.[80]

Efficient bundles of rights

Equipped with these three distinctive categories of rights, it is straightforward to demonstrate that gathering them in a same hand has great economic relevance.

Let us consider first the combination of decision rights on utilisation and benefit rights. Let us assume that they are held by a single person. Such a situation has two virtues. As the decision-maker and the beneficiary are the same person, there is no information problem for the decision-maker: he perfectly knows the preference and existing situation of the beneficiary (perfect information). If he wants, he can take the best decision in favour of the beneficiary. There are very good reasons to believe that it will be the case: the decision-maker being the sole beneficiary, he is sure to retain fully the benefits stemming from his decision; he faces what we could call perfect incentives. The two qualities put together guarantees that the owner takes decisions over the asset (e.g. relatively to its maintenance or improvement) in such a way that the future stream of net benefits is maximised.

Still, it may be that the person holding the utilisation and benefit rights have limited capacity to make the best use of the asset from a societal perspective. Think of the situation after an inheritance. Heirs usually have other portfolio of resources (including skills) and other preferences than the late owner. An heir inherits a car, but he has an impairment that forbids him to drive. For sure, there are individuals who could make a much better use of the car than him; they are ready to compensate him for a transfer of rights, for a period of time or for ever. Again, the fact that transfer and benefit rights are held by the same person ensures that this person will rent or sell the right to the person offering the highest price. If there is no market imperfection (e.g. no credit market imperfection, no externalities…), economics predicts that the person proposing the highest price is the one able to make the best use of the resource from a societal perspective.

According to Alchian and Demsetz, the very definition of ownership is the holding of the utilisation, earning and transfer rights by a same person or organisation.[81]

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[80] An alternative categorising, which would mimic the standard microeconomic model (optimisation under a budget constraint), could be to distinguish the rights to decide on the utilisation, the rights to decide on the transfer and the rights to benefit from the utilisation or the transfer. Take the case of the consumer. The right to decide on the use the asset is formalised by having the quantity of asset as the argument of the whole optimisation problem; the right to decide on the transfer is formalised by the budget constraint, which gives also the valuation of the initial endowment at market price; the right on benefits is formalised by having the quantity in the utility function and the fact that utility function is the optimiser's one; it appears also in the budget constraint, as the revenue from any sale of the initial endowment of the asset increases the optimiser's cash. Note that the three rights apply on one metric only: quantity.

[81] More recently, they have argued that exclusive rights – the right to exclude others from the asset – were also part of the definition of ownership (Demsetz 1998). According to this view, if exclusivity is not ensured, the legitimate right holder cannot exclude others from engaging in conflicting use of the asset or ensure that he will be the sole beneficiary of benefits generated by his investment in the asset. Such a situation would obviously reduce his interest in using, maintaining or increasing the value of his asset.

5.2. PROPERTY RIGHTS AS AN ENDOGENOUS CHOICE ALSO

Economic property rights

By their work, Alchian and Demsetz have brought some key insights in the domain of property rights – the main one being certainly the importance to look at the structuring of property rights. Yet, retrospectively, it is also clear that they did not manage to pass all the conceptual traps inherent to the topic. For example, while they have defined ownership as the holding of utilisation, earning and transfer rights by a same body, we would contend that ownership is not this bundling, but it is the institution that tries to ensure this outcome. The nuance is subtle, but it indicates that Alchian and Demsetz have not fully disentangled the relationship between institutions and property rights. According to us, this is largely due to the fact that they did not pay enough attention to the issue of property rights enforcement. Anyhow, the lack of a well-defined research question and the confusion between positive and normative issues led gradually to a loss of the momentum for the property rights research program.

These last years, this research program has been taken over by a new generation of what we could call 'old property rights economists'; most prominent contributors are Yoram Barzel, Thrain Eggertsson, Douglas Allen and Nicolai Foss. Their work is particularly useful to move towards a synthesis of various propositions that were a bit scattered, including the ones we put forward in our two previous chapters.

A first issue for them has been to disentangle positive issues from normative ones. The fact that several layers of realities are present explains that this challenge has kept property rights economists busy for a long time. Retrospectively, it is also clear that the property rights program has suffered from researchers' personal beliefs and preferences (e.g. the will of someone like Alchian to develop an argumentation in favour of private ownership).

Yoram Barzel is certainly the one who pushed the positive analysis furthest. In his book "Economic analysis of property rights", he defines *economic property rights* as "the individual's ability, in expected terms, to consume the good (or the services of the asset) directly or to consume it indirectly though exchange" (Barzel 1997, p.3). We can quote him. "The economic rights people have over assets (including themselves and other people) are not constant; they are a function of their own direct efforts at protection, of other people's capture attempts, occasionally of formal and informal non-governmental protection, and of governmental protection effected primarily through the police and the courts" (idem, p.4). Barzel distinguishes these economic property rights (an actual outcome) from the *legal property rights*, i.e. the rights as they are established by the law and enforced by the judicial system. "These rights, as a rule, enhance economic rights, but the former are neither necessary nor sufficient for the existence of the latter" (Barzel 1997, p.4). Obviously, legal property rights are key determinants of economic property rights, especially in a constitutional state with effective law enforcement, but the legal-judicial system must be seen only as one enforcement mechanism among others. In this thesis, we will follow Barzel, and equate property rights with actual control.

Two other determinants of economic property rights

We have seen in section 5.1. that property rights are shaped by institutions. Barzel's original contribution is to observe that economic property rights are also the result of own effort of protection.

The best way to understand how the two determinants interact is probably to go back to our traffic light example. If this institution consolidates our property rights on the

assets 'car' and 'body', there is no guarantee that this institution is universally abided by. As a pedestrian, it could be quite dangerous to blindly rely on the traffic lights. It is possible that a driver in a hurry has not noticed us trying to cross the street. In order to protect our physical integrity, as pedestrians, we adopt also prudential rules (e.g. take a few seconds to check that the way is really safe).

As seen in our chapter 3 with Aoki, institutions are state of equilibrium for interacting agents. The choice to comply can be a very rational one. Others are keen on recognizing rights for us when they think that it will increase their own rights (or rights of people they care for) or when they fear that not recognizing them would cost them something (e.g. a sanction by us, the community or an authority). They are indifferent if they reckon that a recognition will not hurt them, and outright hostile when they assess that recognition will imply a personal loss, and in many situations probably unable to give an opinion, given the difficulty to compound the benefits and the costs. While economic agents may have different time preferences, they are able to comprehend the benefits of long-term relationships. Possibility (and practice) of reciprocity enhances recognition of others' rights: in the long run, complying with the institution is optimal. Calculation does not explain everything. A sense of fairness, congruence with personal values and habits (possibly serving as focal points) are other possible determinants of compliance with institutions.[82] Inversely, non-compliers are not embarrassed by moral considerations, do not see habits as binding and assess the gain of not complying as superior to the possible loss.

Our individual rights are also products of our own efforts. As individuals, we can try to reinforce others' respect for institutions, to deal ex ante and ex post with non-compliers or… to infringe ourselves upon institutions protecting others. We can secure our control over 'our' physical assets for example by not disclosing them to others, by setting physical barriers (e.g. a fence, a lock), by occupying them[83], by strengthening our surveillance for example thanks to technology, by creating a threat of sanction for would-be aggressors or by rewarding protection by others… If we have contracted someone, we can secure our property rights over his human assets by accumulating information to monitor his effort, by controlling a resource critical for him to maximise his own property rights on his human asset (Hart 1995;Rajan & Zingales 1998), by inflicting on him a cost in case of deviance from the contract, by foregoing a share of the surplus to obtain loyalty; in the framework of the same contract, we can secure our rights on the promised compensation by delaying its payment or by refusing to pay it. Conversely, the person who has been contracted to perform a task can try to secure his rights on himself by duly delivering the contracted service or by shirking.

We would contend that there is a third determinant of one's property rights over a given asset: the physical characteristic of the asset. The art collector has probably more property rights (against thieves) on the heavy sculpture of 500 kg in his living-room than on the light etching on the wall. With regard to my car, when I park my vehicle on the street, I have more property rights on the engine than on the body parts, as they are more at risk of being damaged by another driver without compensation.

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[82] As seen in our chapter 3, congruence with moral values and a sense of justice helps the enforcement of institutions. Note however, that institutions can be morally 'wrong'; normative considerations do not apply here.

[83] For goods or services with rival characteristics, a trivial way to enforce one's right is to exert it: if I am using my car, no one else can do it.

To reformulate a bit Barzel's proposition, we see that our actual property rights are determined by (1) the physical characteristics of the asset; (2) by others' spontaneous compliance with institutions (i.e. the degree of enforcement of institutions obtained without any action by us) and (3) by our own complementary (conscious or not) effort of capture and protection. We represent these three elements in our Figure 5.

While the physical characteristics of the asset will often be a parameter, the two others offer multiple tracks for a society and individuals to enforce control over resources. These tracks are not exclusive; they ideally reinforce or complete each other. In practice, the solution to protect ones' property rights will often be a reliance on a mix of strategies: I do not communicate about my belongings and there are curtains at my windows; everyone is taught as a child that stealing is bad; the door of my house is in wood and equipped with a lock; neighbours watch at my house when I am on holiday; the rest of the time, my regular occupation deters burglars (who knows, I may have a gun?); the police have the duty to arrest burglars, the judge has a duty to condemn the culprits, and the prison administration need to hold imprisoned those declared guilty.

For each individual and the society as a whole there is therefore a matter of finding the optimal mix of enforcement methods.[84]

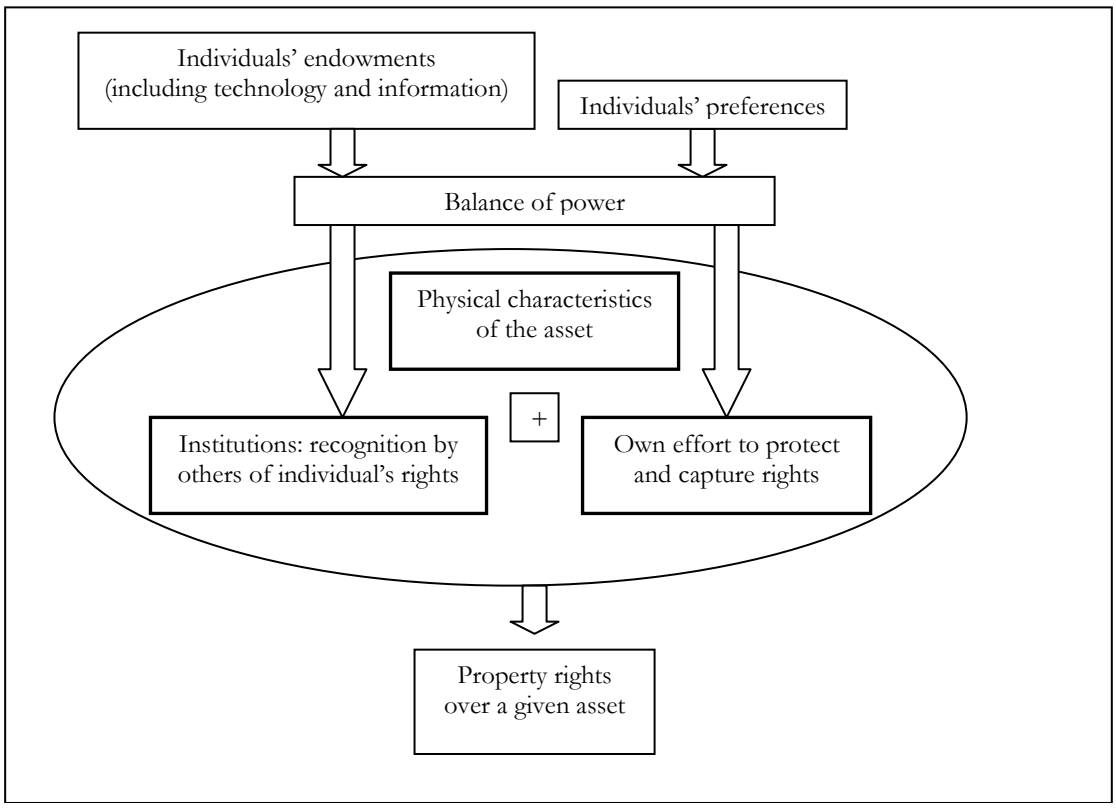

Figure 5: three determinants of property rights

Cost of enforcing property rights

Enforcement of rights is not upheld at zero cost; there are *enforcement costs*.

These costs can correspond to actual expenses (e.g. salaries of persons working in the law enforcement department) or opportunity costs (e.g. wellbeing lost because of the

[84] Things may evolve also over time. At an early stage, violence or at least might may be key to gaining control over some resources (Umbeck 1981). Institutions consolidate and establish the status quo.

choice to restrict interactions with others in order not to disclose one's belongings, time spent on preparing a robbery). Costs can be borne privately (e.g. building outer walls around one's properties) or collectively (e.g. police funded by taxes). Costs can occur ex ante, to search assets (e.g. cost to screen job candidates), to delineate rights (e.g. writing a contract), to monitor behaviours (e.g. a surveillance technology) or to create a credible threat (e.g. cost of maintaining nuclear weaponry) or ex post, to verify compliance (e.g. evaluation of a project), to reward a behaviour (e.g. payment of a prize) or to sanction an infringement (e.g. the whole procedure of hearing, judgement, appeal).[85]

Obviously one can apply the standard economic grid on the way someone's property right is enforced.

A first dimension that impacts the costs of different enforcement techniques is the collective action problems they raise. This problem obviously does not apply to individual effort. Different institutions are not similar in terms of coordination problem. A social norm, by its reliance on decentralised enforcement, is very difficult to change; others require complex legislative systems. Conversely, contracts just require the agreement of contracting parties. This leads to coordination costs of a very different magnitude.

A second dimension that may impact the cost of different enforcement techniques relates to the possibilities of economies of scale or of scope that they offer. A monopolist supplier of third-party enforcement may be the most efficient arrangement for a given territory and population. This reality has led throughout the world to the emergence of rule-of-law states (Barzel 2002).[86] The instauration of legal property rights backed by the State's monopoly of violence greatly enhances enforcement of economic property rights, by establishing standard procedures for settling disputes. Economies of scale and of scope can also be seized at individual level. By building a wall around his property, the individual secure rights on his land, house and the content of the latter.

A third dimension to look at is the interactions between the different enforcement techniques. The relationship can be a complementary one. A strategic couple for sure is the couple 'contract-observation', i.e. an institution + some private effort. Another example of a complementary enforcement technique is the standardisation of commodities (i.e. modification of the physical characteristics of the asset) and enforcement by third-parties (Barzel 2002). But enforcement techniques can also be substitutes to each other to some extent: for example a video surveillance system can to a large extent replace direct observation of customers' behaviours.

It is important to note that all these properties are partly determined by the technology involved (see Figure 5). Technology one controls can help to capture rights from others (e.g. the fast car used by robbers) but also protect one's rights (e.g. a software used by an employer to follow up productivity of his employees). [87]

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[85] This list shows that Ministries of Defence, of Justice, of Interior and of Foreign Affairs and their private sector equivalents (militias, lawyers, security services…) could be fully considered as enforcement costs for a nation.

[86] Yet, as decentralisation shows, there are limits to these returns on scale.

[87] The importance of technology in the determination of economic property rights is quite straightforward in the frame of a principal-agent relationship: if a new technology reduces the cost for the principal to monitor his agent, there will be a de facto reduction of economic property rights for the agent at the benefit of the principal (without any change in the legal property rights). We can make an interesting link with our chapter 3. In some situations, it may be that the agent considers that the initial agreement was only suited for a given technological context and contests the new division of economic rights. Such

All this makes that in a given social setting, the returns (in terms of property rights protection) on US$ 1 invested vary across enforcement methods and across assets. For example, recruiting a lawyer to write or enforce a contract is cost-effective only if substantial resources are mobilised by the transaction(s). Obviously, the ideal situation for a right holder is that his rights are respected by everyone at the lowest private cost. In an honest community, locks are unnecessary. A question then for a community member is whether it is more efficient to invest in educating other community members or to take care himself of his protection.

This example of two options, one which is a public good (the benefits of honesty will probably fall on every community members, whether they contributed or not to the education) and the other which is a private one (the lock benefits only to its owner), reveals that the efficiency has of course to be calculated at societal level. In terms of aggregated enforcement costs, for a certain level of enforcement / economic outcome, there are mixes of enforcement techniques less costly than others.

The reader familiar with transaction cost economics will have noted the great similarity in the argument. The truth is that property rights enforcement applies to any portion of rights that one can hold over an asset, including rights obtained through contracts.[88] This observation reveals that all transaction costs are fundamentally enforcement costs, i.e. costs associated with the transfer, capture and protection of rights (Allen 1999; Allen & Lueck 2003; Barzel 1997; Eggertsson 1996), regardless of whether a market exchange takes place or not. They include the deadweight losses that result from enforcing property rights as well. Throughout the rest of this thesis, enforcement costs and transaction costs are used as synonyms.

Imperfect enforcement as the norm

The fact that property rights are costly to enforce implies a more fundamental question for the optimising agent: is the investment in enforcement actually worth the benefit? One could imagine situations where the private effort needed to secure one's property rights is so high that the individual prefers to abandon his rights or at least to be satisfied with an imperfect or discriminating enforcement. Just think of war situations for example. The question does not apply only to the individual right holders; any economic agent potentially able to contribute to the enforcement of others' property rights must ask himself the same question. This is more in particular a key question for those governing the State, whose speciality it is, to a fair extent, to ensure protection. The police for example has to ration its patrols.

We have seen in our chapter 2 that this issue of enforcement/transaction costs is at the core of several organisational theories. The imperfect enforcement then mainly relates to the imperfection of contracts as instruments to define respective property rights.

Property rights economists like Barzel, Allen and Lueck (Allen & Lueck 2003;Barzel 1997) have put the stress on the fact that assets have usually many *attributes* – think of the many characteristics of a plot of land (moisture, nutrients, incline, sun exposition…) or of a person (colour of the hair, intelligence, kindness, stamina…). While some of these attributes are anecdotal, others are key: it is their services that provide utility to the

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situations have been observed in negotiations between employers and particularly strong unions. This shows again possible discrepancies between the formal state of an institution and the actual one: for one party at least, the real contract is not the written one, but the one that has been practiced so far.

[88] In fact, one could say to that Barzel adds a third branch to the alternative 'make' or 'buy': 'steal'.

consumers and give economic value to the asset. Perfectly enforcing property rights on each attribute would be prohibitively cost. In order to economise on transaction costs, the right holder deliberately places some of the attributes in the *public domain*, i.e. he accepts that some other agents (selected or not by him) will be able to *capture* the attributes, i.e. benefit from them without paying him any compensation.[89] This is what we do when we park our car on the street, leave our house unoccupied during a week-end or write contracts with a limited number of clauses. Through contract clauses, parties agree on behaviours that will be acceptable and those that will be not acceptable by the other party. To the extent that observation or verification on this attribute is feasible and cost-effective, through a clause, parties can exclude manipulation on an attribute as a possible margin for optimisation. Things that are not stipulated as forbidden (or things for which observation by the other party or verification by a third party is too costly) are therefore allowed spaces for optimisation.

The decision by the right holder to abandon some of his rights in the public domain generates a social loss. When the right holder decides to leave the attribute in the public domain, he is fully aware of his cost-benefit calculation (with a negative result), the problem is that he does not take into account the loss at societal level. There is indeed no mechanism for him to internalise the social benefit. Indeed, if he leaves the resource in the public domain, it is because of his incapacity to trade it. The fact that the resource is captured by someone else ensures that it is not fully lost, the problem is that the capture is done by the economic agent with the lowest private capture cost. This agent is not necessarily the one who values the service of the asset the most. [90] Sometimes, the capturer will still be able to trade what he has captured (e.g. pilfered drugs), but this option is clearly impossible if the capture was about the attribute of the service of an asset (e.g. quality of the medical consultation to Mrs X, pro-poor character in the delivery of services). As shall be developed in our subsequent chapters, our hypothesis is that such losses are massive in public health systems in low-income countries.

In the real world, imperfect enforcement of rights or partial *exclusivity* is therefore the norm more than the exception.[91] The degree of enforcement will vary across attributes or assets. It will also vary across other individuals (e.g. a company can achieve (close to perfection) the exclusion of non-employees from using its photocopy machine for private purposes; with its employees it is much less successful).

While incomplete enforcement of rights is unavoidable, it is easy to see that some changes in the environment (e.g. a new monitoring technology) can cause a formerly unknown or neglected attribute to gain economic value; given the presence of the attribute so far in the public domain, this may provoke a dispute; this will not be the case if legal rights are clearly delineated.

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[89] This is in fact one of the standard explanation for incompleteness of contracts. Barzel, Allen and Lueck derive it from measurement costs. Williamson and others derive it also from bounded rationality and uncertainty.

[90] If the benefit is too low, no one will even want to capture it. Economic loss really appears when there is a major discrepancy between the value given by the capturer and the economic value for the society. Conversely, one could imagine the situation where an economic agent wrongly assessed what is valued by the society. If the capturer is better informed (e.g. because he is closer to the market), his capture (to the extent that the asset is re-sellable) could be efficiency enhancing. However, if the capture has been done through theft, it is obvious that this is a source of future disincentive for the original right holder.

[91] Someone holds a right on an asset to the extent that he is able to enforce it or equivalently, to the extent that he is able to exclude others from it. This is tautological. See also our footnote 95.

5.3. OUR APPROACH

Economic property rights versus legal property rights

There are two possible views on property rights: a view which assumes that property rights are fully determined exogenously to the individual and another view which assumes that property rights are the outcome of exogenous forces and endogenous efforts. The second view is Barzel's one. Most organisational economic theories adopt the exogenous view (but for the margin that the individual is allowed to optimise, see below).

At a given point of time, in a given social context and for a given asset, the legal and economic property rights held by an individual may not overlap completely (see Figure 6). For some given uses of the asset, it is very possible that because of some enforcement costs, the right holder prefers to leave some economic rights in the public domain. For these uses, the economic rights are less than the legal rights. Conversely, while the law (or the society) may forbid some uses of the asset, because of the difficulty for the society to enforce these restrictions (e.g. difficulty to observe utilisations), the right holder may have more economic rights than legal rights. At the point of time that the practices shaping the economic property rights are expected by most actors, economic property rights are institutionalised.

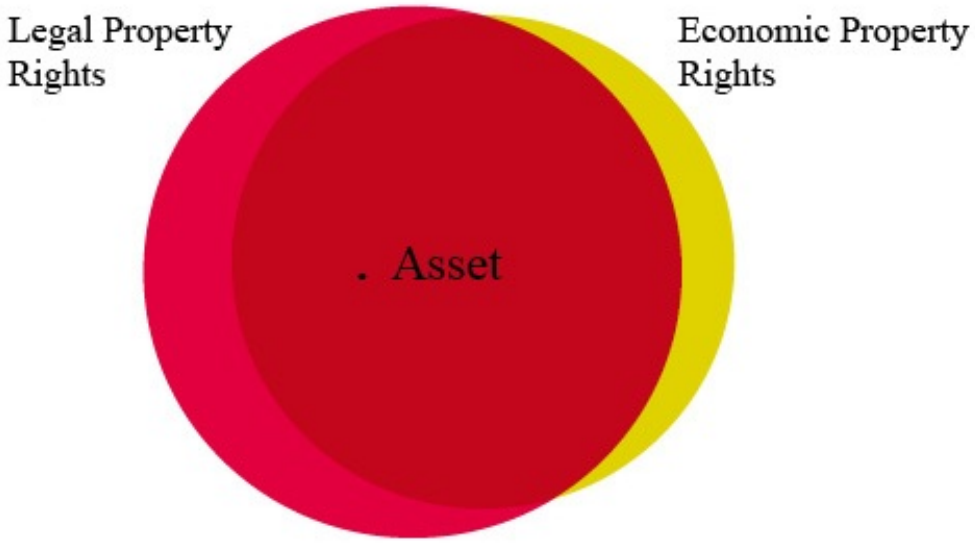

Figure 6: legal and economic property rights over an asset

Our contention is that in low-income countries, whereas citizens have sometimes quite extended legal property rights as regard health services, their economic property rights are much lower.

There is of course first related to the fact that health services are rationed, due to the scarcity of public resources. A citizen's economic property rights are obviously affected by the total amount of resources available and the consumption behaviour by other citizens. While this is a major source of discrepancy between legal and economic

property rights in many low-income countries, it is not the main focus of this dissertation.

Our original contribution is at a second level. We believes that a discrepancy remains even for a citizen living close to a public health centre that offers free health care and has its pharmacy full of drugs. This discrepancy takes its source in the costs for the citizens to enforce their property rights. For some attributes, these costs are so prohibitive that the related rights fall in the public domain. Many of these rights are captured by the health staff.

A step towards a framework

In this chapter, we have made a step towards our framework. We have clarified the concept of property rights and we have developed how property rights are established; Figure 5 gives us the embryo of the framework that we will complete in the next two chapters.

One can already foresee some of the powers of our framework. It can help us to better understand the causes of some problems encountered by health systems. Due to the unfavourable economic environment, there has been a progressive erosion of some institutions (i.e. a drop in compliance) and the progressive adoption of new practices by health personnel (Ferrinho & Van Lerberghe 2000) that have restrained citizens' property rights.

The framework can also help us to identify tracks for action: we have to find a more efficient mix of 'enforcement through physical characteristics – enforcement through institutions – enforcement through individual effort'. More particularly, our contention is that there exist institutional arrangements that would require less complementary private enforcement effort by the households.[92] We believe that recent technological changes are particularly interesting sources of efficiency gains at the level of the enforcement costs.

Our economist readers may wonder how different organisational theories relate to our framework. We suspect that the framework can help to better appreciate how economists have so far handled the reality of property rights. Most authors have not been indeed always explicit in this respect. Our interpretation is that most organisational economic theories assume perfect exogenous enforcement at a nil cost on all margins but the one which is opened to the optimisation of the interacting agents. Grossman-Hart-Moore models assume for example that ownership (a legal institution) is enforced at a nil cost; principal-agent models assume perfect enforcement by a third-party of principal's obligation. Interestingly enough, there are also some recent models relying on institutions without a legal back up (Rajan & Zingales 2001).

The rationale of such approaches is obvious: by excluding optimisation on all margins but one, the economist is able to understand how institutional arrangement can contribute to find an equilibrium on the open margin. On this margin, the mutual efforts to capture economic property rights are playing fully to a point of equilibrium which satisfies different parties given the existing balance of power (formalised often by exit options). Our next chapter will present some of the main findings of contract theory in this respect.

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[92] As far as the health sector is concerned, we have not found many ways to reduce enforcement costs by affecting physical characteristics of the assets under transaction, besides those that are already in place (e.g. control of the quality of the drugs through close monitoring before their distribution to retail pharmacies).

The issue of the structuring of property rights in the framework

An interesting question is how Alchian and Demsetz's propositions with respect to partitioning, bundling and ownership integrate in this framework.

Partitioning is easily made in the standard exogenous framework. It suffices for the right holder to write a contract detailing the portion of rights which are transferred in the transaction. A limit of this view however is that it does not give many clues on the feasibility and relevance of different partitioning. In this respect, our framework looks powerful, as it provides some insights in terms of feasibility and appropriateness of a given partitioning. In this framework, the issue of enforcement is indeed fully accounted for in the decision of the partition. As the enforcement of a right may have an impact on the enforcement of other rights, enforcement costs may explain many bundling of rights that are observable in real life.

Another early proposition by Alchian was about the importance to gather utilisation, earning and transfer rights in the same hand, as these rights are complementary to each other. In this respect, the EPR framework assumes from the start that the individuals spontaneously try to capture the rights that are the most interesting for them. If they have no legal right to trade the asset and because of that miss some earnings, they will try to organise transaction under-the-table. Corruption, embezzlement, pilfering are very rational in our framework. They are just spontaneous reconstruction of structuring that did not accommodate best the advantages of the right holders. Similarly, the framework gives indication how to enhance someone's control over resources: by creating barriers to utilisation (e.g. a password to access a medical equipment), to transfer (e.g. adopting a specific packaging to track down an item on the black market) or to earnings (e.g., an accreditation to be eligible to a scheme) one may deter attempts of capture by others.

We have seen that Alchian and Demsetz have not been successful in their handling of the ownership concept. In our framework, it is an institution among other ones, which thanks to legal back up tries to clearly assign property rights over an asset; furthermore, it tries to favour a coherent bundling of rights over the asset, i.e. a bundling which sets incentives supporting social efficiency.[93] Note however that there is no guarantee that it fully succeeds in this endeavour (cf. the multiple attributes of assets and attempts of capture by others and the problems of externalities). The framework allows also to better situate Demsetz's so-called exclusive right (Demsetz 1998).[94]

The function of institutions (redux)

The role of institutions in an economy is now clear: they are key contributors to property rights structuring and enforcement. Their originality lies in a paradox: while they assume

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[93] Note that it is possible to imagine other institutional arrangements that would produce quite a similar bundle of rights that the one establishes by ownership. This has been the track taken by China in its transition from socialism to market (Nee 1992, Weitzman and Xu 1994).

[94] The fact that others are excluded from engaging in conflicting use of the asset or from benefiting freely from the asset influences the incentives for the right holder. The legal institution of ownership comprises exclusivity as a component: to a large extent, it is this exclusive right that gives to legal ownership its added value in terms of enforcement power, as it substitutes for exclusion of others by private force. Consistently, the strictly legal nature of exclusive right is most remarkable with all legal dispositions on exclusive right arrangements (e.g. patents, copyrights, licensing). Such legal arrangements are designed for assets that could not really be protected by other means than the law (everybody can print a Mickey Mouse on a T-shirt). But there is no 'economic exclusive right' (as there is no 'enforcement right'). We would hypothesise that Demsetz's confusion stems from his more restrictive definition of transaction costs ('the costs of coordinating resources through market arrangements') and a possible confusion between legal and economic rights.

that others are potentially interested to capture our rights, they rely on their cooperation. The paradox is only apparent, as others are not a homogenous group.

Institutions characterise rights one has upon others. To someone's right corresponds an obligation or an interdiction for others; institutions restrict others' range of manoeuvre. In the framework of individual optimising agents, an institution determines the margins for optimisation.

Institutions are partial substitutes for other enforcement techniques such as private behaviours, physical might or technology, which do not rely on cooperation. Institutions however request, to exist, that some coordination problems are solved; by seizing returns on scale or on scope, they are potentially cost-saving.

The institutional track taps a key mechanism to seize returns on scale in property rights enforcement: the legal and judiciary systems. Well-functioning legal and judiciary systems allow to significantly consolidate economic property rights. They do so by providing an in-kind subsidy for the legitimate right holder, which dramatically reduces his enforcement costs to such a point that other claimants are not competitive and cannot contest his rights. As it is well known, if utilisation, earning and transfer rights are secured, economic agents have much stronger incentives to invest in assets.

Having said this, one should not overestimate the substitutability between enforcement through institutions and enforcement through private effort. As real life proves, the key is in fact to find the best complementary mix of institutional enforcement and private enforcement: the right mix of cooperation and defiance, in a way. The problem has its roots in costs required to enforce property rights; because of this cost, economic agents leave some of their rights in the public domain. This can be a major source of social inefficiency. Some couples of 'institution-observation' mitigate this loss better than others. This will be the main topic of our next chapter.

A summary

This chapter has focused on clarifying the process through which institutions structure property rights. We have organised our scrutiny in two sections.

In the first section, we have presented some early key insights brought by Alchian and Demsetz. We have shown how institutions shape property rights. We have also touched the important issue of property rights structuring. In this respect, economic agents are spoilt for choice: the multiuse of an asset combined with the multitude of human beings makes that a myriad of options exists in terms of structuring. The challenge for individuals and the society as a whole is then to identify the best structuring. Bundling decision rights and earning rights is particularly powerful.

It is not incorrect to present Alchian and Demsetz propositions as belonging to the exogenous approach to property rights enforcement. Along this approach, all property rights but the one subject to optimisation are assumed exogenously enforced. This approach is the standard one in organisational economics. In our second section, we have introduced a more extensive approach to property rights enforcement. We have adopted the distinction made by Barzel between economic and legal property rights, and focused our attention on the former. We have clarified what determine these economic property rights. We have shown that someone's control over resources is the result of forces exerted by others and by himself. Institutions characterise the extent to which this person benefits from others' cooperation with respect to his control. However, because of conflicting interests, this cooperation from others will never be complete. Individuals have therefore to develop complementary private strategies to secure their control over resources.

The issue for the individual agent then is to decide how much private effort he should allocate to enforcing his rights. Whatever the route(s) taken, enforcing property rights is indeed costly. A particular issue is the fact that assets (or services attached to them) have multiple attributes. Perfectly enforcing rights on each attribute would be prohibitively costly. In his pondering of how best to invest his enforcement effort, the right holder has to decide on which attribute he wants to secure strong control and which ones he is ready to abandon in the public domain. In the framework of a contractual relationship, this amounts to determining the clauses of the contract including the rule of remuneration and the monitoring costs they entail. Some institutional arrangements mitigate the unavoidable economic loss better than others.

As shall be argued later in this thesis, our analysis is that it would be possible to find more efficient mix of enforcement techniques for health systems of many low-income countries. Citizens and their agent, the Ministry of Health, have abandoned in the public domain a massive amount of their rights on attributes of assets mobilised in the production of health services. Most of these economic rights have been captured by health staff, yet for a benefit much lower than the real economic value of these attributes. This is a major inefficiency, which overtime, got institutionalised.

CHAPTER 6: INCENTIVES

Our previous chapter was dedicated to identifying the contribution of institutions in the structuring of property rights. This new chapter address the next link in the chain: how property rights structuring sets incentives to economic agents and subsequently, determines their behaviours.

This chapter is structured around three sections. In the first section, we introduce a few concepts. One of our concerns is to prevent possible misunderstandings for non-economists. 'Incentive' has indeed a much broader meaning in economics than it is usually thought by people from other disciplines.

In our second section, we present some key findings of contract theory with respect to incentive alignment, the narrow perspective we adopt with respect to individuals' motivation. We cover first the employer-employee relationship. Then, we look at the possible strategies for a government to align social service providers. We consider different options: in-house production (i.e. public providers) and contracting out (to private profit or nonprofit providers). We highlight how this theoretical work echoes significant policy changes in high-income countries with respect to the provision of social services such as education, health or social assistance.

In the third section, we wrap up main lessons for our study of public health care organisations. We adopt mainly an illustrative approach.

6.1. INCENTIVES: THE ECONOMIC PERSPECTIVE

Incentives: generalities

Before heading for more complex questions, it is important to clarify what economists mean by the word 'incentive'. Often, when an economist talks about incentives – for example, when he calls for their revision, it raises concerns among his non-economist colleagues: the immediate understanding or suspicion is more often than not that an economist sees money as the only motivator of human beings.

Surely, in most of their models, economists assume that the economic agent behaves like a *homo economicus*, i.e. take rational decisions on scarce resources in a way that maximizes their well-being. Yet, this basic observation already serves as a reminder that for economists, scarce resources are means, not goals. Furthermore, economists do not believe that goods and services traded on the market are the only explanatory variables determining the well-being of the economic agents. Yet, it is correct to say that in most of their models, only variables with a pecuniary value are included in the agent's utility function (e.g. leisure which is valued according to its opportunity cost on the labour market).

How does the concept of incentive fit in such a framework? It is well known that for economists, an agent has an *interest* to behave in a certain way if the marginal (expected) benefit/utility that stems from the behaviour is superior to the marginal (expected) cost induced by it and if this ratio is superior to ratios obtained with alternative use of the resources. Our proposition would be to say that an agent – let us call her Jane – has an *incentive* to carry out a behaviour if the above calculation takes place in an interactional set-up, i.e. if the cost or the benefit are at least partly determined by the behaviour of at

least one other economic agent – let us call him John. An incentive is then a threefold relative concept: it concerns an individual with some specific endowments, it is about a specific action (or inaction), and it takes place in a specific interactional set-up (including a point of time).

The influence by John can of course take many different forms; John has not necessarily affected Jane's cost or benefit purposefully (e.g. competitors may reduce respective benefits in their quest of profits); he may not even be aware of the impact of his behaviours on her. But John may also be very aware of how Jane's behaviours affect his own wellbeing or achievement of goals and be willing to develop a strategy to mitigate a bad impact; he can purposefully try to *align* the incentives Jane is exposed to with his own objectives. Institutions, through their property of structuring property rights on resources, are key tools in this respect. Fundamentally, aligning Jane's incentives on John's objectives is transforming her property rights in such a way that she at least partly internalizes the costs and benefits that her behaviour induces upon him.

Before focusing our attention on this alignment issue, let us first remark that with our broad definition of an incentive, we encompass in fact most of economics. Only the characteristics of the problem to solve – especially the related market imperfections – and the profile of the economic agents (their number, endowments or property rights over some specific resources, preferences and objectives) change across models.

The specific question of how to align an agent's incentives on another's objective – the track followed in this thesis – is a more recent field of research. As far as our research question is concerned, we find it useful to distinguish two different levels of incentive alignment problems. In the public health sector, the first level would correspond to the one between the government (or its partners) and the public health care organisation manager. The second level is the one between the health care organisation manager and the organisation's suppliers, and more particularly its workforce. Let us discuss these levels in sequence. For convenience, we will first discuss the case of aligning an individual employee on the objectives pursued by her employer; only afterwards, the case of the manager will be examined. It is appropriate to remind the reader first of some general facts on what may motivate human beings.

Intrinsic and extrinsic motivation

Experts in human resource management distinguish two kinds of motivation: the so-called intrinsic and extrinsic motivation.

Jane's motivation to undertake behaviour A is said *intrinsic* if conducting behaviour A is valued in itself by her. Jane takes care of her father, just because she loves him. A motivation to undertake behaviour A is said *extrinsic* if conducting behaviour A is instrumental to achieve some goal distinct from behaviour A. This is for example the case of the nurse taking care of Jane's father. This work allows her to earn an income allowing to purchase products on the market.

By definition, it is impossible for others to set 'intrinsic incentives' for someone. A corollary is that there is no such thing as 'intrinsic incentives': incentives are always extrinsic. This does not mean that incentives are the only tool in others' hands. John can also try to modify Jane's preferences in such a way that she sees intrinsic value in behaviours valued by him. This can be achieved by education, socialisation, indoctrination, advertisement, leadership (and role model)… Good managers know that a key strategy to obtain the maximum from their human resources is to make them adhere to the objectives of the organisation, for example by developing a corporate culture.

Incentives are susceptible to action by others. This is clearly the postulate behind any effort to align incentives. Many incentives are imaginable. They can apply to behaviours to encourage (the 'carrot', e.g. a prize, a higher price, a subsidy in kind, a tax exemption, a guaranteed gain) or to (concurrent) behaviours to discourage (the 'baton', e.g. a fine, a tax, public opprobrium). For example, in order to encourage uptake of healthy behaviours, the government can subsidize part of the costs faced by the users to participate in a preventive screening program (e.g. reimburse the transportation), increase the benefit of the program (e.g. improve the accuracy of the screening test) or increase the cost of concurrent behaviours (e.g. tax unhealthy behaviours or make the screening compulsory and fine the defaulters).

In one's effort to affect someone else's behaviours, it is preferable to adopt a framework which can encompass the sources of both extrinsic and intrinsic motivation.[95] Indeed, there can be interactions between both motivation routes (Kreps 1997). Psychologists have alerted human resource managers for quite a while that by setting an incentive scheme, one can undermine the agent's intrinsic motivation (Deci, Koestner, & Ryan 1999) . An early economic contribution in this field was Richard Titmuss' study of blood donation (Titmuss 1970): payment of a monetary compensation to donors can reduce their willingness to donate their blood. Bruno Frey has broadened the study of such phenomena and popularised the expression of the extrinsic incentives' *crowding-out of* intrinsic motivation (Frey 1993;Frey & Oberholzer-Gee 1997). He has for example argued that in a principal-agent relationship, tighter monitoring will be perceived by the agent as an indication of distrust; if an implicit contract exists between the principal and the agent, the agent may react by reducing her work effort (Frey 1993). Yet, one could imagine also the contrary: a situation where a scheme working on extrinsic motivation reinforces an intrinsic motivation. Jane used to take care of her old father for free, the fact that now the government supports her in this effort (e.g. encouragement by a welfare worker) makes her feel recognised in her daily effort and thus induces an even better performance (e.g. pay attention to dimensions she neglected before). Similarly, there are a lot of laws punishing behaviours that many of us dislike anyway, but which may help a few people who are more vulnerable to bad influences.

In fact, the interaction between intrinsic and extrinsic motivation is largely an empirical matter. In this respect, even if experimental, theoretical and empirical economists are increasingly interested in the topic (Benabou & Tirole 2003), researchers from other disciplines (e.g. behavioural psychology) are probably better equipped to deal with the issue. Let us just note at this level that the nature of the incentive probably plays a role: some extrinsic incentives (and the monitoring that their enforcement entails) are more respectful of intrinsic motivation than others.

If the existence of non-material motivators was not denied by organisational economists (cf. for example, the work by economists studying the nonprofit organisations), their study through analytical means is very recent (Akerlof & Kranton 2005;Ellingsen & Johannesson 2007). It is correct to say that so far, mainstream economics has mainly dealt with the study of extrinsic motivation. Most microeconomic models assume agents' preferences as a given and focus their attention on costs and benefits attached to behaviours. For example, principal-agent models postulate that effort is a source of disutility for the agent that must be compensated by the principal.

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[95] A fourth way for John to influence Jane's behaviours is to increase her knowledge about the risks and opportunities (including her legal rights) related to different behaviours. This is largely what empowerment is about.

All the theories reviewed in our chapter 2 deal with incentives. We will adopt the same focus: in our framework, we will assume preferences as exogenous variables; this means that we exclude from our field of analyses strategies trying to modify them (e.g. education, advertisement).

Most organisational economists would probably agree today that leaving the intrinsic motivation aside is a risky assumption in some situations. If there are high interaction effects between intrinsic and extrinsic motivation in these situations, the theory or model could have limited predictive power.

Conversely, denying the importance of extrinsic motivation in professional activities would be absurd. First, everyone has needs to cover (e.g; food, shelter). Second, there are always unpleasant tasks we prefer to shift to others or to be compensated for. Third, as individuals engaged in social interaction, we are accountable to others. A doctor may love her job and by altruism, be ready to dedicate her time to her patients, even for a low salary; it remains that her husband will swiftly remind her that the household has some costs to cover. Incentives are key to human coordination; they will receive our attention from now on.

Intensity of incentives

Before going further in our study of incentives, we need first to introduce the notion of *incentive intensity* or *power of the incentive*. Williamson has defined incentive intensity as "a measure of the degree to which a party reliably appropriates the net receipts (which could be negative) associated with its efforts and decisions. High-powered incentives will obtain if a party has a clear entitlement to and can establish the magnitude of its net receipts easily. Lower-powered incentives will obtain if the net receipts are pooled and/or if the magnitude is difficult to ascertain" (Williamson 1996, p378). Input-based payment (e.g. a salary, a yearly line-item budget) are low-powered incentives. Output-based payment (e.g. piece rate, fee-for-service, price) are high-power incentives.

One can note the link between this notion of incentive intensity and the one of property rights structuring seen in our previous chapter. Obviously, if an agent holds alone both the decision rights and the earning rights on an asset, he is exposed to high-powered incentives for all the actions he is allowed take on this asset. This is for example the situation of the owner-manager of a sole proprietorship company. Applied to a specific behaviour – or to be consistent with our previous chapter, to the attribute of a service of a human asset, incentive intensity measures the extent to which the person holding decision rights on this attribute also holds the related earning rights.

More generally, as mentioned in our introduction to chapter 2, economists have been busy for decades with the study of a system relying exclusively on private ownership and high-powered incentives: the market and price system. In the mid-twentieth century, two economists, Kenneth Arrow and Gérard Debreu, managed to mathematically demonstrate Adam Smith's proposition of the "invisible hand". They have shown that if there is no market imperfection, the outcome of the exchanges between economic agents is efficient, i.e. it is impossible to find an alternative allocation of resources which would make someone better-off without making someone else worse-off. Said differently, if the society lets individual agents fully appropriate the net benefits stemming from their decisions on their own assets, the final outcome is the most efficient one from the society's perspective.

Reality is of course very different from the fictional world adopted in formal general equilibrium economics. This is particularly the case when there are transaction costs: attributes of assets or of their services cannot be perfectly measured. The exchange of

property rights on these attributes is then organized on variables which are proxy measures of these attributes and price theory is misleading. Studying alternative options to the high-powered prices is in fact what has kept organisational economists busy for several decades. The firm by its practice of low-powered incentives could be seen as an arrangement to protect some activities and transactions from the perverse effects of high-powered incentives when there are enforcement costs.

6.2. ALIGNING AGENTS WITH THE OBJECTIVES OF THE PRINCIPAL

The employer-employee relationship

The key issue for any principal is to get his agent taking decisions (if she has some decision rights) or undertaking an effort in line with his objectives. If the principal is an employer and the agent an employee, key instruments to obtain alignment are: (1) recruitment, (2) intensity of the incentive, (3) job description and (4) ownership of complementary non-human assets.

Recruitment

A first opportunity for obtaining such an alignment is at the recruitment stage. Individuals have heterogeneous preferences. It is very possible that in the whole society, there are some individuals with preferences much more in line with the organisation's ultimate goal (Besley & Ghatak 2005) or the manager's vision on how to reach these goals (Van den Steen 2005). Such matching of preferences between the principal and the agent increases organisational efficiency as it taps intrinsic motivation, which facilitates delegation, reduces need for high-powered incentives or monitoring, reduces occurrence of influence activity (i.e. lobbying) within the organisation (Van den Steen 2004).

Doing such a matching is of course a key concern for the human resource department of any organisation, but it takes also place spontaneously by the selection done by the job candidate herself. This sorting effect comes from the candidate's preferences in regard to the organisation and the sector of activity, but may come also from the incentive scheme adopted by the organisation. Workers who can expect to benefit more from an output-based payment scheme will join organisations or positions where such a remuneration systems is practiced; others will avoid them (Lazear 2000).

The co-existence of public, private for profit, and private non profit sectors in an economy will contribute to such a sorting. This may stem from the fact that they are active in different industries (something which does not apply anymore in the health sector in most countries), pursue different goals and – it is partly related to the other reasons – from their adoption of different institutional arrangements.

A key characteristic of the public sector is to offer quite extended job security to its staff. Most civil servants have a well-protected status. When restructuring a department, the government has often the legal obligation to reallocate them to another position. Rules adopted to protect civil servants' loyalty to the State and empower them in their relationships with politicians render the dismissal of an individual also difficult. Similarly, to avoid patronage, career progression can be quite formalized and disconnected from individual performance. This eventually leads to very low-powered incentives, as individual performance is neither rewarded nor sanctioned.

In the private for profit sector[96], managers and employees are exposed to more powered incentives, and more generally, to economic risk; the performance of their organisation, which is partly depending on business cycles, can indeed have a direct impact on their employment. As the final owner is much closer to the manager and the manager is often exposed to high-powered incentives, the latter will be less tempted to abuse his power to obtain private favours from his employees; conversely, he is interested to obtain the best from them. High-powered incentives, through bonus schemes or career prospects, will be more present than in the public sector.

Organisations in the private non profit sector pursue very specific goals, either for their members (e.g. a club) or for some beneficiaries (e.g. a humanitarian NGO). Clubs will attract people interested by the service to the members (e.g. practicing a sport). Nonprofit organisations (NPO) committed to some beneficiaries will attract people identifying themselves with the goal pursued by the organisation and/or people valuing to get involved in the tasks to achieve this goal.

The private and public sectors may also value different skills. Private (profit and non profit) firms appreciate and reward initiative and creativity; public bureaus may be more interested in agents complying with the rules and hierarchy's orders. Even if scientific evidence is very limited in this respect (Hartog, Carbonell, & Jonker 2002), the civil service is commonly depicted as attracting more risk averse and less creative people.

Incentives in the employer-employee relationship

Even if the sorting effect has played, it remains that the agent's preferences will diverge to some extent from the principal's one. The manager would for example appreciate to get the most from his personnel for the lowest cost. The employee may have the reverse view.

Given this agency problem, the dominant practice of the fixed salary within organisations, i.e. a low-powered incentive, is certainly enigmatic. Contract theory has been particularly helpful in proposing possible explanations.

Low-powered incentives and risk aversion

One could nearly equate the first justification for low-powered incentives – agents' *risk aversion* – with the start of contract economics. We have seen in chapter 2 that this explanation was brought out in the frame of contracts between landowners and tenants (Stiglitz 1974). Thanks to a principal-agent model, Joseph Stiglitz explained the share cropping contract as a trade-off between the requirement to induce farmer efforts and the farmer's demand for some insurance against possible bad harvest. Such an arrangement is socially superior to a higher powered incentive (e.g. the tenant pays a fixed rent for the land and appropriates the whole revenue from the harvest) and a lower powered one (the farmer is paid a fixed wage by the land lord who fully retains the harvest revenue). For about 15 years, contract economists tried to explain every phenomenon by such a trade-off between incentives and insurance (Gibbons 1998). The only explanation for the pervasive practice of salaried work in our societies was the presumed high risk aversion of agents.

[96] The private for profit sector remains a very mixed bag: it goes from the local bookshop to General Motors. There is also sorting within the sector. People who value a lot autonomy will prefer to be self-employed (Van den Steen 2007).

This vision was completely changed after the publication of several models demonstrating that low-powered incentives could be the optimal scheme even when the agent is risk neutral (Baker 1992;Holmstrom & Milgrom 1991;Lazear 1989b).

Low-powered incentives and multi-tasking situations

The starting point was to observe that often the agent is situated in a *multi-tasking* set-up, i.e. a situation where the principal requests her to perform different tasks; for example, to vaccinate children and to deliver antenatal care consultation or to be kind with patients and be efficient in the use of scarce resources. While there may be complementarities between tasks (e.g. vaccination and growth monitoring), tasks are often substitutes, i.e. in competition for the same scarce resources (e.g. the time of the health worker).

As already identified by Williamson (Williamson 1985), this multitasking set-up raises problems in terms of contract. Indeed, in such a set-up, *performance*, i.e. what a principal tries to get from his agent, is multidimensional. However, most of the time it is impossible for the principal to design a performance pay scheme capturing all these dimensions; this is possible only for the dimensions easy to measure. If a high-powered incentive scheme is applied on these few measurable dimensions only, the principal will get what he pays for; this may deviate to a substantial extent from what he actually cares about. For example, a piece rate contract will lead to a high production of outputs, which is not equivalent to a great quantity of outputs of high quality. Holmström and Milgrom have stated as a general rule that "the desirability of providing incentives for any one activity decreases with the difficulty of measuring performance in any other activities that make competing demands on the agent's time and attention" (Holmström and Milgrom 1991, p.26).

Conversely, when the desired performance is quite measurable, high-powered incentives are a possible tool; they do not only allocate risk and encourage hard work, but also direct the allocation of the agent's attention among her various duties. Noteworthy, in a multitasking set-up, there are two ways to encourage a given action: to reward the task itself or to lower its marginal opportunity cost by removing or reducing the incentives on competing tasks. For example, one can encourage health centre staff to immunize children by paying them a per diem for each outreach activity or by reducing their earnings from concurrent activities such as curative consultations (if user fees).

Thanks to their multitasking set-up, Bengt Holmström and Paul Milgrom have identified two other complementary instruments for the principal to get its agents aligned on its definition of performance.

The first one is *job design*. The contract can be quite precise on the tasks that the agent must do and those she cannot do. For example, most employment contracts have a clause of exclusivity in terms of employers (e.g. the government-employed doctor is not allowed to run his own private clinic). The purpose is to limit incentives set by others on the agent. More generally, employment contracts restrict activities permitted on the job in order to exclude tasks with private value only (e.g. surfing the internet, accepting under-the-table payment). Fundamentally, this consists in attaching a cost (e.g. a fine or even dismissal) to the undesired tasks.

The ability of the principal to write the job descriptions allows him to split tasks among different agents: for example, one agent (remunerated with a fixed pay) will be entrusted all the tasks difficult to measure and another agent (under a high-powered incentive) will be entrusted one task whose performance is easy to measure. Complementarily, outside activities will be more severely restricted for the first agent than for the second one. This situation is easily illustrated by a comparison between

secretaries and sales men working for a same principal: secretaries earn a fixed wage (potentially counted per hour) and are supervised through process indicators, while the sales men have a high-powered payment and are free to organise their time as they deem optimal. However, if the sale force is expected to contribute to other dimensions of firm performance (e.g. to gain customers' goodwill), the best strategy for the principal will probably be to lower the power of the incentive.

The second instrument for influencing behaviours in respect to the different tasks is the *ownership of complementary non-human assets*. In their 1991 paper, Holmström and Milgrom explore more particularly the case where the unmeasurable dimension of performance is how the value of a productive asset changes over time. The model shows that when the principal owns the asset, incentives will often be low-powered in order to prevent employees from abusing the asset or neglecting asset maintenance. Conversely, if the agent owns the asset, high-powered incentive will be preferred (in order to mitigate the problem of the agent using her asset too cautiously or devoting too much attention to its care). This supports the observation that low-powered incentives are offered to employees in firms versus a price to independent contractors.[97,98]

Low-powered incentives and obedience to the authority

In a very recent paper, Eric Van den Steen has formalised another reason for low-powered incentives within the firm (Van den Steen 2007). The idea could be reformulated as such: in some firms, obedience to the authority is the key (e.g. the army, the migration department, big bureaucracy). Accepting the introduction of high-powered incentive (or the pursuit of private objectives) in such firms would lead to a conflict between the manager and the employee each time that the employee disagrees with the manager on the best action to reach the (high-powered remunerated) goal. On the contrary, if the employee is paid a fixed wage and has no private objective, then he is ready to follow the principal's order, even when he believes that these orders are the wrong thing to do. Low-powered incentives and absence of strong private goals would then be key mechanisms to ensure obedience.

Low-powered incentives in repeated games

Whereas fixed wage is indeed a low-powered incentive in a one-period model, it is not necessarily the case in a several-period model: good performing agents can be rewarded by a salary increase or even be promoted. Such considerations led contract theorists to study how incentives can be established in dynamic settings. The starting point was a paper by a property right economist, Eugene Fama, who argued that in a dynamic perspective, market forces often attenuate moral hazard problems. According to him, employees, and managers in particular, have a strong incentive to perform given their

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[97] Note that this particular case of the model is a step towards a theory of the firm (i.e. the identification of the determinants of a firm's boundaries): agents are more likely to be independent contractors when they are not too risk averse, when the variance of asset returns is low and when the variance of measurement error in other aspects of the agent's performance is low. This step was in continuation of previous efforts by Holmström to formalise Alchian-Demsetz's view of the firm as a solution of moral hazard in teams (Holmstrom 1982b) and preceded other ones leading to a vision of the firm as an incentive system (Holmstrom 1999;Holmstrom & Milgrom 1994).

[98] One can also play the logic the other round: to parameterize the multitasking contract and to endogeneize the ownership of the complementary asset. In the mid-nineties, in its Chad project, MSF-B decides to make a contract with health centre head nurses on the ownership of the motorcycle they were using for their outreach work (task A). As their effort in maintenance and careful drive (task B) was unmeasurable by the NGO, the NGO promised them that the motorcycle would be theirs after three years. See also Allen and Lueck for similar issues in agriculture (Allen & Lueck 2003).

concern for securing a good reputation on the labour market (Fama 1980). *Career concerns* – the effect of current performance on future compensation – would then set (implicit) incentives strong enough to make high-powered incentives less necessary. The intuitive idea behind is that time allows a longer series of observations (by the potential recruiters) and thereby more accurate inferences about unobservable behaviour.

A strand of contract theories has explored this question, including the possible interaction between such implicit incentives arrangement and the explicit ones provided by the compensation contracts (Dewatripont, Jewitt, & Tirole 1999a;Gibbons & Murphy 1992;Holmstrom 1982a). For example, with their model, Gibbons and Murphy show that if the career concerns are weak (their case is a situation where the employee is close to retirement), high-power incentives may be necessary to keep the employee motivated to perform.

Career concerns models have also allowed to further understand the potential of job design for getting staff and intermediary managers in particular motivated. Specialisation of individuals around a limited number of tasks leads to more effort because it allows the employee to send clearer signal on her individual performance, which may be rewarded later by an employer (Dewatripont, Jewitt, & Tirole 1999b). Noteworthy however, the signal to produce may partly divert from what the current employer values (e.g. a young academic who would neglect teaching activities to the benefit of his publications). As we shall see later in this chapter, an interesting application of this is professionalism.

Low-powered incentives and competition

The efficiency gains from competition on the market are well-known. It can play also between employees of a same organisation. Economists have explored such situation in so-called *tournament models* (Lazear & Rosen 1981).

In these models, an individual's payment is assumed as depending on his rank relative to that of other competitors. This is the arrangement underlying promotion policy in many organisations: quite egalitarian (and often low-powered) payment practiced within a same grade or reference group, pay increases coming with appointment to another position. It is therefore the combination of competition and the dynamics of pay rises that increases the intensity of the incentive.

Economists have highlighted the strength of such an approach: it is less demanding in terms of information (ranking does not require assessing absolute differences in employees' performance) and it reduces risks of rent-seeking, as the bundling of pay rise and assignment to greater responsibilities creates incentives for the supervisors to select the most qualified person. Economists have also alerted readers to the perverse effects of such schemes if competitors are in a position to sabotage each other, while collaboration would be required (Lazear 1989a).

In summary

A key issue for a manager is to get his employees taking decisions and undertaking tasks in line with the objectives pursued by the organisation. A key instrument to achieve that is to recruit individuals whose preferences are close to those valued and practiced by the organisation. Another way is to introduce high-powered incentive schemes. There are different models to implement that. A scheme combining a fixed salary with reasonable prospects for the employee that his performance may lead to higher salaries in the future (through promotion or recruitment by another organisation for a higher position) can already be quite high powered. Bonus systems are another option. Yet, a bonus scheme requires that the performance expected from the individual is well-defined. If the

employee's job is a multitasking one with some of the tasks (or performance dimensions) difficult to measure, the bonus scheme may pose a problem.

More fundamentally, contract theory has highlighted how important it was to appreciate the whole nexus of institutions affecting the employee. Within the organisation, there are for example major complementarities between the intensity of the incentive and the job description. Different parties concerned also matter (e.g. number of competitors for a position at a higher level). Eventually, the whole external market environment has to be considered (other job opportunities)[99].

The government – social service providers relationship

We have presented the main insights from contract theory with an application to the employer-employee relationship. In fact, most of these insights can be transferred to other principal-agent models. In this section, we will give a general flavour of the main questions that prevail when the principal is the government and the agent a social service provider.[100] We will make links with recent policy developments.

Social service provision: different options

A key role for the State in social services

The economic arguments in favour of a role for the State in the economy are well-known; the notorious market failures make up the bulk of these arguments. They are all related to observable phenomena in any economy: increasing return on scale for the production of the good or service or non-homogeneity of the good or service (both leading to limited competition), the informational asymmetries between transacting parties and the difficulty to enforce the property rights on some benefits generated by the good or service (externalities, public goods). 'Merit good' characteristics (i.e. the households underestimate the benefit or harm stemming from the consumption of the goods and services under consideration), limited agency of the beneficiary (i.e. the beneficiary is not able to decide by himself) and distributional concerns are other arguments for an involvement of the State.

Several of these arguments apply to social services such as education, health care, social assistance or art. Distributional issues and public good characteristics are key reasons for the State to finance, at least partly, these services through taxes. These resources are however rationed, and the State, for distributional issues again, may have to organise a network of providers on its territory. This may leave providers in position of de facto monopolies (if users have participation costs to access the services) or even de jure monopolies (e.g. for social assistance, poor have to go the service of their administrative district).[101] Some social services are merit goods; people for example ignore the benefit of early recourse to the health services for some health problems. Limited agency of the beneficiary is obvious with primary and secondary education, but applies also to services to mentally disabled persons, some health services and to assistance to the poorest.

For a very long time, these problems have been equated to arguments in favour of the public sector, i.e. a provision of the goods and services by government-owned agencies

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[99] Which determines the participation constraint in principal-agent model.

[100] If the provider is an organisation, the contracting party is the manager. In such models between organisations, it is assumed by convenience that the managers are perfectly aligned on the interest of the owners.

[101] The situation is not absolute as citizens can move from a district to another.

(Shleifer 1998). The understanding was quite similar for services outside the social sector. For example, concerned with the absence of price competition in the case of a monopoly, economists used to recommend state ownership for utilities (electricity, water, public transport).

A view challenged from different sides

Different observations have undermined this view.

A first attack, which was quite influential from an ideological perspective, has been the work by the *public choice school*. Initiated in the sixties, public choice economics has extended the *homo economicus* model to politicians and public servants as well.

According to this view, politicians and bureaucrats should not be seen as benevolent, impartial and omniscient, as it is usually presented by the public service ethos rhetoric; they pursue their self-interest just like any other economic agent (Tullock 1965). This has led to a whole set of models and empirical studies stressing the problems of political capture, rent seeking and corruption in the public sector, and the major inefficiencies that are related to such behaviours. Government failure exists as well.

One problem with the 'government market' is that political parties in power (or competitors) have only to please a majority of citizens (in a democracy). As citizens have heterogeneous preferences, this may leave a substantial share of the population frustrated by what they consider an under-provision of social services. For Burton Weisbrod, this frustrated demand is at the source of the creation of many nonprofit organisations (NPOs): clubs, charities supporting art performance or organisations with some humanitarian goals (Weisbrod 1975). In order to obtain a sufficient amount of the *quasi-collective good*[102] or service under consideration, these people will be ready to contribute voluntarily through financial donation or volunteer labour for supporting its greater provision.

While one could have remained on a status quo (the government fails, but it fails less than the market for some goods and services and anyway, the nonprofit sector fills the gap), theoretical developments in organisational economics (probably following new management practices in some countries) have revealed that possible collaboration with the private sector was much broader than thought so far. If it is true that by its very study object, organisational economics reveals the limits of the market, it challenges also the State in its traditional roles. Indeed, the "make or buy" question raised by Coase and Williamson applies also the government. Regulation and contracting permit to consider more sophisticate solutions than outright state ownership or unregulated private ownership. For example, the fact that social efficiency requests that the government finances a public good does not necessarily require that it has to produce it in-house.

Government contracting out the delivery of social services

The key question then is how government-owned organisations fare against alternatives, i.e. regulatory or contractual arrangements aligning incentives faced by private-for-profit organisations or not-for-profit ones. Should prisons, hospitals, schools or universities necessarily be owned and operated by the government? Do we need civil servants to collect garbage or to check whether car drivers have paid their parking tickets?

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[102] A quasi-collective good is a good which lies between the pure public good and the pure private good. If the good was purely private, the market would provide the good. Weisbrod's theory finds a role for the NPO from the combination of failures both on the market and the government side.

History confirms that a variety of options is possible. In many Christian countries, education still rests today heavily on private not-for-profit schools, a heritage of the heavy investment of religious congregations in social sectors. More recently, in the United States and the UK, the construction and operation of many prisons have been transferred to private-for-profit companies. In fact, over the last decades, major areas of the economy have been transferred to the private sector in high-income countries, from not much debated sectors (like car manufacturing and coal extraction) to more controversial ones (like incarceration and provision of security in airports or even in war zones like in Iraq). This reform trend has come to the point that one begins to wonder what arguments in favour of the public sector or even not-for-profit organisations remain.

The 'government – social service provider' literature

These questions on the best institutional arrangement for the production of quasi-collective goods have attracted growing interest of organisational economists over these last years (Dixit 2002;Hart, Shleifer, & Vishny 1997;Tirole 1994;Williamson 1999). Research in this field has greatly benefited from earlier and non-mathematically formalised work around nonprofit organisations and public administration.

Whereas this is not the place to cover all this work – which is still experiencing very rapid development - it is useful to summarise some key findings particularly useful for the discussion of the case of health services. As nonprofit organisations are possibly good candidates as subcontractors for social services, let us first explain the rationale of their nonprofit status. We can then discuss the incentive problems in the relationship between the government and the manager of the organisation providing the quasi-collective good.

The nonprofit status as a mechanism to create trust

Given the multiple secular history of economics, it is correct to qualify the interest of economists for the nonprofit sector as rather recent.

Yet, the object of study has been existing for centuries; think of the heavy involvement of religious congregations and churches in Western economies. Having a sense of what economists have to say about NPOs is of course of high interest for us. Indeed, in low-income countries as well, there are health care providers with a private nonprofit status. In Rwanda for example, around 40% of health centres are so-called '*centres de santé agréés*', i.e. non-profit health facilities owned by a sisters congregation, a protestant Church or the parish. In Cambodia, there are several charity hospitals owned and sponsored by Western individuals or charities. They are particularly active in paediatric care. In the same country, as we shall see later in this thesis, local NPOs are also particularly active in the operation of health equity funds.

We have seen that Weisbrod has provided an explanation for the willingness of households to voluntarily contribute on top of what they are forced to pay as taxes to the government and requested to pay through prices to private for profit providers. It also puts forward an explanation for the observable heterogeneity of missions of non-profit organisations, even in the same industry; a characteristic that more recent work has formalised as possibly efficiency enhancing (Besley & Ghatak 2005). Weisbrod's argumentation corresponds also quite well with phenomena observed in the past in Europe (e.g. the early presence of religious congregations in the social sector) and today in low-income countries (e.g. micro-finance initiatives were developed by the non-profit sector first). It is still necessary to explain why these patrons willing to donate their resources prefer an organisation with a nonprofit status.

Henry Hansmann made the strongest proposition in this respect (Hansmann 1980). His main preoccupation was to propose a positive theory able to explain how nonprofit organisations succeed in supplanting private-for-profit organisations even in sectors where goods or services are *private goods*, i.e. with none or very limited externalities. Health curative care to adults are very good examples of such goods. According to him, the success of NPOs in the social service industry is due to the asymmetry of information present on the related final markets. The nonprofit status bars the persons holding the decision rights (i.e. the board of directors, the manager) from distributing profits. This prohibition strongly increases their credibility in terms of their proclaimed commitment to do their best for the benefit of the recipients of their services (e.g they will not adopt cost saving strategies detrimental to the quality of services). Confident that their contribution will not disappear in the pockets of those holding the decision rights, other patrons are keener on donating their money, time…

Hansmann formulated his NPO theory before the theoretical innovation of multitasking models. In fact, we can see that the non-profit status is just the replication at organisational level of the approach of low-powered incentives for services whose performance is multidimensional with some components difficult to measure. Glaeser and Shleifer have proposed a formal model along this line (Glaeser & Shleifer 2001).

Government contracting with private providers: the cost-quality trade-off

For the government, the NPOs look very attractive subcontractors for the delivery of social services. As a matter of fact, this approach has been adopted for a long time in many countries. In Belgium, around 50% of children are educated in nonprofit schools; these schools are financed by the government and duly follow the national curriculum. In Rwanda, the '*centres de santé agréés*' do receive some financial support from the government (e.g. their qualified staff are on the Ministry of Health payroll). In Belgium as in Rwanda, these relationships are structured around framework contracts between the government and the representative body of the schools / health centres.

A more controversial question certainly is the idea to subcontract the delivery of social services to a private-for-profit provider. This question has been examined in a paper by Hart et al. (Hart, Shleifer, & Vishny 1997). In their model, which combines incomplete contract theory and multitasking, they consider two types of investment incentives upon the manager of an organisation delivering a quasi-collective good: those to reduce costs and those to improve quality. They consider the case of two kinds of managers: the private-for-profit manager and the public one. Both have decision rights to innovate (either for reducing costs or increasing quality), but they have different claimant status. The public manager has no incentive to invest in cost reduction or improvement quality, as he is not allowed, by his civil servant status, to appropriate the benefits of his innovation. The private-for-profit manager has an incentive to do so, as he can be rewarded through profit (via profit sharing arrangement, stock options…). The main finding of the model is that the subcontracting option, i.e. the private manager, is more efficient if the cost reduction has not too many deleterious effects on the non-contractible quality of the service. In-house production has to be preferred otherwise. This may explain why governments are ready to subcontract garbage collections – a service for which it is easy to define and measure performance -, but are much more reluctant to apply the model to their foreign policy.

There are other institutional mechanisms than ownership and the government-agency contract for managing the trade-off between cost reduction and the other dimensions that matter to the government. As already mentioned, the non-profit status of the contractor can greatly contribute to aligning its incentives with the objectives of the

government. The need for a good reputation, especially for increasing the odds of being awarded the renewal of the contract or other contracts, yardstick competition (see below) and some competition for users[103] are other mechanisms to convince private providers not to economize to the detriment of quality (Shleifer 1998).

Dealing with a lack of competition: yardstick competition

The efficiency gains from competition or its milder version – contestability[104] – are well-known. As a matter of fact, competition increases the power of any incentive scheme: if your performance (for example, measured in terms of cost reduction) is inferior to competitors' performance, your reward may be negatively affected.

Because of increasing returns on scale, the social service provider may be in a monopolistic position, at least locally. If there are limited problems in measuring quality, the government can contract a private provider. In such a set-up, competition can be reintroduced by organizing a tender to select the subcontractor. If for some concerns, the government wants to keep control on the provision of services, it may end up with an extensive network of public agencies. In such a set-up, competition is lacking. Could one not set high-powered incentives to establish some surrogate competition?

It is Andrei Shleifer that proposed a way out: *yardstick competition* or *benchmarking* (Shleifer 1985). The main idea is to compare the performance of a provider with the performance of firms providing similar services elsewhere (e.g. water distribution firms owned by different local governments). While such *benchmarking* exercises are particularly powerful to elicit information on best practices, it is also possible to tighten explicit incentive arrangements on them. This is the case when a purchaser/sponsor reimburses a provider on the basis of average costs in the industry. Firms below the average will make some profits, while those below the average will make a loss. While such models have mainly been used to compare organisations, applications to managers are possible as well. This is for example the model adopted by China for its bureaucrats (Li & Zhou 2005).

Definition of the public agency's mission

Sometimes, yardstick competition is not really possible. There is only one Ministry of Health. A possible track to mitigate the incentive problems due to the existence of competing priorities is the clarification of the public agency's mission. This is just a translation at organisational level of Holmstrom and Milgrom's proposition on job design.

This track has been explored by several authors, and one can still expect some further developments in the future, so numerous are the questions remaining pending. For example, in repeated games set-up, models show that the specialisation of organisations around one clear mission leads to more effort – on the rationale that the government may better appreciate performance and reward it later by budget increases (Dewatripont, Jewitt, & Tirole 1999b).

The clarification of the mission of an agency may require to transfer some tasks to another agency. Optimal task clustering is certainly a field of research that needs to be

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[103] As will be shown in our next chapter, market competition can be used to incentivise the private providers of a social service, even when users do not pay a price to the provider. Vouchers and similar schemes remove the 'ability to pay'-constraint of the users. Contracting is compatible with the distributional concerns of the government

[104] "A contestable market is one into which entry is absolutely free, and exit is absolutely costless" (Baumol 1982). The threat of entry may be enough to discipline the established firm and dissuade it to exert its market power.

much more explored. Dewatripont et al. have already formulated a few recommendations: bundle tasks that have a similar degree of measurability, avoid bundling that generates conflict of interests and specialise individuals around a set of tasks that require similar talents, so as to keep the inference process between overall performance and talent strong (Dewatripont, Jewitt, & Tirole 2000).[105]

Dealing with multiple stakeholders

This multitasking problem is compounded by the fact that managers of public agencies face the challenge to please several masters. This point has been formalized by Avinash Dixit. According to him, a characteristic of governmental agencies (and large firms in general) is that managers are accountable to several principals (Dixit 1997): the government, the public, the staff, the unions… In our next chapter, we give an illustration of this with township health centres in China.

With a simple multitasking model, Dixit shows that the existence of several principals weakens the incentives for the agent, especially if the number of principals is large and if agent's efforts to please the different principals are substitutes: each principal indeed wants to divert the agent's attention to his dimension of interest and away from the other dimensions.[106] Dixit identifies the following arrangements to mitigate these effects: compartmentalize information (so that each principal sees only his outcome), stipulate that principals can only make reward schemes for their outcome, group principals who pursue same objectives (when possible) and more fundamentally design bureaus' missions so that complementary activities are bundled together. If such arrangements are not adopted, different principals will send conflicting signals to the agent by setting incentive schemes (through regulation, contracts, threat of strikes…) rewarding different tasks.

Although not a point made by Dixit, one could argue that the necessity to arbitrate conflicting interests of multiple stakeholders is a good reason to keep an activity under the close control of a government; thanks to in-house production (and possibly, vague missions), electors and politicians secure the capacity to change their mind on priorities. A recent paper by Alesina and Tabelli makes a quite similar point with an application to monetary instruments (Alesina & Tabellini 2008).

The payment rule

Eventually, a last mechanism to affect the incentives faced by the subcontractor is of course the way the government remunerates the quasi-collective good. There is a whole strand of scholarly works on the institutional arrangements (procurement contracts, regulations, pricing arrangement) a government can adopt to shape its transactions with private-for-profit suppliers, including, recently, studies of public-private partnerships (Hart 2003b;Laffont & Tirole 1993).

There are also public economics models looking at vertical intergovernmental relationships, and more particularly the issue of fiscal transfers (Oates 1999): what kind of grants should a central government adopt towards decentralized entities to achieve the

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[105] See also the literature on separation of powers as a device against the threat of regulatory capture. Laffont and Martimort developed a model that shows that separation of powers raises the transaction costs of collusion and thereby facilitates the fight against private capture (Laffont & Martimort 1998). With yardstick competition models, economists have also shown that there was a case to split tasks (e.g. provision of a public good) in similar packages. By using the correlation of signals, the principal can extract the information rent of the agents in a costless way.

[106] This is a well-known problem in international aid. The SWAp and Paris Declaration about donors alignment are trying to deal with such problems.

highest welfare for its population? Yet, these models usually characterize the contracting parties by a capacity to levy taxes on the human and non-human assets under their jurisdiction.

Until recently, the relationships between governments and their various affiliated agencies delivering services to population had received limited attention by theoretical economists, at least in generalist economic journals. Recent developments, for example in educational economics, are promising. Many gaps still exist in the literature: it seems for example that very little has been written so far on the relative merits of block grants and budget line-items.

In as much as the health sector is concerned, health economics books and journals are full of models looking at possible contracts between a purchasing agency (e.g. a health insurance, the government) and health care organisations, but with a major bias towards contracting models adopted in high-income countries only (Chalkley & Malcomson 2000;Zweifel & Breyer 1997).

In summary: in-house production or subcontracting?

The theoretical literature reviewed above is a testimony of the interest by economists in incentive problems in the provision of quasi-collective goods. This interest reflects major policy changes in high-income countries. These changes have been fuelled by the general frustration with the performance of public agencies and some early successful experiences of privatisation, especially in telecommunication and utilities. The multiplication of contracting out experiences across sectors and countries has led to a dramatic increase in the number of empirical studies exploring the related questions. For the general public, the policy makers and the scholars, the boundaries of the State are not seen anymore as given once for all.

As far as social sectors are concerned, the pace of the changes has often been slower or more gradual. As a matter of fact, the private non profit actors were already very active in the health or education sectors. Their involvement has not been questioned. The reform thrust has much more focused on modifying the institutional arrangements shaping their public 'competitors' (public schools, public hospitals). One of the most radical reforms of a public health sector has been the overhaul of the NHS in the United Kingdom (Enthoven 1991;Le Grand 2003), interestingly enough, a system which was originally very similar to the one still prevailing in many low-income countries.

In many countries, privatisation still remains a taboo word. Fierce opposition – rightly or wrongly – comes from civil servants and the unions. In their political struggle, they often use the word 'privatisation' to disqualify strategies of reform which could eventually benefit the tax payers and the users. While this resistance is easy to understand, one must note that their stance is not necessarily 'progressive', as the inefficiencies to solve may hamper the provision of collective goods mainly used by the poorer groups.

Civil servants are a very well-organised group and many politicians are extremely reluctant to antagonise them. This affects the pace of reform. The ongoing trend in Europe for example is more a process of silent and steady reform under the leadership of the European Commission than rapid dramatic changes.

As far as the question "in-house production or subcontracting to the private sector?" is concerned, economists do not have a standard answer. Factors that may determine what the best option is are, among others: (1) the very nature of the service to produce and more particularly the related informational asymmetries; (2) the available monitoring technology; (3) the possibility to have a market broad enough to attract enough private

organisations for establishing competition; and (4) the capacity of the government to enforce complex contracts. This list of factors indicates that answers are not given once and for all. Technological innovations, the emergence of a strong national nonprofit sector, new contractual designs and the evolution of the whole institutional environment including legal enforcement may create new conditions more favourable to the subcontracting track.

Political economic studies show also that the fact that the private option is more efficient than the public one does not necessarily mean that the former will be picked. There are clearly vested interests in place. In countries suffering from poor governance, public provision is a major tool of leverage for some government officials to secure their private capture of public resources and collect bribes from frustrated parties. One can also easily understand the reluctance of a government to subcontract foreign private organisations. For sure, things are never definitely blocked. A new coalition in power may have a strong interest in dismantling some previous bad practices (possibly, to set new ones!).

Eventually, it is not even certain that efficiency requires to adopt one model or the other. Indeed, economists have put forward different arguments in favour of pluralism. The diversity of actors can reflect the diversity of preferences in a society, including among potential employees and donors ((Besley & Ghatak 2005). The co-existence of different kinds of providers allows also comparison and benchmarking.

In this whole debate, rather than ideology it is evidence that is required today. This observation however does not facilitate decisions; the empirical study of such policy reform is complex. Obviously, it is the whole nexus of institutions that matters. These challenges will come back several times in the rest of this thesis.

6.3. INCENTIVES IN THE HEALTH SECTOR

Generalities

In our two previous sections, we have introduced some general concepts relevant for the study of incentives in organisations. Most of these concepts are useful for the study of the health sector and can easily be transferred to the situation of the health staff and physicians in particular. This is certainly not the place to review all the incentive problems within the health sector. There is a whole corpus of the health economics literature addressing these questions (yet, as already mentioned, quasi exclusively focused on institutional arrangements prevailing in rich countries). We just propose to give a few illustrations of how what we have just seen can echo realities in the health sector.

Intrinsic and extrinsic motivation

We have introduced our chapter by reminding that individuals have both intrinsic and extrinsic motivation. Few would deny that intrinsic motivation is crucial for people embarking on a medical career. The medical education is long and particularly difficult. After graduating, the medical doctor shoulders heavy and stressful responsibilities; the workload is often heavy; patients are nowadays more and more demanding. Even if there are many extrinsic motivators for encouraging students and active doctors (e.g. social prestige, high income…), these motivators contribute only partly to the satisfaction from the job. Many doctors find an intrinsic value in performing their art the best they can. The willingness to relieve suffering, the satisfaction from solving others' problems and the challenge to do difficult things are a few examples of possible sources of intrinsic motivation to practice medicine.

We have then discussed the question of the intensity of incentives. In this respect, the situation is variable in the health sector across countries but also within a same country and even within a same health care organisation. In Belgium for example, many clinicians, including in hospitals, are self-employed and exposed to quite high-powered incentives through the fee-for-service system; yet, this model is not standard, some clinicians are employees; this is for example the case of interns. Nurses, administrative and technical staff are usually paid a fixed wage. The fact that most of the hospital staff are employees indicate that the phenomenon to explain is the presence of doctors exposed to high-powered incentives. We would contend that this is made possible by the fact that their individual productivity is quite measurable (number of patients admitted) and that thanks to contractual agreement with the hospital manager, they have control rights on their time and on the complementary assets required to increase their production (i.e. their own reputation, the nursing workforce, the building, their equipment, the beds and the drugs). Other staff members do not have such extended control rights. In many low-income countries, everyone is on a fixed wage contract with the government.

Professionalism

An interesting key characteristic of the practice of medicine is its organisation as a profession. *Professionalism* has been defined by Freidson as "a set of institutions which permit the members of an occupation to make a living while controlling their own work" (Freidson 2001, p.17). Freidson has identified medicine as the activity the closest to the 'ideal type' of professionalism; this ideal type can be summarized in five major traits (Freidson 2001): "(1) specialized work in the officially recognized economy that is believed to be grounded in a body of theoretically based, discretionary knowledge and skill and that is accordingly given special status in the labor force; (2) exclusive jurisdiction in a particular division of labor created and controlled by occupational negotiation; (3) a sheltered position in both external and internal labor markets that is based on qualifying credentials created by the occupation; (4) a formal training program lying outside the labor market that produces the qualifying credentials, which is controlled by the occupation and associated with higher education; and (5) an ideology that asserts greater commitment to doing good work than to economic gain and to the quality rather than the economic efficiency of work" (Freidson 2001, p.127).

This self-regulation approach has very ancient roots – cf. the Hippocratic Oath, a vow at the core of the medical code of ethics or guilds in the later Middle Ages (Fox 1993;Gelfand 1993); it takes its roots in the informational asymmetry unavoidable in the doctor-patient relationship. If it is true that all the institutions constituting professionalism were maybe not purposely designed to solve this central coordination problem, one can nevertheless suspect that those that survived over time are beneficial to the relationship and therefore to the profession.

Has professionalism any meaning from an incentive perspective? We see at least two meanings. First, one could see professionalism as a way to counterbalance some other institutions constraining the doctors and the nurses. Doctors and nurses have career opportunities beyond their current employer; securing a high reputation at individual level is therefore crucial. Peer recognition is a key element in this reputation building; it sets strong implicit incentives for individuals to comply with what is valued by their peers (e.g. to practice high quality medicine). Professionals will resist pressure from others principals to adopt strategies going against what is valued by their peers. To the extent that peers value the enforcement of ethics and codes of conduct, professionalism can be seen as the main mechanism to align the health practitioner with the enforcement of

these normative elements in situation where such an alignment is possibly in conflict with the interests of the professional herself or some of her principals: the hospital manager, the doctors (for the nurses), the third-party payer, the patient's employer, the police, but also sometimes the patient himself.

Second, as a set of institutions, professionalism fully acknowledges that not everything can be monitored or incentivised in the 'art of curing and caring'. Mechanisms supporting the construction of trust between health practitioners and patients are then crucial. A key factor to establish this trust is the recognition by the patient that the health practitioner is also intrinsically motivated. One could argue that if the nurse giving home care to Jane's father does so because of the income involved, the way she performs the care depends to a large extent on her intrinsic motivation (as anyway, no peer is there to monitor her). As reminded by Freidson's fifth major trait, professionalism consolidates intrinsic motivation.

Nonprofit actors in the health sector

Obviously, many situations identified in our section dedicated to the provision of quasi-collective goods prevail in the health sector as well. There are first the historical facts. In Europe, charity hospitals existed before public ones (Granshaw 1993), clearly as a response to both market and government failure. Over the course of the nineteenth and twentieth centuries, the role of the state in the health sector rapidly grew (Fox 1993). Different models have been adopted. Whereas in some countries (e.g. Socialist countries or UK), the government decided to own health care organisations, in other countries, the government has mainly taken a role of purchaser of health care services delivered by autonomous health care providers. While the doctor proprietary model is quite frequent on the first line, many private hospitals have a nonprofit status.

The approach to determine the kind of services to be delivered has sometimes been quite light – e.g. mainly through regulation – but most of the time, governments have been very directive purchasers through contractual instruments, package of activities, protocols and reimbursement schemes in particular. There is a vast health economics theoretical and empirical literature on the pros and cons of alternative payment systems (Chalkley & Malcomson 2000).[107]

Nonprofit organisations are also present in other segments of the health sector (e.g. mutuelles, patient groups, humanitarian organisations).

Emergence of a vision for low-income countries

As mentioned in the introduction of this thesis, performance of health systems in many low-income countries is low. If the need for reforming public health services has been identified for quite a while (World Bank 1987), available policy guidelines are still partial, vague and sometimes based on little evidence. It is acknowledged there is today a lack of knowledge about ways to organize, pay for, and oversee health services in poor resource settings (Travis et al. 2004). However, partly thanks to the emerging literature on reforms in high and middle-income countries (Saltman, Figueras, & Sakellarides 1998), a new vision is emerging. It stresses the need for new relationships between the government and the health care providers.

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[107] We are not aware of models which would try to formalize the fact that within a same health care organisation, several levels of management pursues partly conflicting objectives (e.g. manager aims to minimize cost, while the doctor has an interest in the highest efficacy of her treatment) and that consequently bilateral contracts may mitigate each other.

This vision distances itself from the ideological and unsubtle promotion of the private sector that was common in the eighties. Evidence supporting a liberal model for health service organisation in low-income countries was very limited and later results from deregulation have been disappointing. Experience shows that the health sector is very difficult to regulate through traditional regulatory instruments. Today, large chunks of the health private sector in low-income countries are actually very loosely controlled. This is recognised by many experts as a major source of welfare loss (Mills et al. 2002).

In the nineties, several voices expressed the view that getting the best from both worlds would be a much more relevant strategy. Hopefully, through approaches such as 'contracting' or 'autonomisation' of public facilities one could still secure the attainment of objectives dear to the Ministry of Health, yet in a more efficient way than in a bureaucratic NHS (Mills 1998;Perrot, Carrin, & Sergent 1997;World Bank 1993). The reflection has first been fuelled by experiences in high- and middle-income countries; corporatization of public hospitals, outsourcing of ancillary services and contracting out of public missions to private providers attracted most of the interest (Harding & Preker 2003;Palmer & Mills 2003;Preker & Harding 2003); a bit later, revision of purchasing arrangements received attention as well (Preker & Langenbrunner 2005). Contracting health services in low-income countries is clearly on the agenda of the technicians today (Perrot & de Roodenbeke 2005).

Two key experiences have been those of Haiti and Cambodia. The Haitian experience has proved that performance-based contracting was also feasible in low-income countries (Eichler, Auxila, & Desmangles 2007). The Cambodian experience has shown that: (1) it was possible to contract whole health districts to international NGOs; and (2) this was a particularly effective strategy to improve coverage by health centres with key components of the minimum package of activities (Bushan, Keller, & Schwartz 2002). However, despite the emerging evidence that contracting out to NGOs is technically feasible and effective (Loevinsohn & Harding 2005), few governments are enthusiastic about such strategies. More recent innovations are situated within the public health systems themselves. The Rwandan experience described in this thesis is the most advanced experience in this respect.

The literature on this topic is rapidly growing. The debate is getting fiercer as well. What are the main causes of the low performance of public health systems? Should one inject more market mechanisms or conversely, allow again a much more active involvement of the State in the health sector? Should one try to reform the public health systems from inside or should one consider them as close to 'clinical death' and hence transfer most of the operation of the health sector to the private (nonprofit) sector? If one adopts more powerful incentives, how can one limit perverse effects? How can one protect intrinsic motivation in the health sector?

A lesson from our review of the contract theory literature is that there will be no simple answers to these questions. Aligning incentives of an organisation and its stakeholders on some public goals is not easy. Yet, we believe that this is no reason for passivity. In the second part of this thesis, we provide examples of possible interventions. We formulate also some propositions in terms of reform packages. Before moving to this more prescriptive step, it is good that we identify where the main normative stakes lie. We address this question in our next chapter.

A summary

This chapter has focused on clarifying the process through which property rights structuring sets incentives to economic agents and subsequently, determines their behaviours. We have organised our scrutiny in three sections.

In the first section, we have introduced key concepts. We have clarified what economists mean by the term 'incentive'. We have presented the contribution of incentives to economic agents' motivation. We have stressed that both extrinsic and intrinsic motivation matter. The interaction between both has to be kept in mind in the design of any motivation strategy. Incentives are a key instrument for someone willing to influence someone else's behaviours. Economists talk of aligning incentives. A key attribute of an incentive is its intensity. If incentives are too low-powered, individuals may have limited inducement to effort.

In the second section, we have reviewed some of the key findings of contract theory in respect to alignment problems. We have first examined the situation where the principal is a manager and the agent an employee. We have identified several strategies for the manager to align the employee against his objectives.

Then, we have reviewed the theoretical economic literature on the right scope of the State in the delivery of quasi-collective goods. Some recent theoretical developments allow to cast an interesting light on new practices adopted by the government, especially in high-income countries. A strategy receiving much attention today is for the government to subcontract the production of these goods or services to private organisations, and nonprofit ones in particular. Organisational economists have shown the benefits and risks attached to such strategies. There is no definite answer on the question whether government should produce the good or service in-house or subcontract its production. The very nature of the service to produce, the available monitoring technology and the capacity to enforce complex contracts are, among many others, factors that may influence the final choice.

In our third section, we have made bridges between the theory of incentives and the health sector. In the light of all these recent theoretical developments it is an interesting exercise to reconsider incentives in the health sector in low-income countries.

CHAPTER 7: THE INSTITUTIONAL ECONOMIC ANALYSIS OF HEALTH CARE ORGANISATIONS

"Because all feasible modes of organization are flawed, the strengths and weaknesses of each candidate model need to be assessed comparatively."

Williamson (1999)

The main hypothesis behind this thesis is that low performance of the public health systems in many low-income countries is largely the result of inadequate institutional arrangements. In our previous chapters, we have clarified four key concepts for the scrutiny of this question: the institution, the organisation, the property rights and the incentives.

In this chapter, we establish links between these concepts in order to lay down an analytical framework. Our first section covers general theoretical and empirical issues related to the framework. In our second section, we apply the framework to the health sector. We show that among other things, the framework can provide firmer foundations to the study and measurement of health care organisation performance. We clarify the definition of performance adopted in the rest of the thesis.

Throughout the chapter, we review the extent to which our framework has the five powers identified as desirable in our chapter 2: the descriptive, analytical, instrumental, normative and argumentative powers.

7.1. THE INSTITUTIONAL ECONOMIC FRAMEWORK

Generalities

At this stage of our dissertation, it is possible to link together all the concepts we have introduced in our chapters 3 to 6.

At the centre of our framework are the property rights. We have seen in our **chapter 5** that an individual's property rights are her ability to freely exercise choices over assets (including herself). These rights are the results of her own effort of capture and protection and of the recognition she obtains from others. Others contest all the more an individual's rights that the latter are difficult for the individual to defend. The balance of power between the individual and others, who are not a homogenous group, is therefore a crucial determinant of property rights. If the balance of power is not favourable to the individual (e.g. because of some asymmetry of information or market power that others have from control rights over other resources), her property rights are less secured. The recognition by others of an individual's rights is materialised in institutions. We have seen in our **chapter 3** that institutions are ways to interact that are expected and practiced.

Property rights over an asset are about three main entitlements: (1) to decide about how to use the asset, which may include alteration or even destruction of the asset or some of its physical attributes; (2) to gain utility and income produced by the asset (and

the decisions taken on it); and (3) to alienate, partially or fully, any of the two other entitlements. Any asset has in fact many attributes, i.e. qualities being sources of value for the society. This multi-attribute nature creates a wealth-creating opportunity for the individuals and the society: to the extent that physical laws allow it, one could try to split the property rights on the different attributes and allocate them to different economic agents.

Structuring of property rights is the exercise of allocating property rights among different individuals. It is a key economic issue: for a society, there are some structurings creating more well-being than others. Questions in terms of structuring of property rights can be raised at local level (e.g. at the level of health care facilities) or at a more global level (e.g. a market economy versus a planned economy). Our dissertation can be interpreted as the quest of better property rights structuring for the public health sector in low-income countries.

In such a quest, the analyst must adopt a view on human psychology. Economists assume that human beings are rational in their choice, i.e. they take decisions that best serve them in their pursuit of their particular objectives. A direct corollary of this assumption is that among the many decisions an individual can take on an asset, he will pick the one that brings him the most utility in the pursuit of his objective.

One of the great qualities of such a behavioural assumption is that it gives clear paths for action if one wants to influence others – a concern at the centre of this dissertation as we want to improve the impact of health interventions in low-income countries.

Imagine a situation where the best decision for Mr A is a major source of welfare loss for Mrs B. Economists believe that a key instrument for Mrs B to change this situation is to modify incentives faced by Mr A. Indeed, if the relative gain for A from his decision is quite limited in comparison to the welfare loss experienced by Mrs B, there may exist a compensation acceptable by Mr A for him to adopt another decision. The strategy for Mrs B consists of modifying Mr A's property rights in such a way that he is better off by changing his mind. Institutions – for example, a contract – are the mechanisms to operate an incentive-based strategy. The purpose of the strategy highlights a key requirement upon the institution: it should be credible in its enforcement power. Mr A must not doubt that he will be compensated. Secured on his new property rights, he will change his behaviours.

In our **chapter 6**, we have extensively reviewed the economic literature on incentives. Getting incentives right is indeed not that easy. We have paid particular attention to incentives for the provision of social services, as the focus of this dissertation is on public health care organisations.

Organisations bring the institutional economic analyst to a higher level of complexity. We have seen in our **chapter 4** that an organisation can be viewed as a nexus of institutions. The main outcome of the nexus is to structure the respective property rights of the individuals interacting through the organisation. This structuring is strategic as it creates incentives for all the parties. Obviously, the institutions making the organisation are not together by chance. An organisation has in fact a conscious and purposeful character: this consciousness and purposefulness is at the level of individuals interacting through the web of institutions.

As far as firms - organisations with a formal status – are concerned, the main decision-makers in terms of the organisational form are the formal owners of the firm. As they are rational, they will opt for the organisational form that contributes the best to the attainment of their goals. Yet, their choices are constrained by what others are ready

to accept. For example, the State will provide its support for enforcing any future deal only if the organisational form complies with the law; the owners will benefit from an extended support in the community to the extent that they abide by its norms and customs. Furthermore, the organisation will mean really something for the owners only if it proves to be a mechanism which enhances their access to the resources critical to the pursuit of their objectives. The organisation form must therefore be credible enough for others parties to decide to enter into contractually relationships with the firm's owners. Accordingly, the nexus of contracts can be seen as the real institutional backbone of the organisation.

The actual form of an organisation is therefore the result of a combination of environmental institutions to be accepted as a given, of original choice by the firm's owner, and of contracts passed with agents holding rights on some critical assets. The organisational form is the result of everyone's efforts to securing his own property rights; it de facto modifies property rights, at least to the benefit of contracting parties, as contract participation is voluntary.

We would contend that this chain of realities – economic agents (their initial endowments of other resources and their preferences), the resulting balance of power between them, assets and their attributes, institutions, organisations, property rights and incentives – is what Elinor Ostrom calls a *framework* (Ostrom 2005a). It provides indeed the list of the key elements and the relationships among them that one needs to consider for the institutional economic analysis of an organisation (Figure 7).

As it will be demonstrated in the next chapter, the institutional economic framework helps to organize diagnostic and prescriptive inquiry; it also provides a metatheoretic language to talk about organisational theories and compare them. However, it is not a *theory*; it does not focus on a phenomenon that it tries to explain. So, the framework alone does not help much. The analyst has to complete it, with *theories* – general explanations for the occurrence of some phenomena – or even *models* – establishment of causal links between a limited list of parameters and variables.[108]

[108] One of the issues for any theory or model is to clarify how it handles the feedback loop (see Figure 7). It is obviously not the purpose of this chapter and dissertation, but we wonder whether what we call the institutional economic framework is not the common framework of the different organisational and institutional economic theories reviewed in our chapter 1. These theories are mainly different in their practice of 'theoretical isolation', i.e. the selection of dimensions to exclude and include in the analysis (Foss & Foss 2000;Mäki 2004). A difficulty with this multiplicity of theories is that the selection of variables is not always fully explicit. We suspect that the framework could be helpful by removing some ambiguities. For instance, one could argue that Williamson and Hart are mainly concerned with situations where earning rights on non-human assets are unsecured and cannot be more secured. The institutional solution in terms of better property rights structuring is then to transfer decision rights to one party. Conversely, the principal-agent model observes that the agent has no earning rights on an action very valuable for the principal. The institutional solution for the principal is then to transfer some (fully secured) earning rights to his agent. Such conceptual clarification could perhaps help the metatheoretic dialogue between organisation economic theories.

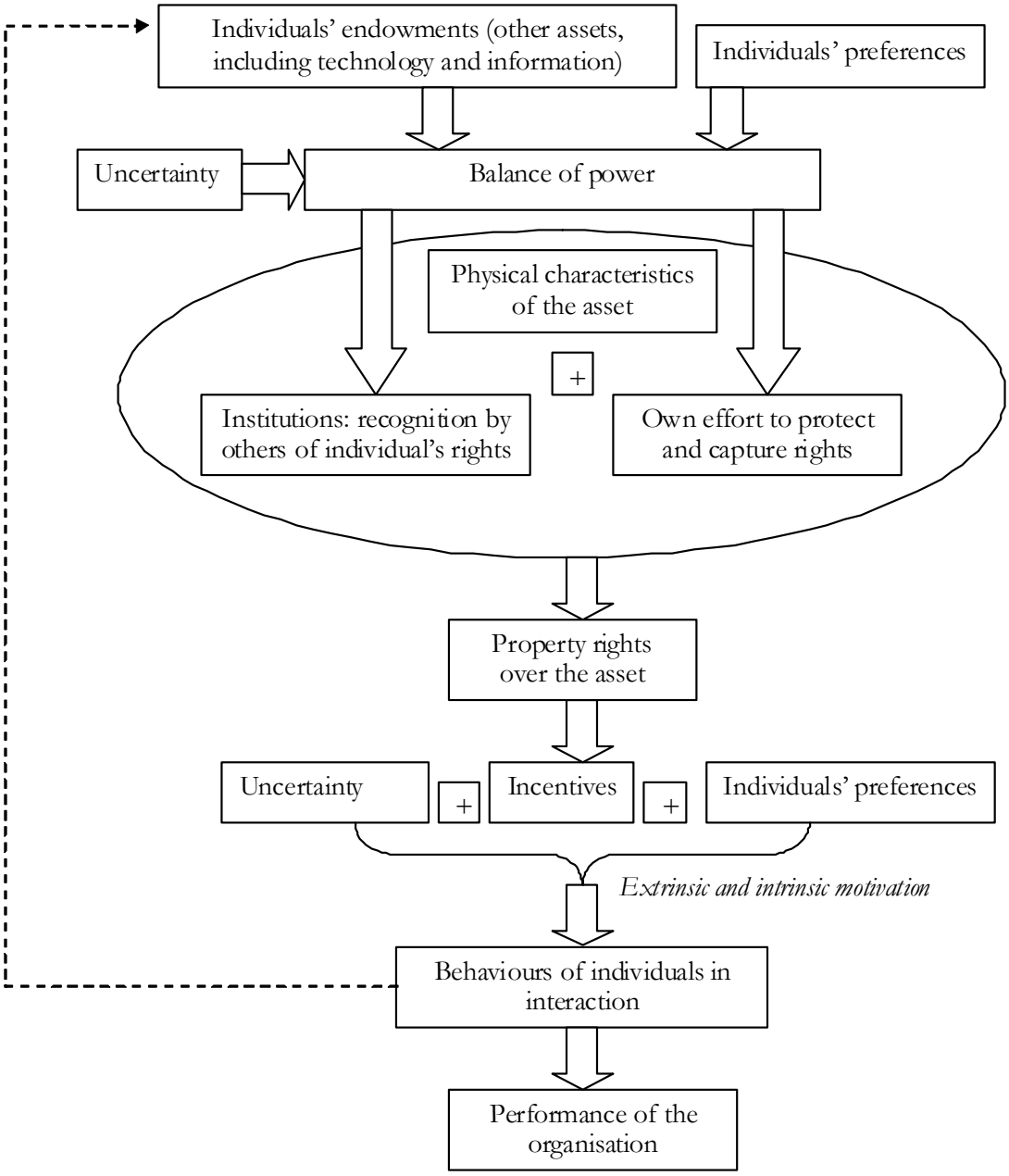

Figure 7: the institutional economic framework

A peculiar issue: dealing with different sources of motivation

In real life, both intrinsic and extrinsic motivation matter. As the framework acknowledges that our behaviours are determined by the combined effect of incentives and preferences (Figure 7), we believe that it can accommodate both of them.[109]

[109] If incentives are nil or even negative, preferences do still influence behaviours.

Yet, for the analyst willing to scrutinize some causal paths, it can be easier to adopt some simplifying assumptions. This is clearly what microeconomists do when they decide to focus on extrinsic motivation.

We have annexed to this PhD a microeconomic model studying incentives for health care providers. In this paper, we provide the following argument in favour of microeconomic models applied to the behaviour of health care practitioners.

"Regarding the health care provider's objectives, we will assume throughout the paper the extreme case of selfish preferences: the health care provider just cares about maximising his own well-being. We acknowledge that this assumption strongly contrasts with the widespread picture of the altruistic and professional doctor abiding by medical ethics and public service ethos. Our goal is certainly not to pass judgement on the actual behavioural norms in low-income countries or to undermine the view that medical ethics and public service ethos are indeed crucial. Our point is merely to show what happens if our assumption is valid, or put differently, to highlight situations in which ethical commitment may be in contradiction to self-interest. The outcome then depends on the respective utility weights of the psychological cost of 'bad' practice, on the one hand, and of the gains in terms of money or leisure, on the other hand. With respect to this, moral heterogeneity is going to matter. However, the distribution of morality being given, the stronger the incentives, the higher the probability of bad practice, or equivalently the proportion of bad practice" (Meessen & Delpierre 2008).

Later in the paper, we come back on this issue from a low-income country perspective.

"We acknowledge that this approach clashes with the traditional behavioural assumption underlying, at least in rhetoric, a free health care system: the altruistic and professional health staff, who are inspired by ethics and public service ethos and consequently deserve trust and a fixed salary from their principals.

Yet, we believe that this traditional behavioural assumption deserves some scrutiny. It is well known that for several reasons, civil servant medical staff have suffered great hardship these last twenty years in most low-income countries (Lindelow and Serneels, 2006). Studies have shown that morale has been affected and staff have developed coping mechanisms to survive (Ferrinho and Van Lerberghe, 2000). Most of these strategies (eg, absenteeism, drug pilfering, bribe) go against the interests of the population. A key question is whether the staff have interiorized these strategies departing from traditional civil servant deontology as new norms (Ferrinho et al., 2004). If so, a mere increase of the fixed salary may be insufficient to roll back the 'bad habits'. We would contend that if there exists no more widespread commitment among civil servants to subordinate their own interests to the benefit of the population, institutional arrangements deserve thorough re-examination (Le Grand, 2003)" (Meessen and Delpierre 2008).

From a policy perspective, the key question is how to develop extrinsic incentives that do not undermine incentive motivation or more correctly how to find for a given task the optimal balance of extrinsic and intrinsic motivation. There is obviously not ready answer for that. We acknowledge there is a need to accumulate more knowledge, especially in the health sector. Yet, this should not lead us to abandon microeconomic models applied to the health care industry. They are useful analytical tools and can help us to design better policies. Before evoking the power of the framework in this respect, let us clarify some last empirical issues.

Empirical application of the framework

The institutional economic framework sets several challenges in terms of empirical work. The very first one is the one of observing institutions.

Institutions clearly set several challenges: (1) as shared expectations, they are invisible (Ostrom 2005); (2) as regularities, they are difficult to distinguish from common preferences or physical constraints; (3) they may overlap on each other and be difficult to disentangle from each other.

Most institutional economic authors are silent on their empirical approach to observe an institution. In our chapter 3, we have proposed an original way to deal with these challenges: the four-state-view. According to this view, institutions have fundamentally four states. In our chapter 3, we have mainly developed how the four-state-view was useful in terms of collecting information on an institution. We believe that the view can serve other functions. For example, we would argue that the view is quite helpful to isolate an institution. Whereas as others (Aoki 2001, Olstrom 2005), we alert against the mistake to take the formal state as the proof of an institution, it is obvious that having a formal state (e.g. a hospital internal regulation, a remuneration contract) gives a reference to assess whether an institution is actually in place. We would contend that many institutions shaping public health care organisations have a formal state. However, there can be institutions that have no formal stage. This is surely the case in traditional communities, but also in quite formal organisations like health care organisations. In such situations, other tricks must be found. Olstrom recommends for example to "being armed with a set of questions concerning how is X done here and why is Y not done here" (Olstrom 2005, p. 824). This obviously requires having a good knowledge of what one is looking for. Our own experience is that… experience, good knowledge of the sector and of the type of organisation under study and more particularly exposure to many various situations, including in a cross-cultural way, are keys at this level. For example, the description of the institutional structure of a hospital does require good knowledge on hospital activities.

The next question is what one should actually describe once one has located an institution. In this respect also, the institutional economic framework is clear: what really matters to the analyst are the economic property rights stemming from the institutions, as it is the property rights than set the incentives. This focus on property rights is good news for at least one reason: the fact that institutions may overlap is not really anymore an issue, as we look at their common outcome. Much more than mapping institutions – a frightening venture if taken seriously, the main empirical challenge becomes to appreciate who has property rights on which resource: may the hospital director hire and fire the hospital personnel; may the surgeon retain some of the income collected by the hospital thanks to his skilful practice of surgery?

The institutions are then mainly serving an entry point: they served as informational instruments to understand the structure of property rights. The analysis of this structure first requires a good *mapping* of the property rights. This can be organised around three main subsets: the rights to decide on resource use, the rights to appropriate utility from the resources (earning rights) and the rights to transfer rights of the first two subcategories. The best way to organise one's work is to develop a matrix reviewing for different assets who is the owner (residual decision rights), who has some specific decision rights. The matrix should also provide a rough assessment of the extent to which others respect the property rights and if there are any disputed rights. As a reminder, the focus should be on economic property rights. If there is any discrepancy with the formal institutional state, their origins must be identified, especially if it relates to an issue of balance of power between stakeholders.

Another challenge pertains to the empirical documentation of the incentives in place. We know that incentives bring another element in the analysis: a theory of human behaviours. If the *homo oeconomicus* proposition has limits, it is still the most robust proposed so far. It is the one on which the institutional economic framework rests.

As far as incentives are concerned, the empirical analyst will not escape from making some theoretical propositions on the situation under observation. We would argue that if

he is equipped with the framework, has extensively read the available economic literature on incentives and has completed the property rights matrix, he will quickly make his way through the case under study and be able to formulate hypotheses on major incentives into play. Otherwise, a microeconomic model will be necessary.

The last empirical challenge is to put the whole chain together and prove that an institutional arrangement has an influence on some behaviour. The full process consists in: (1) providing a general description of the web of institutions structuring the interactions under consideration; (2) observing an institutional change in this web; (3) describing its consequences in terms of property rights; (4) formulating hypotheses on incentives; (5) identifying possible interaction with intrinsic motivation; (6) measuring some behaviour changes; (7) proving the causality between the institutional and the behavioural changes.

It is probably the seventh step that raises the main methodological challenges. The problem is the common one: the extent to which the research design really allows to establish the causal link between the changes in variables. Some research designs (e.g. randomised evaluations) are better than others in terms of the rigour of the evidence. Yet, the analyst will rarely be in the capacity to apply them, as he rarely has enough decision rights on the institutional changes, which may be complex in their nature or guided for their timing by non-scientific consideration (e.g. a window of opportunity suddenly open to the policy makers). These limits do certainly not invalidate the institutional economic program; it just reminds us that it faces the same constraints than any other research programs on health systems.

An interesting power: identification of policy issues and instruments

The institutional economic framework puts forward a clear way to obtain changes in behaviour: change the institutions. Because of that and despite the limit discussed above, we believe that the framework has real instrumental power for policy makers.

A first crucial message from the framework is that any institutional arrangement holds only if it is backed by the required balance of power (cf. our Figure 7). The policy maker must have a good understanding of who has control on key resources and whether there are technologies to tap for facilitating the enforcement of the new institutions.

Another important quality of the framework is to put forward a clear understanding of what an institution is. The four-state view alerts the policy makers on three main things to pay attention to.

First, the policy maker has to think whether he wants to use any formal state to consolidate the enforcement of the institution. In Table 4, we compare three possible approaches: a legal text (a law, a decree), a contract or no formal state at all (the norm). We highlight different features that may matter. In our chapter 9, we will see how powerful contracts can be to modify institutions in the health sector. Second, the four-state view alerts the policy maker on the importance that the institution he wants to introduce is in line with the moral state, and more particularly the vision of fairness shared in the community.[110] Third, the four-state view stresses the importance to

[110] In fact, we see that the framework alerts the policy maker to two levels of interaction between the scheme he is thinking of and preferences. A first level is between the institution (actual and expected states) and the moral state, which can be understood as the set of values shared in a community: will the majority of actors abide by the scheme? The second level of interaction is between the incentives and the individual's preferences, i.e. the issue of interaction between extrinsic and intrinsic motivation. Will the scheme affect preferences to the point that it undermines or instead consolidates intrinsic motivation?

correctly communicate on the institutional change. Information is a necessary condition for being able to form one's expectations.

	Legal text	**Contract**	**Norm**
Open to	The State only or a mandated agency	At least two parties (including legal entity), but not too many (unanimity rule)	At least two natural persons
Production	Centralised, the political and legislative apparatus or a professional apparatus (e.g. the medical association)	Decentralised, but required the will of signatory parties only	Very decentralized (by mutation); under-provision because of this co-production character.
Decision rule	Majority (if democracy)	Unanimity	Majority within the group of application
Precision	High; allows clear delineation.	Very high, as specific contingencies and characteristics of the contracting parties can be mentioned as well	Limited (but enough to be talked about)
Application	Anyone on the territory and in the domain ruled by the authority	Directly to the transacting parties, but may indirectly impact others	Anyone in interaction with individuals part of the group of application
Communication power	High; but require complementary communication (e.g. media).	Very high (people read contracts that they sign)	Limited
Enforcement	Centralised (legitimate use of violence); allows to seize returns on scale. Credibility rests on the credibility of the judicial system.	Decentralised (repeated interactions among non-anonymous parties) and centralized (threat of litigation and judicial decision in case of trial).	Very decentralized, potentially among anonymous individuals (yet, subject to free riding)
Instrumentality	Very high (if the ruled behaviours are verifiable), but costly	Very high	Very low, as not moldable
Potential impact	Very high as applying to many in a quasi universal way	Mainly limited to transacting parties; indirectly may affect many.	Very high if applying to many

Table 4: three approaches to the formal state

The nexus of institutions view of the organisation reminds the policy makers that what matters it the synthesis of the different institutions in the structuring of the property rights. This may invite him to pay attention to the extent to which the new institution is consistent with other actions that are desired or forbidden to the economic agents.

At least, the property rights structuring should create enough decision space. As some behaviours may already be adopted because of some intrinsic motivation, the creation of decision rights is sometimes enough. However, most of the time, a reward will have also

to be introduced. Another rule is that actions that are extrinsically rewarded should be allowed (control rights) and achievable (the individual should also have control rights on complementary resources); otherwise the institution will be a major source of frustration.

The institution change should limit the capture of resources left in the public domain by legitimate right holders but should also take into account the related enforcement costs. There is here a major trade-off. Some simple arrangements have strong enforcement power (e.g. pay after delivery of the service). There will always be a need to comparatively assess the cost-effectiveness of the different possible routes for enforcing the desired behaviours.

7.2. APPLICATION TO THE HEALTH SECTOR

Studying health care organisations

Applied to the health sector, the main message of the institutional economic framework is to invite us to look at the health system and health care organisations as nexuses of institutions: the structuring of property rights and the set of incentives established by these nexuses deserves central attention by health system researchers and health policy makers.

We do not pretend that this observation is a break-through. It certainly does not revolutionise health economics. It does not dramatically modify either what is known or thought about health systems in high-income countries. In these settings, incentives have been a central point of attention for policy makers for at least three decades. This is particularly blatant in reform of the general practice – how to remunerate the new tasks expected from the general practitioners – and hospital financing – how to control the cost without affecting quality of care.

Still, as far as general health system thinking is concerned, we believe that the framework can help at several levels.

At paradigmatic level, the framework clarifies issues in terms of *domains of relevance*. For the health economist, this plays in two directions, an expansive and restrictive one. The stress it puts on the property rights structuring, gives support to a quite wide implication of economics in the thinking of health systems. Economists have things to say much beyond the well-accepted domain of 'health care financing'. For example, professionalism, which is often considered as a topic reserved for sociologists, can also be explored within the institutional economic framework: after all, does professional autonomy fundamentally not amount to a wide set of decision rights, and therefore of property rights hold by the doctor? In a more restricting way, the framework is also particularly useful to situate theoretical works by health economists and acknowledge their limits (e.g. their assumptions on human behaviours).

Another metatheoretic benefit of the framework is its provision of clear definitions for some key concepts. Such semantic clarity can only help the dialogue between scholars from different disciplines, something much needed in the health domain. The fact that our definition of institutions is close to the one proposed by Durkheim shows that there were bridges already. Yet, existing concepts needed to be a bit linked together. Whereas much has been said recently about the importance to look at institutions in the health sector, little had been really done. We believe that with the institutional economic framework, scholars – sociologists, economists and public health experts – have keys to go beyond mere declarations of intention.

The framework may serve the dialogue between experts by a third quality: being discursive, it is not abstruse to non-economists. As a profession, economists must learn to better transfer insights from their theories to a larger scientific and operational public. This is particularly important in the health sector, as doctors rarely have a background in social sciences. While the framework should be able to host microeconomic models, it provides a way to the economist to coin his main conclusions in a more accessible way. The framework can for example help the economist to situate the contribution of a specific organisational theory or of his own microeconomic model: what institutions is he focusing on; what are the key property rights at stake; how are incentives playing?

Yet, efforts should not come from economists only. One of the motivations behind this dissertation was our frustration with the limited theoretical foundations backing dominant health system models in low-income countries. Whereas theory is not a sufficient condition to develop wise health policies, we believe that it is a necessary one. A message from the institutional economic framework is that having theoretical foundations is possible.

Defining performance of a health care organisation

We have argued so far that the framework has real descriptive, analytical, instrumental and argumentative power; given our research question – the link between institutional arrangements and performance of public health care organisations in low-income countries – we obviously look for another fundamental quality: does it tell us somehow how to judge the institutional configuration under consideration? If not, we would obviously have to complete our framework with something else.

We have reviewed the literature on performance in the health sector. Our exploration of the literature was of course useful, but it revealed that performance of health care organisations and of health systems was exactly the kind of concept that lacks today firm theoretical foundations. As we will argue in the following section, we think that the institutional economic framework can help at this level as well.

The standard approach to performance measurement in the health sector

Performance of health systems or their components is receiving today a lot of attention. This interest is quite general: it goes from the general public till health care organisation managers and scholars. The movement started in high-income countries under a concomitance of factors or new trends: the sustained arrival of new medical innovations permanently creating new demand on the health sector budgets; public budgetary restrictions (e.g. the Maastricht criteria in European Union countries) ; the rising demand by the general public for greater accountability from service providers; and eventually, an information technology revolution allowing the implementation of quite sophisticated approaches to monitor organisational performance (OECD 2002). In most countries, national or private insurance funds (e.g. Health Maintenance Organizations in the US) have been in the forefront of the battle for performance. Scholars have followed; as a result, there are more and more empirical studies available on the performance of OECD health systems or of their components (hospitals receive quite some attention).

Things have taken more time in the rest of the World. The World Health Report 2000, entitled "Health systems: improving performance" (WHO 2000) was certainly a key milestone. Whereas this report deserved much of the criticisms it received in respect of some methodological choices made by its authors, it had at least two major positive consequences: to open the debate over the performance of health systems in the World (of which this dissertation is an element) and to raise interest for its measurement.

Surprisingly, this interest for health system and health care organisation performance has not been preceded or accompanied by substantial theoretical works – among other things, to give clear theoretical foundations to the concept of performance and provide guidance for its measurement. Most authors do not bother to look for theoretical foundations.[111] The dominant practice by analysts in public health is often to go straight from very broad conceptual definitions of performance – the kinds of those given in common dictionary – to narrow empirical ones. Most of the time, broad formalisations acknowledge that performance has to be assessed on (1) an outcome metric; (2) relatively to some inputs; (3) relatively to at least one reference point. In order to formulate their empirical definition, most authors parallel what they are familiar with. As far as health care organisations are concerned, the Donabadian's formalisation of quality of care is a key reference (Donabedian 1966).

For example, the WHO, in its workshop on *Measuring hospital performance to improve the quality of care in Europe: a need for clarifying the concepts and defining the main dimensions* in January 2003, defined hospital performance as "the achievement of desirable goals", and later, stated that:

> "High hospital performance should be based on professional competence in application of present knowledge, available technologies and resources; efficiency in the use of resources; minimal risk to the patient; satisfaction of the patient; health outcomes. Within the health care environment, high hospital performance should further address the responsiveness to community needs and demands, the integration of services in the overall delivery system, and commitment to health promotion. High hospital performance should be assessed in relation to the availability of hospitals' services to all patients irrespective of physical, cultural, social, demographic and economic barriers." (p. 8)

This pragmatic approach to performance definition is rather the standard. To some extent, it echoes the 'balanced scorecard' method developed for and by managers of for-profit organisations (Kaplan & Norton 1992). Among other things, it allows for a multiplicity of performance dimensions, a necessity required by the fact that an organisation may pursue different goals. However, given the dictates of empirical work, these 'multiple dimensions' will often become a few only. Lied & Kazandjian for example define performance (of a health service) as "the provision of cost-effective, high quality and appropriately accessible health services that involve inputs and outcomes that satisfy the patient" (Lied & Kazandjian 1999). Tens of similar ad hoc definitions are available in the literature.

Such a standardisation is sometimes acknowledged as a limit, but without it, valid comparisons across similar organisational units (e.g. hospitals) would not be possible. Comparison is indeed the key method used to assess whether an organisation is performing. If it is possible to identify another similar organisation facing similar constraints but achieving better the desirable goals, there is evidence that the assessed organisation is not performing.[112]

Many authors have also recognised that any assessment of organisational performance needs to adopt a 'multiple stakeholder' approach which allows for the "inevitable arbitration among competing values" of the various constituencies (Sicotte et al. 1998, p.

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[111] The most frequent theory mentioned is the principal-agent theory; but it is usually done in quite vague terms. An original contribution and systematic effort is the one by Sicotte et al.. They propose a theoretically framework grounded on Parsons' social system action theory (Sicotte et al. 1998). For a general review of existing 'theories', see (Teil 2002)

[112] Cf. for example, the technique of data envelop analysis for assessing the technical efficiency of hospitals.

38). However, theoretical justifications for such an attention are often basic. This reflects to some extent the confusion existing on the very concept of stakeholder, whose theoretical foundations are also shaky or at least confused (Donaldson & Preston 1995).

Giving firmer theoretical foundations to performance measurement

These general observations on health care organisation performance are certainly relevant. Yet, we believe that performance assessment would benefit from an approach that is less ad hoc. For instance, some theoretical foundations could provide some guiding principles for how many dimensions and which stakeholder perspective should be taken into account. This theoretical quest is not for its own sake; a major reason motivating it is that most of public health care organisations belong to the government or the private non-profit sector. Among other things, this means that they lack the key performance indicator that is used in the for-profit sector: the return on investment.[113] They are also less exposed to the mechanisms that enforce performance to for-profit organisations: market competition, bankruptcy… The related questions of why to measure performance and which performance to measure then are even more compelling and difficult to answer (Behn 2003).[114]

We believe the institutional economic framework could provide theoretical grounds to current practices in terms of performance definition and measurement.

Justifying a multiple stakeholder perspective

As a first step, one can note that the framework clarifies why a multiple stakeholder perspective must be taken: organisations are artefacts adopted by human beings to coordinate. It then makes sense that any individual coordinated is considered by the analyst. This proposition is interesting for three reasons.

First, it gives a simple reason for measuring performance: accountability. Every coordinated party may be interested in the outcome of the coordination. Yet, because of the asymmetry of information, no one has a global view. Performance measurement (and the dissemination of its result) is fundamentally a way to improve accountability to the coordinated parties. This information transfer allows them to take the decision they deem necessary.

Second, it hands us a clear and unequivocal definition of what a stakeholder is: any individual potentially affected in his economic property rights by the organisation. Such a positive view of the stakeholder, quite close in fact to Freeman's original one[115], takes its distance to more instrumental[116] or normative ones[117]. Furthermore, it provides us a list of possible actors to look at. A first short list would consist of only individuals in contractual relationships through the organisation. If we take the case of a hospital, one

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[113] A high return on investment indicates that the firm's business model is good, i.e. meeting a demand from customers within constraints of necessary inputs. This is a rather good proxy of the economic value of the activity.

[114] In the for-profit sector, a performance measurement approach will be validated if it helps the manager to develop a successful business. It seems that the Kaplan and Norton's balanced scorecard technique has passed such a test.

[115] Freeman defined the *stakeholder* as "any group or individual who can affect or is affected by the achievements of the firm's objectives" (Freeman 1984).

[116] In 1963, the Stanford Research Institute defined the stakeholders as "those groups without whose support the organization would cease to exist" (quoted in Donaldson & Preston 1995).

[117] For example, Donaldson & Preston defined the stakeholders as "persons or groups with legitimate interests in procedural and/or substantive aspects of corporate activity" (Donaldson & Preston 1995, p.67).

can see that this logic would already invite us to go beyond the sole perspective of the patients. It would include also the perspective of the health staff, of the suppliers, of the tax payers… But our definition invites us to go even further by considering also stakeholders who are not part of the contractual relationships making the hospital an organisation. One could for example include victims or beneficiaries of externalities (e.g. hospital neighbours).

Third, combined with a simple definition of performance as the achievement of desirable goals (by any stakeholder), such a view gives support to a multidimensional approach to performance: there are potentially as many definitions of performance as there are stakeholders.

An illustration may help at this level. In January 2004, in the frame of a research project called "Hospitals in Change", we facilitated a seminar in Nanning, China. Participants were health managers holding positions at county or hospital level. The main goal of the seminar was to develop together research frameworks and instruments for an evaluation of the performance of a selection of township health centres.[118] One of the exercises during the seminar was for the participants to identify key stakeholders of township health centres and to list what could be their respective definitions of performance. Our Table 5 reports the views of the workshop participants. We report only gross categories.[119]

The result is of course not surprising: different economic agents have different endowments and preferences; there are then high chances that they diverge on their expectations upon any given organisation. At least, the exercise shows that there are many more perspectives on performance than the few traditionally proposed.

[118] The sample for our study consisted of township health centres with the characteristics of small referral hospitals, including the surgical capacity.

[119] Interesting enough, the participants to our workshop sometimes deemed important to split a category in subgroups. For example, among patients, old people value particularly good attitude, politeness, consideration for their handicaps (slowness in movement and talk) and look for some guidance in the hospital. As their pensions are limited, they prefer cheap services. Handicapped people value what others value plus facilities for their specific needs: a lift, wheelchairs… Women may prefer female staff, especially for gynaecological problems. Ethnic minorities expect services available in their own languages. Workshop participants were also very specific in as much as staff are concerned. Partly a heritage of the decentralised Chinese socialist system where the company caters for his staff, hospital staff are a very influential stakeholder in Chinese hospitals.

Category of stakeholder	Their preferences towards the hospital
Clients (recipients of the main goods or services produced by the health care organisation) The patients	Patients value easy access (geographical, financial, cultural); availability of expertise and technology; high quality of services (kindness, politeness; respect of patient rights, including dignity, privacy, information, choice of doctors, hospital and regimen; a timely and accurate diagnosis; a relevant prescription of drugs; skilful nursing care; a delivery of drugs accurately respecting the prescriptions; nice facilities, including clean toilets and bathrooms, air conditioning, television, catering); quick and full recovery.
Their relatives	Relatives value recovery of the patient; easy access (visit hours); clear orientation information; welcoming staff; availability of extra services (e.g. a gift shop).
The healthy population in the vicinity of the hospital	Population values full availability 24 hours a day; capacity to deal with unexpected emergencies (i.e. medical expertise, diagnosis technology, surgical capacity, inpatient ved and ambulance); emergency preparedness for floods or industrial catastrophes; health education and promotion, especially in times of outbreaks.
Payers (individuals or organisations purchasing services from the health care organisation). The patients	Patients have different preferences according to their own ability to pay. Poor would like to get treatment for free; if this is not possible, they will prefer cheap treatments. Better-off will appreciate some partial waiver or discount. The richest are ready to pay more as long as the hospital responds to their own personal demands; they are not trying to bargain quality.
Third-party payers (e.g. insurance fund, the government)	For third-party purchasers, a hospital performs if it is cost-effective with their resources. Cost escalation is feared. In order to deal with such risks, the hospital is expected to co-operate (e.g. transparency through accounting, billing and utilisation data) and to stick to the agreement.
Suppliers (individuals or organisations selling goods or services to the health care organisation)	For suppliers, a hospital is performing if it is a good customer: i.e., a stable and important turn-over through orders easy to handle (e.g. a limited amount of items, no late cancellation) and deliveries with a high acceptance rate (e.g. a limited amount of refused products or complaints).
The staff	Staff are a specific supplier of services. Chinese hospital personnel value: material benefits accruing to each individual in reward of his own effort (income, health insurance, pension and other welfare package such as housing and recreational activities); good working environment (infrastructure, availability of equipment and technology, opportunities to fully display and develop one's talents including training, a high safety from health occupational hazards and a reasonable workload); good 'hospital culture' (quality of the management, fairness in the decision making, good image and reputation among other stakeholders, commitment of a unified staff); and protection and respect of different personnel's rights (private property, human rights including protection against abuse of power and rights to vote for representatives or to be elected).
Payees (individuals or organisations receiving payment from the organisation)	The suppliers will expect the due payment of their invoices (e.g. no delayed payment or default). Other formal or informal payees will assess a hospital's performance on its capacity to raise their own income.

Category of stakeholder	Their preferences towards the hospital
Owners (individuals or organisations holding residual decision rights) County health bureau	At the date of the study, township health centres were under the direct authority of County Health Bureau. In Guangxi, health bureau applies a multidimensional definition of hospital performance to assess the hospital managers. The list of criteria covers items such as: implementation of laws, regulations, health policies and guidelines; quality of the management (unified, cohesive and creative); quality of medical equipment, infrastructure and hospital environment; quality of services and treatments; high satisfaction rate among the population (over 90%); increase of economic and social benefits for the staff (at least 15% of annual growth rate of at least 15%); adoption of a complete set of management rules; financial accessibility of services; emergency preparedness through preventive and promotional activities, health care and health information system.; good collaboration with the external health system, through the management of private health care providers (including doctors and drug shops).
County finance bureau	From the point of view of the County Finance Bureau, hospital performance is: (1) normal hospital operations with as little as possible public money; (2) a management complying with laws, regulations and standards; (3) a good raising of income to develop the hospital.
Chinese Communist Party Committee	For the Party Committee, the hospital performs well if: (1) personnel is managed in accordance with regulation and policy; (2) there is a strong leadership; (3) the political thinking and ideology developed in the hospital is good; (4) workforce is steady, committed (no protest or demonstration) and hardworking; (5) the hospital delivers high quality care for a low price and high population satisfaction.
Non-transactional stakeholders (individuals or organisations affected in their property rights despite an absence of transaction with hospital owners or their mandated managers)	Beyond health care provision, the town community values the hospital as a major local employer and a service beneficial to other businesses. Other health care providers have an ambiguous view of the performance by the hospital. Those in substitution/competition relationship will define performance as the respect of the rule of the game (e.g. fair competition, no undermining of the sector's reputation). Those mainly in complementary relationship are in search of good collaboration. First line services (i.e. village clinics) expect some professional guidance and support. Third line services (county or city hospitals) expect appropriate and timely referrals. Media have not much to say today on hospital performance in rural China. But, there will be a time, as anywhere else, that transparency by hospital managers will be their key criterion (and maybe also 'nice stories'!).

Table 5: what is a performing township health centre in rural China? (an exercise)

Selecting the stakeholders of focus

As a second step, one can wonder how an analyst willing to adopt such a 'multi-stakeholder accountability' perspective has to handle the multiplicity of views.[120] Obviously, integrating the perspective of all the stakeholders in the performance assessment is not practically feasible. The normative issue now is the choice of the stakeholder(s) of focus. This choice of course already came up at the stage of designing the reform: on whom should fall most of its benefits? It comes back at the stage of the evaluation: on which stakeholder class should the analyst focus?

[120] There may be situations where the analyst does not endorse such a societal perspective. For example, a principal may want to evaluate the extent to which a pre-agreed list of key indicators has been attained by its agents.

We know from the institutional economic framework that all individuals matter in a coordination process; only individuals have some intrinsic value (cf. our quotation of Milgrom and Roberts in our chapter 4). Henceforth, there is no *a priori* reason to exclude any stakeholder from a performance analysis. Hospitals have to treat their patients well and use their budgets in a cost-effective way, but they have also to limit pollution[121], to duly pay their staff and other suppliers, to respect minorities, to provide a safe environment to all their users… Hospital managers are of course very aware of that.

Yet, as already said, the evaluator has to narrow down his analysis. More fundamentally, the reformer must identify which stakeholders should be the main beneficiaries of the reform. We see at least two possible criteria.

A first possible criterion could be (related to) efficiency. The idea would be to focus only on the stakeholders who are in a weak transactional position because of some market imperfections. The rationale behind this criterion is that market imperfections are possible sources of inefficiencies: there is therefore a need to monitor how the weakest party (transacting or not) is affected. If one applies this 'market imperfection criterion' on a rural hospital's stakeholders, this could mean that the performance assessment includes the perspectives of the owners (who have a contract with the hospital manager), of the patients (who are facing a monopolist and an informational asymmetry in respect to the quality of care they receive), of any third-party payer, perhaps of the health staff (who may have made or have to make some specific investments) and of victims or beneficiaries of externalities, but probably not the one of the shopkeeper which supplies from time to time the hospital with stationary (the hospital is just a customer among many others).

The second possibility would be to fully endorse the normative character of the selection of stakeholders of focus. Along this approach, the reformer/analyst would announce from the start the conception of social justice that he used as a reference. He would then derive from it a list of basic property rights that should be satisfied. The exercise would then simply consist to check to what extent the actual (economic) property rights meet those dictated by the social justice view. Stakeholders for whom the comparison is unfavourable without a doubt would receive prime attention.[122]

In Table 6, we give an illustration for these two criteria for the case of a few stakeholders of a rural hospital. The illustration shows that the two criteria are consistent for several stakeholders.[123]

If our propositions are correct, we see that the practice of adopting narrow definitions of performance (in terms of the number of stakeholder perspectives) is not at all illegitimate. Yet, if correctly practiced, it would require: (1) a due attention to the context and the general institutional arrangement; (2) some motivation for the classes of stakeholders that are covered by the performance study; (3) some justification for the fact that other stakeholders are not considered. While the inclusion of the patient perspective looks obvious in the performance assessment of any health care organisation, the exercise may reveal to the analyst that he may need to be more inclusive in his specific situation.

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[121] The analysis can be inclusive to a level that it includes also future generations.

[122] A limit of this approach from a policy perspective is that the discrepancy in terms of rights may have its origin elsewhere than in the health sector. For example, the limited property rights of the employees may stem from major deficiencies in the labour law.

[123] For ex post evaluation, there is a third option, which is a variation of what we have mentioned in our footnote 120: the organisation is effective to the extent that it fulfils its mission, as defined by the owners.

Stakeholder class	The 'market imperfection' criterion	The social justice criterion
Owners	There are asymmetries of information between the owners and the hospital manager. Is he exerting maximal effort to attain the goals assigned to him?	For most social justice theories, ownership and contractual rights are fundamental rights.
Households and patients in particular Some sub-groups of patients	The hospital is a local monopoly for inpatient care. This may lead to slackening by health care providers. There are major informational asymmetries on the quality of care. This may lead to moral hazard by health care providers (capture of economic rights left in the public domain by households or the government).	For most social justice theories, health is a fundamental right. It is the responsibility of the State to ensure access to a basic package of good hospital care to all. The provision of care process should respect autonomy, dignity, privacy… Some patients encounter some specific barriers in their utilisation of the hospital services (e.g. poor, elderly, minority ethnic groups…). The responsibility of the State is to address these barriers.
Staff	The government may be a monopsony (if regulation for private practices is very strict): the staff may then be depending on the government for their income and career. If the government is not credible in its commitment, some staff may be reluctant to make some specific investment (e.g. build a reputation as a good manager). Hospital activity generates risk for the personnel (e.g. contamination with sharps). There are informational asymmetries among the medical staff. This may lead to moral hazard in terms of contribution to the profession reputation.	There are some basic social and political rights at stake: right to gather, right to unionise, right to elect representatives…
Third-party payers and their original contributors (insurance members, local tax payers, tax payers abroad if assistance)	There are major informational asymmetries on the hospital manager's efforts and the users' needs. This may lead to adverse selection (if the third-party payer is a voluntary insurance) or moral hazard by the provider or by the user.	No other major rights at stake than the contractual ones (including right to accountability). Yet, the third-party is often a mechanism to enforce the rights of users (see above). The involvement of the State comes from citizens rights. In many low-income countries, democracy is not fully effective.
Supplier of stationary	No market imperfection.	No major right at stake but the respect of private ownership.
Households in the vicinity	There could be negative or positive externalities.	Right to a safe living environment.

Table 6: arguments for focusing on some stakeholders for the performance assessment, example of a rural hospital

Selecting the dimensions of focus and the trade-offs

At this stage of his assessment, the performance analyst may have decided to look at a couple of stakeholders; for example, the owners (let us assume the Ministry of Health) and the clients. The next question is how many 'outcome' dimensions he should look at. As illustrated with Table 5, a same stakeholder class may value several dimensions. Patients may value quality of care measured in terms of effectiveness of the treatment and quality of the services (e.g. amenities, respect of dignity). The Ministry of Health may value many dimensions, but one can suspect that achievement of its declared policy objectives (e.g. delivery of a basic package of effective activities to all citizens in need) with efficient use of the resources under its control will be a key issue. Many other goals are of course possible and legitimate. For instance, in its World Health Report 2000, the WHO proposes that the government should also have a concern for welfare protection and for the distribution of outcome measures across socio-economic or demographic groups (WHO 2000).[124]

The next question is how to compute a performance assessment from the selected different dimensions. Providing league tables for the different outcome indicators is a first step. It allows the analyst to examine how different organisational units (e.g. health care organisations) perform on each outcome variable. There are mainly two ways to synthesise this information into one performance ranking. One approach is to compute an aggregate index score taking the different outcomes as many different components and then rank the units according to their index score. This obviously requires the attribution of weights to the different components of the index, which is an arbitrary step. Another approach, purely ordinal, would be to check how units dominate each other (or not) across outcome indicators, this to identify for instance units which are never dominated (Tulkens 2007).

Measurement of the efficiency raises other challenges. If organisational units are homogenous in terms of resources, the above ranking is sufficient. If not, there is a need to compute an efficiency measurement (e.g. cost-effectiveness study). Since the WHO report 2000, everybody knows that this does not go without major methodological difficulty and many normative choices (Murray & Evans 2003; Hollingsworth & Street 2006).

Any relief from organisation economics?

The theory

One could wonder whether organisation economics offers another track to deal with this multiplicity of stakeholders and dimensions of performance. Furthermore, one should note that our own research question has not much to do with comparing organisational units. Our need is to be able to compare alternative institutional arrangements for a given organisational unit (e.g. should the hospital introduce a special bonus scheme to remunerate its clinicians; and if so, what is the best scheme?).

An idea would be to apply to an organisation the same approach than the one applied to the market: to which extent do the institutional arrangements lead to an efficient outcome? For assessing allocation of resources, economists have adopted a simple but already quite powerful criterion: the Pareto efficiency. According to this criterion, a situation is efficient when it is impossible to make someone better without making someone else worse.

[124] One then approaches the economic concept of the 'social welfare function'.

However, transferring this criterion to assessing the relative merits of alternative institutional arrangements raises a problem: nearly all institutional arrangements appear efficient, as it will often be impossible to find an arrangement better in every possible circumstance.

In their textbook, Milgrom and Robert propose to use a less strict formulation: "An organisation is inefficient if there is another that does better for each person on average across the circumstances in which the organisation operates" (Milgrom and Roberts 1992, p.24). Normally, such specifications narrow the class of organisations that meet the test of efficiency.

This remains a formula. For assessing efficiency of organisations, we have to compare outcomes. In order to facilitate their computation, New Institutional economists have advanced a simplifying rule: the Value Maximisation Principle.[125] According to this argument, we should assess performance of an organisation on the aggregated value (in monetary terms) created for its stakeholders. With this principle, distributive issues are separated from the issue of how value is created. There are however conditions for the Value Maximisation Principle to hold. One is the absence of wealth effect[126]; another is that transaction costs are limited. If this condition does not hold, compensating transfers – still a hypothetical exercise at this stage of the thinking – cannot be organised between the stakeholders.

Any relevance?

Most nonprofit and public sector analysts are quite reluctant to apply this approach to their field of study. Four reasons can be put forward. First, in many cases, the assumption of absence of wealth effect is not satisfied. For sure, one can have major doubt on the validity of this assumption for the situation of health care organisations in low-income countries. For some stakeholders, there is no compensation possible (health care is sometimes a matter of life or death). Furthermore, most individual stakeholders are really poor. The hypothesis that poor households would be able to compensate health personnel for obtaining their acceptance of a new institutional arrangement is simply absurd. Even if there was no wealth effect, the analyst may bump into a second difficulty: the calculation of the aggregated value. As the goods and services produced by the organisation under consideration are often not traded on a real market (e.g. free provision), the exact value created by the institutional arrangement can be difficult to assess; the undertaking of a willingness to pay survey, with the limits it conveys, will be inescapable. The third reason is more fundamental, and is particularly relevant for public sector organisations: in many cases, the goods and services that they provide have major implications in terms of social justice and ethics (this character is often one of the reasons why the good or service is not traded on the market). Efficiency (obtained from individual valuation) cannot then be the only criterion to assess the institutional

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[125] "An allocation among a group of people whose preferences display no wealth effects is efficient only if it maximizes the total value of the affected parties. Moreover, for any inefficient allocation, there exists another (total maximizing) allocation that *all* of the parties *strictly* prefer" (Milgrom & Roberts 1992, p.36).

[126] "We say that there are no *wealth effects* for a certain decision maker with respect to a set of possible decisions when three conditions hold. First, given any two decisions y_1 and y_2, there is a definite amount of money $\$x$ that would be sufficient to compensate the decision maker for switching from y_1 to y_2 (or from y_2 to y_1). Second, if the decision maker were first given an additional amount of wealth, then the amount needed to compensate the decision maker for the switch from y_1 to y_2 would be unaffected. Third, the decision maker must have enough money to be able to absorb any wealth reduction necessary to pay for a switch from the less preferred to the more preferred option" (Milgrom & Roberts 1992, p.35).

arrangement. Fourth, transaction costs for organising the compensation transfers can be high in the social sector (e.g. collective action problem in case of a quasi public good).

Having said this, there are also reasons to suspect that these restrictions are debatable, as far as the reform of public health care organisations in low-income countries is concerned. First, in such countries, reforms are largely financed thanks to external aid. This greatly relaxes the challenges related to organising compensation transfers to possible (short-term) losers. Because of their stricter rules in terms of accountability, the involvement of aid agencies improves also the enforcement of the compensation scheme (if any is required).

Second, as far as willingness to pay is concerned, the main stakeholders that matter are the donors, the government and the staff. Wealth effects are less present at their level. Furthermore, in many low-income countries, partly because of the low-performance of the public sector, there is a quite developed market for health care. This is particularly the case in Asia. In such a setting, it would probably be technically possible to have rough estimates of how much average households would be ready to pay to obtain improvements in terms of accessibility and quality of care. As far as the willingness to pay (of the donor or the government) is concerned, such estimates are straightforward if a unitary output-based approach is adopted (see part two of this thesis).

Third, one must acknowledge that some equity aspects are contractible by a third-party payer (e.g. proportion of poor households benefiting from a service); this means that one may have some estimates of a willingness to pay for equity by the third-party. When the stakeholder 'household' is poor and the stakeholder 'third-party payer' rich and really committed to help them (e.g. a donor), this has to be taken into account.

In fact, Cambodia provides good examples for all that. Donors, aid agencies and international NGOs have used their financial leverage to induce institutional reforms. Among the different aid-assisted experiments, one was called the 'New Deal'. Its main objective was to obtain better services to the population in exchange for better work conditions and income for the staff. Part of the arrangement relied on an increase of fees to be paid by the users to improve income of the health staff (Van Damme et al. 2001). This increase in user fees was inspired from the observation that households were spending huge amounts in the private health sector (so there was evidence of a latent willingness to pay for better services). Eventually, the health equity funds are one of the best examples available today in low-income countries of a contracting of equity indicators. Observing the enthusiasm of all the stakeholders for the strategy – there were only winners, we have talked in a report of a 'cornucopia of benefits' (Meessen B et al. 2002).

In all, organisational economics proposes an original way to formalise the organisational performance. By strictly referring to the aggregate value created by the stakeholders through the institutional arrangement, this approach does not require the analyst to refer anymore to any specific organisational goals or indicators.[127]

To our knowledge, this approach has never been applied ex ante to estimate the possible efficiency gains from a given reform of some public health care organisations in

[127] However, the willingness to pay will have to be formulated on a few key measurable dimensions of the benefits possibly obtainable by the different parties from the reform.

a low-income country.[128] Valuation of the benefits and loss at stakeholder level would require some specific data collection. A major limit of such a technique for guiding a decision by the policy makers would be the reliability of the valuation estimates.

A plea for pragmatism

These theoretical and empirical issues discussed, we would like also to advocate for pragmatism. The most appropriate method to assess the efficiency of a reform in a developing country is probably to experiment it first at small scale. If combined with a good research design, a pilot experiment will reveal whether the experimental institutional arrangement is superior to the original one; furthermore it tests the model in a real situation and triggers a learning-by-doing process.

The documentation should particularly try to measure: (1) whether the intended beneficiaries do actually benefit from the institutional change (both intended and unintended consequences must be reviewed); (2) whether this benefit is due to a revision of the property rights on the existing resources and not due to other effects (e.g. Hawthorne effect, income effect); (3) who are the losers in the short-term (if any), if their loss is regressive or progressive in terms of equity and if they are in a position to oppose a scaling up of the institutional change (i.e. a real reform), how much would cost the necessary compensation to get a buy-in at national level; (4) if there are any possible losers in the long-term.

The key advantage of the pilot experiment is that it offers the best imaginable indicator of an efficiency enhancing reform: the fact that afterwards, all the stakeholders are willing to adopt the experimental institutional arrangement as the new national policy. This is the indicator we used for the two institutional reforms presented in the second part of this dissertation. We are indeed lucky that both of them became national policies.

Our approach in this thesis

In this section, we have put forward a few principles which can guide us in the formalisation and measurement of performance of health care organisations. The main issue is to select the stakeholders of focus and clarify their own perspectives on performance. We have presented two approaches for the selection of stakeholders.[129] The first one tries to identify the major market imperfections and the possible losers in terms of economic property rights. This approach requests a general analysis of the institutional arrangement. We will dedicate our next chapter to this exercise. The second approach implies endorsing a normative stance, ideally based on a social justice theory.

Our task here is certainly not to review the whole array of social justice theories. If we refer to work done by others (Schneider-Bunner 1997), one can at least note that with the exception maybe of libertarian philosophers such as Hayek and Nozick, most political philosophers seem to agree that health has a special moral importance or that health care is a special good (Anand 2004; Sen 2004; Schneider-Bunner 1997). It is certainly the case of Rawlsian-inspired theories, which stress, among other things, the importance of equal opportunities (Rawls 1971; Daniels 2008), the right of everyone to a sufficient capability set (Nussbaum 2001) or to an unconditional basic endowment (Van Parijs 2004).

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[128] Yet, there must exist willingness-to-pay studies done in preparation of the introduction of health insurance schemes.

[129] Giving clear directions in terms of stakeholder of focus has been a challenge for many stakeholder 'theories' in the past (how inclusive should one be?). Our first proposition is not too far from the proposition made by Hendry (Hendry 2001).

Most theories of justice have not been developed to arbitrate choices at organisation level. A very valuable contribution certainly is the one by Norman Daniels, who has extended Rawls' theory to the health sector and identified benchmarks to assess the fairness of a health sector reform (Daniels et al 1996).

As evidenced by application to developing countries (Daniels et al. 2000; Daniels et al. 2005), his work offers an excellent base camp to support our focus on **vulnerable user groups**. For instance, an equal opportunity reasoning gives, for biological reasons, a preference to **children and women** (who face extra-risk by their child bearing aptitude), but also, for social reasons, to **poor individuals**. Given the fact that around three quarters of world poor live in rural areas, it seems necessary to focus on **rural households**. As far as these groups are concerned, scholars and the common public agree that their economic property rights on health care assets are significantly inferior to what is required by basic human rights standards. The situation of the poorest is particularly miserable.

We believe also that most social justice theories would recognize a key role for the government (e.g. the stewardship and enforcement of the social contract) and therefore support the adoption of the Ministry of Health's perspective (at least the official one).[130] In this respect, making sure that the basic package of activities, usually heralded as the corner stone of the national health policy, is delivered in a satisfactory manner to all (i.e. *universal coverage*) seems a very appropriate formulation of the health system's performance.

Conveniently, this is decomposable at health care organisation level: the minimum package of activities then serves as a benchmark for health centres, the complementary package of activities as a benchmark for referral hospitals. **Coverage rates** (completed with benefit-incidence analyses to measure the fair distribution) are then already fairly good proxies of the extent to which a rural health system and its components achieve the desirable goals. Benchmarking equivalent organisational units against each other can provide a rough estimate of respective performance.[131]

As a matter of fact, this approach, which will be ours in the rest of this thesis, is very much in line with declared objectives and practices of many governments and their partners. This has at least been true since the Alma Ata Conference, but has recently even been reinforced with global initiatives such as the poverty reduction strategies and the Millennium Development Goals. No doubt, the expert community supports the view that poor rural households should be the first beneficiaries of any reform (Gwatkin, Bhuiya, & Victora 2004).

Adopting such a focus in our dissertation does not mean of course that attention to other stakeholders and to other dimensions of performance would not be appropriate. A key concern for us at this stage is to keep the argumentation simple and to illustrate the power of the framework. The very nature of the reform and more particularly the health care services it affects may require to adopt other perspectives and indicators (if data

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[130] Libertarian philosophers, who are quite reluctant to recognize a role for the State, would greatly limit the perspective of the State. In fact, one can even doubt whether someone like Hayek would have seen much reason to give a privileged status to the users (versus for example suppliers or staff). For him, all agents interacting through the organisation are on an equal footing in their exchange of property rights.
[131] The performance assessment can of course be sophisticated by integrating information on production and transaction costs in order to compute some efficiency measures.

availability allows it). There is a whole expertise in terms of health care intervention assessment to tap.[132]

[132] If the institutional economic framework recommends anything it is maybe to consult stakeholders of concern on the dimensions they care for. Interestingly enough, many standard dimensions proposed in the literature are in fact quite well capturing the main concern of some key stakeholders (the tax payer values cost-effectiveness, the user cares for effectiveness, the health care practitioner for compliance with professional standards…). Dimensions sometimes referred to by performance analysis as being more organisational objectives (e.g. revenue generation) are in fact stemming from the fact that some stakeholders have stakes at long term (e.g. the staff, the local authorities)

A summary

In this chapter, we have laid down our analytical framework. One of the main concerns behind this dissertation is to be responsive as a scientist to the realities observable today in low-income countries. In this chapter, we have shown that our framework has several attributes particularly promising to the eyes of the health system analyst.

We believe that the framework has the necessary descriptive power to seize and summarize the dominant traits of a public health system in a given low-income country. This will be further evidence in the next chapter. In this chapter, we have already explained how to tap our framework for empirical work.

Our framework is not a theory; by itself, it has a limited analytical power. Yet, it already identifies variables deserving attention. Its core focus is on the property rights hold by the different economic agents interacting through the health care organisation. Its main proposition is that any behaviour is the result of the property rights structuring established by the existing institutions.

While the framework does not establish causal directions between variables – this is the role of theories and models – it already allows to identify variables susceptible to be instruments for those willing to induce behaviour change in order to affect performance of health care organisation. This brings the focus more on institutions.

Performance is a much used concept in the literature, but it lacked so far clear theoretical foundation. In this chapter, we have tried to do a step in this direction. While the framework justifies a multi-stakeholder perspective, it also gives directions on how to narrow the analysis on a few stakeholders. Our own focus in the rest of this thesis will be on rural households and poor households in particular. Performance will mainly be assessed in terms of utilisation and coverage rates.

Throughout this chapter, we have also provided some indications that the framework has some argumentative power. One of its main qualities is to dismiss several conceptual ambiguities that have probably impeded scholars to develop consistent institutional analysis of health systems, in spite of the proclaimed interest for the endeavour. The framework may serve also as a metatheoretic bridge between economists and health system thinkers trained in other disciplines. Most contemporary health policy makers are not economists: acknowledging their own approach in terms of conceptual discourse can only improve the impact of health economic thinking on health system reform.

If the institutional economic framework may not be a breakthrough for the thinking of health systems in high-income countries, we believe that it has not yet marked enough health system thinking in as much as low-income countries are concerned. Our next chapter and the whole second part of this thesis develop this argument.

CHAPTER 8: AN INSTITUTIONAL ANALYSIS OF RURAL HEALTH SYSTEMS IN LOW-INCOME COUNTRIES

"If jobs and remuneration in the civil service were more linked to achievements in utilization, coverage and quality, and not automatically guaranteed once a person entered the service, there would perhaps be more achievements to record."

Irene A. Agyepong, District Medical Officer, MoH Ghana (Agyepong 1999)

In chapter 1, we have presented the general organisation of the public health systems in rural settings. We have paid peculiar attention to two key strategies adopted by many low-income countries: the health district and user fees. We have reported the disappointing results achieved by these two strategies in many countries and the standard explanations provided to explain these outcomes.

We certainly do not deny that the general context, the underfunding of the health sector and the inadequate implementation of these strategies have been major constraints to the development of rural health systems in many countries. Yet, another (non-exclusive) hypothesis inspires this thesis: the poor performance of rural health systems stems (also) from the underlying institutional arrangements.

Equipped with the institutional economic framework, we can now try to develop an argumentation supporting this hypothesis. As mentioned in chapter 7, there are mainly two steps to conduct an institutional economic analysis: to map the distribution in the property rights and to analyze the property rights structuring.

8.1. MAPPING PROPERTY RIGHTS IN RURAL PUBLIC HEALTH SYSTEMS

Property rights on the main inputs

In our previous chapter, we have argued that the description of the distribution in the property rights is a prerequisite for the analysis of their structuring. This description is necessary for the positive analysis of property rights structuring (what are the incentives in place?) but also for the normative assessment, as it helps to identify stakeholders who are in an unfavourable position in terms of property rights enforcement, and therefore whose perspective should be taken for performance measurement.

We propose to develop such a description for a few key assets; for each of them, we will successively provide the main holders of the utilization, transfer and earning rights. While situations may slightly differ across countries, we will refer to the situation the most frequently observable in low-income countries. Here and there, we will make specific references to Cambodia or Rwanda.

Real estates (land and infrastructure)

In many low-income countries, the land and the buildings (health centres, the referral hospital and the district office) are government's properties.[133] Utilization rights are largely in the hands of the health staff appointed by the government (or by the district manager if appointment rights are decentralized, see below) to work in the health facility. Yet, possibilities of private capture are quite limited; in most countries, individual private practice within the public compound is forbidden and does not take place (if we make abstraction of the transactions with an under-table-payment), probably because of peer pressure.

As far as the buildings are concerned, transformation rights are usually controlled by health authorities at a higher level: the district manager, the provincial health director if there is one, or even some administration at central level. Households have the relatively standard utilization rights of a clientele: they can move in the building, wait in the waiting room and enter a consultation room when they are invited by the personnel. The plot is usually fenced and the building closed before or after working hours. In some large hospital compound, some small shops are allowed to do business during the day. In many low-income countries, accompanying relatives live in the hospital during the hospital stay period; they sleep in the hospital compound. These are rarely rights with a formal status.

In most countries, transfer rights are firmly held by the government. Challenging this would amount to challenging the State. If any sale had to take place, it would require the agreement of different official levels. Recent history in Cambodia has shown that in places where the real estate market experiences a boom, such sales could be a very tempting lucrative activity for a few government officials. This indicates that a share of the earning rights from the sale of real estates can be privately held by the individual officials mandated to giving the green light for such transactions.

Movables (equipment, vehicles)

In most low-income countries, durable movables (medical equipment, furniture, vehicles) present in the health facilities are government's properties. Utilization rights on these resources are mainly held by the personnel working in the health facility. Private abuse of medical equipment and furniture is usually rare: these movables are heavy and taking them home does require extended complicity, as staff is usually very well-informed about the equipment in its health facility; private capture can only go through under-table-payment. Utilization rights on vehicles are susceptible to more private capture. For instance, in some places, the ambulance is used by the hospital management for less urgent and more private purposes as well.

Transfer rights on movables are rarely decentralized at facility level. Some institutions are established to avoid theft and embezzlement. In well-managed health districts, yearly inventories are made; this information is transferred to the district office. The district office has usually authorization rights on the sale of redundant or too old equipment. However, in many places, there seem to be unclear transfer rights on the unnecessary assets. Much more than theft, the standard outcome is an accumulation of ruined vehicles and broken equipment at health facility level. As the transfer and earning rights are not secured and the possible benefits are limited, these assets often stay in the public domain with no one trying to capture them.

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[133] For missionary health facilities in sub-Saharan Africa, these assets are owned by a religious congregation, the church or the parish.

Drugs and consumables

Drugs are key inputs in the production of health services. Standardizing them in terms of nature, name and dosage is a key mechanism to drastically reduce enforcement costs on their utilization. Utilization and transfer rights on drugs and consumables are usually very well defined in public health systems of low-income countries.[134] This is to a large extent the result of an effort at global level since the mid-seventies. A milestone was a WHO expert committee in 1977, which established the *essential drug list* strategy (WHO 1977). The main goal of this strategy is to promote drugs that are really effective and cost-effective. In the follow-up, WHO developed a whole program to support countries to adopt and implement their own national drug policy. The Ministry of Health has several instruments to enforce this policy.

A major instrument is the Ministry's control on the supply chain. A standard mechanism is the obligation for public health facilities to procure their drugs from a public medical store distributing only essential drugs. For example, health centres will order their drugs from the health district store, which itself obtains its drugs from the national medical store. Reciprocally, these public medical stores are often only allowed to supply public health care organisations. The flow of drugs and consumables in the public health system is determined by a whole set of rules. The ordering process is established by a set of institutions backed by management tools (e.g. order forms, stock cards) which establish the information to provide or to record in order to access the drugs or to dispense them. Across countries and items, different systems are applied. For some items (e.g. vaccines), the health facility has limited decision rights on the quantity to receive: it is decided by a central authority according to a population-based formula, some quotas or the availability of stock. Such a '*push system'* is sometimes also practiced with drugs (through *kits*). Yet, in most countries, health facility staff have some influence on the quantity of drugs they will receive. This influence can range from the ability to report more cases than in reality (in order to motivate a greater delivery by the central medical store) to a full-blown *pull system*: facilities have decision rights on their orders. Drug logistics is also about their storage. The Ministry of Health enforces its policy in this respect mainly by providing the relevant facility to its health organisations (e.g. a cold chain, buildings equipped with a storage room, a cupboard for narcotics…).

As far as drugs are concerned, the key utilization rights are of course the ones about their final transfer to a patient. This transfer must be done on appropriate medical basis. In this respect, the Ministry of Health has several enforcement methods. The most important one is certainly to appoint only qualified professionals in its health facilities and have clear job descriptions as far as drug prescription is concerned; a cleaner for example is not expected to deliver drugs. Yet, human resource shortages and the practice to train community workers have blurred frontiers in some very poor countries. The minimum package of activities is also a useful institution to control the utilization of drugs. For instance, the list of essential drugs accessible by a health centre (a level where, in most countries, there is no doctor) will be much shorter than the one that applies for the ambulatory consultation at the referral hospital.

The essential drug guidelines, i.e. standard protocols which determine the relevant treatment for a given diagnosis, are another component of the national drug policy. These guidelines are usually produced jointly by international experts and national clinicians. In most countries, the health district team is expected to enforce these

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[134] To a large extent, the final utilisation of a drug consists in its physical transfer to a patient; henceforth, for this item, a joint discussion of the utilisation and transfer rights is easier.

guidelines, mainly through routine supervision. The general assessment is that supervision sessions reach a limit at this level. In many countries, there is also a rational drug use program in place; one of its main objectives is to fight against over-prescription of antibiotics and injections. Adhesion to the rational drug use policy is usually pursued through regular training (the main underlying assumption seems to be that deviance has its origin in lack of knowledge). Rational drug use is monitored mainly through random surveys and reviews of drug management tools (prescription forms, movements in and out on the stock cards).

Despite the fact that all these institutions constrain the utilization of drugs, it is obvious that there are substantial residual decision rights that remain with the writer of the prescription. For most diseases, key health parameters are indeed not verifiable ex post by a third-party: monitoring of the diagnosis would require the third-party to be present during the consultation.[135] This limited verifiability means that any health system has to accept to transfer significant prescription autonomy to the health care provider. Some trust is unavoidable. There are mechanisms to build trust. Obviously, patients have the utilization rights on the pills they bring home.

Beside its medical dimension, the prescription of drugs also has an economic dimension. In most countries, it is usually well specified. The central government will determine some key aspects, for example whether the drugs are delivered free of charge or not. The orientation adopted towards the final users determines to a fair extent how economic transfers are organized upstream. For instance, in Rwanda, health centres charge the drugs to the patients; the health centres have themselves purchased at full cost the drugs they prescribe. In Cambodia, health centres provide drugs for free (yet, the patient has to pay a small fee to access the consultation); their supply from the district medical store is also not rationed by any price.

If user fees are the national policy, payment formula (e.g. lump sum, fee-for-service), prices to be charged or maximum mark-ups will often be determined by a relatively high authority (e.g. the Ministry of Health). The national policy may allow for some range of manoeuvre at facility level; any policy specific to the health facility is enforced to the personnel and users by the health facility management.

Some tablets are very valuable (e.g. antiretroviral treatment); as they are tiny items, capture costs are not high for the staff handling them. Any health system has to incur some enforcement costs to protect its drugs from pilfering. Supervision by an authority is one track. In many French speaking sub-Saharan African countries (including Rwanda), the Bamako Initiative has led to the establishment of 'health committees', i.e. bodies made up of community members whose main role is to secure the economic viability of the health centre. They usually enforce tight control on the drugs and the income they generate. The existence of such a committee establishes checks and balances within the health centre.

Eventually, let us keep in mind that drugs are perishable. A key institution to manage this issue is the obligation for drug producers to inscribe an expiry date on the boxes or the blister. In the health district, the way to dispose of or get rid of expired drugs is usually determined by some institutions. The economic loss due to drug expiry can be considered as negative earnings. In a pull system where the health facility has acquired ownership on the drugs through a payment, this loss will be borne by the health facility. In push systems, the loss is usually borne by the central government.

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[135] This is less true when there is a diagnosis test and a preservation of the biologic sample.

Workforce

Governments have nationwide ambitions for the provision of health services. Furthermore, services range from activities requiring limited technology and expertise (e.g. health education program on safe water storage) to technology- and skill-intensive activities (e.g. major surgical interventions). Recruitment of human resources with different skills is required.

The labour contract is the key institution for an employer to rent time, skills and effort from an individual. For obvious reasons, some major rights, especially in terms of transfer, always remain with the individual. In most low-income countries, health staff (at least qualified personnel) have a civil servant status. The civil service contract is a particular one. The main benefits for the employee are traditionally job security and the entitlement to a public pension. The income usually consists of a fixed component (decided at central level) plus compensations for different extra risks or efforts. In the public service, human resource policy (including promotion and sanction) is established by strict rules. These rules are intended to protect individuals against arbitrary decisions, especially those that could be taken by the government in power. Whereas health civil servants' contractual rights have suffered from serious erosion in many sub-Saharan African countries during the eighties and nineties (e.g. payment of salaries with huge delays, devaluation), the fact that most rights apply to the whole community of civil servants enhances their enforcement.

Civil servants are the manpower of the State. Through the civil service status, the State tries to acquire loyalty from its employees; this is particularly crucial for activities that may go against some private interests (e.g. law enforcement). More tangibly, the State acquires some key rights on the individual workers' skills and effort. These rights are delegated to a line ministry (e.g. the Ministry of Health) which may transfer a portion of these decision rights to a peripheral unit (e.g. the health district).

A first bundle of property rights concerns employee selection. In small countries like Cambodia or Rwanda, these rights are usually held by the individual and the central government. One can often observe the following situation: (1) the recruitment ('hire') is done at central level; the central level and the individual share the decision rights on the allocation of the person; the central level and the individual keep most of the decision rights for the termination of contract ('fire'); yet, the latter is quite rare on individual basis[136]; (2) the district office has some allocation rights on the individuals allocated to the district; in many places, the district director has formally the decision rights to move a staff member from one health facility to another; in practice, the institution is more a negotiated agreement between the district director and the individual[137]; (3) a health facility manager has quite extensive allocation rights within his health facility (of course within the limits of the technical profile of the individual); a hospital director can decide to move a nurse from one ward to another; in good health districts, the district director does not interfere in this allocation decision.

Besides recruitment and allocation to a position, the Ministry of Health can enforce its decision rights on the utilization of someone's skills and time mainly through three means.

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[136] In the health sector, the main mechanism to sanction an individual harshly is to appoint him in another location particularly unpleasant or in a position where he will do less harm.

[137] In some countries like Cambodia, this negotiation induces financial transactions; some lucrative positions are put 'on sale' by the director.

A first mean is its control on complementary assets. Land, building, equipment and drugs are necessary to deliver many health services. By deciding on the location of the health centre, the size of the building, the endowment of equipment, the list of essential drugs and the number of colleagues, the Ministry of Health is able to shape the practice of the individual staff member. This mean is rather soft, as it is mainly about facilitating the production of services valued by the government.

The second mean of control is the authority of the hierarchy, as agreed in the civil servant contract. For some tasks, the command and control can be organized at a distance. For example, the central level can request the health facility manager to complete a given procedure (e.g. fill in a form) in order to benefit from some resources. This is the backbone of the planning – budget process in public administration: (1) the subordinated level develops a plan and provides contextual information; (2) the authority assesses the plan (its content but also its form), approves it (or requests some changes), releases resources; (3) the authority monitors the completion of the plan. For other tasks, the Ministry of Health has to perform some physical verification.

A bit paradoxically maybe, a third mean for the Ministry of Health to enforce its utilization rights on staff is the promotion of participatory processes. Health production is to a large extent a team work. This creates opportunities for people to interact, to substitute for each other, to share ideas, but also to put pressure on their colleagues for the implementation of agreement. To the extent that a Ministry of Health would manage to have enough individuals very committed to its policy, such mechanisms could favour the pursuit of its own objectives.

We have seen in chapter 1 that the health district strategy is a subtle balance of command-and-control, decentralization and team work. For instance, the centralized definition of the package of activities determines the different assets allocated to a health facility, which itself constrains the actions possibly taken by a health staff member. We have also seen that the district strategy, by design, is an attempt to decentralize decision rights but also monitoring functions to a health district team (cf. the supervision function); the idea is to seize efficiency gains from their geographical and sociological proximity to local actors, health facilities in particular. Participatory processes are present both at management and service delivery levels; meetings to share information, plan action and review progress are a key mechanism.

Yet, these enforcement strategies have obvious limits. As is evidenced by the flourishing of private practice even in the countryside in many low-income countries, the government has not a monopoly on complementary assets. Drugs for instance are available on the market. Even more, the Ministry of Health may have limited control on its personnel. In Cambodia, most of the qualified health staff have a private practice besides their public activities.

Hierarchy is a more stringent enforcement tool. Yet, it runs into the huge asymmetries of information between the central government and its agents, the health district team and the frontline agents. Health managers can easily attribute low performance (if it is measured and observed by a supervisor) to external factors.

Finally, as a hierarchical administration, the Ministry of Health rests on its managers to adopt participative management styles. Some prefer more autocratic style of leadership.

All this makes that a health staff member may keep extended decision rights on the utilization of his time and skills. No one is in the consultation room to check whether the

doctor is really conducting a 'state of the art' patient examination. As a group, staff members may also collude against their monitors. Peer pressure plays in two directions.

As far as earning rights are concerned, they are mainly held by the State. Civil servants earn a fixed salary and do not benefit from the present net earnings stemming from their skilled effort during working hours. Yet, if the workers are not sufficiently monitored by the hierarchy or the peers and if the efforts are privately costly for them (e.g. physical tiredness), they can capture some economic benefits through shirking. In Cambodia, many health centres are closed during the afternoon; some health staff have then their private practice. As far as future earning rights are concerned, those stemming from new skill acquisition are shared by the trainee, the Ministry of Health and its partners. Yet, the extensive practice of per diem indicates that present earning rights are required to induce people to attend trainings. Future earning rights stemming from current effort are not held by the individuals: in many health districts, good individual reputation is not rewarding. It is correct to say that good reputation lies to a fair extent in the public domain. As we will more extensively develop in our next section, this is a major problem.

Government budget

Under the 'ideal-type' of the NHS arrangement, the financing of the public health system is mainly tax-based. The central government's budget is organized by line ministries and administrations, and sub-divided by administrative units and line items: in district A, so much for personnel, so much for drugs… The Ministry of Finance is in charge of executing the budget.

The Ministry of Health has key allocation rights on the health budget; yet, in low-income countries (just like anywhere else in the world), the minister is heavily constrained by the historical pattern of expenditure. A peculiarly rigid budget line is the personnel budget line. In theory, health district offices have decision rights on the budget in their district; this is one of the purposes of the planning-budget cycle. Yet, the same rigidities apply; the actual room for manoeuvre is mainly limited to budget increase (if any).

In this set-up, health facility managers have limited decision rights on the budget of their health facilities. In many countries, a major constraint is the little flexibility they face in terms of budget reallocation. 'Earning' rights on an underspent budget are nil, as any amount not spent during the year is not carried forward into the following year; the Treasury is the residual claimant. In fact, in most systems, the health facility managers receive a substantial share of their budget in kind. This is always the case with personnel and often the case with drugs but the rule can also apply to durables (e.g. furniture) and even consumables (e.g. fuel, stationary). Rationales for the government for adopting a provision in kind are to seize economies of scale in terms of transaction costs, get lower prices through bulk purchasing and avoid private capture at peripheral level (through kickbacks from suppliers). Yet, one result can be that items that are purchased at central level are not the items the health facility needed. In Cambodia, health facilities have some decision rights on their budget for running costs. However, above a certain threshold, rules are tighter (e.g. obligation to go through a tendering process).

A key right holder on the health budget is in fact the Ministry of Finance, as it has a final say on the release of public funds during the year. In many low-income countries, public expenditures are constrained by cash availability at Treasury level. A public revenue shock is enough to destabilize the whole yearly expenditure schedule. If one goes even more upstream, donors are obviously other right holders, as they are major contributors to the budget and to the cash flow.

Off-government budget resources

In many low-income countries, the public health sector is a major beneficiary of international aid, especially the inter-State one. While several agencies like the World Bank or the European Commission have begun to favour a budget support approach over the last years, there are still many actors that prefer to contribute out of the government budget, mainly through a project approach.

Many projects are prepared and managed jointly by the aid agency and the recipient line ministry. In such set-ups, both the aid agency and the Ministry of Health have utilization rights on the funds. These rights are established through contract; unanimity is therefore required for decision. Possible utilizations of the funds are constrained by the different procedures specific to the two parties. Some aid agencies are famously known for their highly bureaucratic frameworks. Health care facilities are often at a too peripheral level to have a significant influence at the stage of project writing. If they manage to gain some decision rights, it will be at a later stage mainly through the subsequent planning and implementation processes. District managers are at an intermediary level and have often more opportunities to influence the allocation of the budget, if not at the preparatory stage, then during the yearly planning exercises. Yet, this is not always the case, as some aid projects are very centralized. It still happens that health facilities receive some equipment or technology they have not asked for.

If any aid assistance has to be transferred (e.g. from one district to another), decision resides with the aid agency and the recipient government. If the aid agency implements itself the project for a donor (e.g. the case of a NGO), the donor's agreement will often be required as well.

According to the aid rhetoric, earning rights rest with the final beneficiaries. Yet, this may not be the case. First, if effectiveness of the projects is limited, benefits for households are small. Furthermore, some private capture is possible as well. Construction and equipment contracts are notorious for offering bribing opportunities.

Property rights on the main outputs

Health services

All the inputs reviewed above are put together to produce health services. Property rights on these services can be spread among different actors.

The local health care market determines the rights of the households in terms of choice of health care providers and of health seeking behaviours more in general. In this respect, situations vary across countries. In the countryside of many sub-Saharan African countries, the local monopolistic position of the health centre or the referral hospital is still rather firm. The only competitors are shops and peddlers. In Rwanda, thanks to the high population density and the good road network, rural households have some choice among health centres and even among referral hospitals (for those able to pay a taxi). In most Asian countries, if the health centre still has a monopolistic position for preventive services, this is not the case anymore for curative care. The unregulated private sector has penetrated quite deeply in the countryside; there are even itinerant health practitioners. The benefits of this marketisation of health care are ambiguous: although they improve access to treatment, they convey also major risks (fake drugs, incompetent practioners…). It is not obvious that these market developments have empowered the households in the management of their health.

The utilization of services usually entails some participatory costs for the households: transportation, time loss… This means that two households with a similar entitlement

(e.g. to free health care at the public health centre) do not have equal economic property rights.

Another restriction upon households' utilization rights stems from medicine itself. Any health service responds to a peculiar need; it is the prerogative of the Ministry of Health and the health care provider to assess whether and which service is needed by a user. Some diagnostic tests are restricted to individuals with some symptoms; each treatment is specific to a disease, rehabilitative care is for persons suffering from an impairment and promotional and preventive services for individuals with a health risk. The government may establish other eligibility criteria: for instance, all individuals belonging to an administrative area may be requested to use some given facilities for some services; some activities may be organized by target groups (e.g. an education program in school).[138]

A last restriction to households' economic rights on health services is the obligation to consume the service as a bundle. They can decide to go or not to go to the health centre, but once there, they have very little control on the attributes of the service they receive. As a matter of fact, health services have a lot of attributes, and many of these attributes are not measurable by lay people. A lot of these attributes – and some of these are crucial for prompt recovery or real protection against disease risks – are mainly under the control of the health staff. If producing these attributes induces a private cost for the health staff, if professionalism is low and if the district team does not ensure enforcement through monitoring, users will have very limited economic rights on these attributes: they will receive care and services of insufficient quality.

With the notable exception of the drugs they receive, users have no transfer rights on the health facility outputs, as these outputs are mainly services.

It is expected that most benefits from health care go to the patient. However, the health care is also part of an economic transaction. It may be that the health facility or its personnel has the economic right to collect revenue per user. The question as to who has the utilization, transfer and earning rights on this revenue then becomes relevant.

A first scenario is the one where the service is charged to no one. This equates to a situation where the holder of the earning rights decides to provide his service for free. The non-collection of revenue then extinguishes the questions on utilization and transfer rights on the revenue.

A second scenario is the one where the service is officially for free, but where in practice an under-the-table payment has to be paid; earning rights on the service are then obviously partly captured by those in a position to request such a payment. The corrupt personnel has also utilization and transfer rights on the collected cash (or the 'gifts').

A third situation – the most prevailing one in low-income countries – is the one where the service is officially charged to either the user himself or to a third-party payer (e.g. an insurance fund). This is for instance the situation prevailing in Rwanda and Cambodia. The question of who holds the different rights on the user charges is then crucial.

In most countries, there are different right holders according to the source of the income. For example, in many systems (including Rwanda), the health centre user has to pay a lump sum fee for the consultation and a bill for the prescription. The revenue from

[138] If it was compulsory for households to get some services (e.g. immunisation against a communicable disease), it is not incorrect to say that the Ministry of Health has some rights on individuals.

consultation fee will often go to the health centre personnel. If they are not allowed to claim this revenue as a private income (e.g. through a bonus), they will at least have decision rights on its utilization; such cash is very useful to finance some running costs at facility level (e.g. purchase of stationary). In countries which have subscribed to the Bamako Initiative, the revenue from the drug sale will be controlled by the community 'health committee'. This committee has a nonprofit status; its members have therefore legally no right to capture the revenue beyond some compensation fees for attending the meetings. Their decision rights on the drug sale are also limited; status of the committee obliges them to purchase drugs to re-supply the health centre's pharmacy; if there is any surplus it has to be used for health activities beneficial to the population. Of course, governance of such committees is not perfect: theft and 'unauthorized borrowing' by some committee members occur.

8.2. A PROPERTY RIGHTS ANALYSIS OF RURAL PUBLIC HEALTH SYSTEMS

Incentives: the explanation of the poor results of the health district strategy (so far)?

As extensively developed in our chapters 5 and 6, property rights structuring determine incentives, which themselves influence individuals' behaviours.

Obviously, many different questions could be raised about the property right structuring that we have described in our section 8.1.: do governments make the best use of their land (especially in booming cities); are the existing property rights favourable to a good maintenance of buildings and equipment; are the existing drug supply systems enhancing an efficient drug use; are projects good arrangements in terms of cost-effectiveness… Questions are numerous and our point here is not to develop or even address all of them.

Our proposition here is to focus on the health district strategy in a discursive way.[139] Our hypothesis is that the disappointing results achieved with the strategy stem to a large extent from the way it was institutionalised: the established property rights structuring are not conducive to high performance by individual staff. The property right structuring that we have described in section 8.1. has indeed one major characteristic: 'holdership' of utilization and earning rights on key assets does not overlap. Indeed, while most of the earning rights on inputs and outputs rest with the Ministry of Health, utilization rights are controlled to a fair extent by the health staff. Such an incentive structure can work but it rests then on some key conditions. Our analysis is that these conditions (which are not made explicit in most guidelines) are not satisfied in most settings.

Health managers' motivation: both intrinsic and extrinsic

For an economist, something which is really striking in nearly all of the documents formalising the health district is the little explicit attention given to the behaviours of the people to be coordinated by the system. Reports of experiences are also quite silent on this aspect. This is particularly the case with health district managers.[140]

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[139] In our chapter 7, we have mentioned that another option is to explore the consequences of a specific property rights structuring through microeconomic models. We have annexed to this thesis a paper where we carry out such an analysis. Other examples of such theoretical developments applied to low-income countries are available in the literature (Hammer & Jack 2002;Jack 2002;McPake, Hanson, & Adam 2007).

[140] The health district promoters paid more attention to households (cf. health seeking behaviour studies) and communities (Van Balen 1989). Motivating factors for nurses to whom tasks are delegated were discussed in some documents (Equipe du Projet Kasongo 1976)

Some documents seem to convey the message that if enough support is given (including a fixed wage high enough and the appropriate capacity building), everyone in the public system will behave according to the model. The central government will fairly and diligently allocate its resources; district managers will make sure that the resources they receive from the central level reach every health facility; health facility staff will do their best to deliver their package of activities. The underlying assumption is that individuals – district managers, health staff and community representatives – are committed to primary health care, justice and development in general. Everybody shares the planner's objective; there are no alignment problems.

This view on health staff is not much of a surprise: it is the way many health workers see themselves: they are professionals driven first of all by values and by intrinsic motivation factors. Scholars, experts and other charismatic persons who promoted the district strategy were themselves health professionals driven by high intrinsic motivation and altruistic values. [141] These persons – who were probably outliers – may have extrapolated their values, preferences and norms to other actors in the health sector; partly as an act of faith, partly as a sign of full respect to colleagues trained under the same system of professionalism and expected to adhere to a same public service ethos.

The institutional economic framework and economics in general cast doubts on such an idealistic view of mankind.[142] As highlighted in our chapters 6 and 7, it is not contested that intrinsic motivation plays a role in the health sector; yet, economists believe it is also important to give it its right place.[143] Whereas there may be some congruence between the planner's objectives and the health staff's preferences (because of self-selection in education choices or due to the fact that the central plan is partly built on priorities identified at decentralised level), there are also divergences. Acknowledging that public health staff, from the bottom till the top, are also self-interested to some extent, may help to explain different problems observed in health districts (see below). It sends also an important signal to health policy makers and their technical partners: people are not naturally good performers, incentives must be taken seriously; as far as human resources are concerned, think beyond capacity building!

The health district strategy establishes local monopolies

If people are not spontaneously committed, one can try to adjust the incentives they face. In this respect, there are matters for concern with the health district arrangement.

As highlighted in our introduction, mainstream economics had not much to propose to health system thinkers in the seventies and early eighties. Yet, they could have raised the point against the health district strategy that it consisted of setting up local monopolies (one referral hospital per health district and one health centre per responsibility area). The inefficiencies stemming from a monopoly have been known by

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[141] Some contextual factors may have played as well. "Tiers-mondisme" was still the dominant ideology in the aid sector in the seventies and eighties. Furthermore, as put by Malher (WHO executive director from 1973 till 1988) in a recent interview, "the 1970s was a warm decade for social justice. That's why after Alma-Ata in 1978, everything seemed possible" (Anonymous 2008). One should note also that many experts who promoted the strategy were expatriates or individuals who stayed a limited number of years in a district manager position. Shifting from one challenge to another is a major source of intrinsic motivation.

[142] This questioning is certainly not specific to low-income countries. See Le Grand 2003 for a discussion of the NHS in UK.

[143] Several authors have for example underlined the fact that intrinsic motivation seems to be higher in nonprofit health facilities (especially those owned by a faith-based organisation) than in governmental ones (Green et al. 2002;Leonard 2002).

economists for a long time: the absence of competitors creates a rent for the producer allowing him to charge a higher price if the output is sold on a market and to slack (e.g. low innovative effort, low quality of services) otherwise. The promoters of the health district have constantly argued that the absence of overlaps in the health district model was a source of efficiency; for those who believe in decentralised forces, this lack of overlaps is a source of inefficiency.

Did this condemn the district strategy in the economists' eyes? Not necessarily; there is also a strong economic argument for such monopolies in rural areas: for the packages of activities as they are composed[144], these monopolies are probably what economists call *natural monopolies*: because of the existence of increasing returns on scale, there is no room for a second provider. One provider is more efficient than two or more. In the seventies, the standard recommendation when facing such a situation was to entrust the provision to a government agency (and to live with the inefficiency). The health district was therefore not at odds with economic knowledge.

In our chapter 6, we have seen that organisational economics has cast a new light on such situations. The institutional economic framework reveals that the key institutional arrangement here is an implicit contract between the funder of health care services (i.e. the central government) and the health facilities: in exchange for some inputs (mainly infrastructure, equipment and salaries) they are expected to perform in their delivery of health care. If one adheres to a vision that health care providers are intrinsically aligned on the objectives of the planner, there is no reason to doubt that performance will be the outcome. If this assumption is not held, there is obviously an issue of enforcing efficiency to the monopolistic health care providers. As highlighted by Shleifer and others, if a principal contracts different organisations to provide a more or less similar service (or if other principals do so and are keen on sharing the information), it is possible to compare the organisations' performance. By benchmarking the different monopolist health facilities against each other, it is possible to extract information on their relative efficiency (see also next point on asymmetry of information) and to identify best performers.

The health district arrangement allows such a benchmarking. This is even greatly facilitated by the fact that the health facilities have a clear responsibility in terms of population to cover (it is then possible to calculate coverage rates) and standard package of activities to deliver.

Comparisons across health centres have of course been recommended at a very early stage to district managers. This was one of the main reasons to get the health information system at district level (see below); plenty of indicators have been developed to guide the analysis. Our observation on the field is that committed district managers do not leave this opportunity untapped. Once they have the information, they try to identify causes of the variation in the performance (there may be factors not under the control of the health centre teams) and to develop comprehensive action plans (Bossyns et al. 2006).

The more standard pattern of practice is however less enthusiastic: many district directors make very limited use of the available information. They do not seem keen on putting pressure on low performers; maybe because it would get them into a discussion on the causes of the low-performance, which is often also partly their fault. Obviously,

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[144] The other option, at least for health centres, would be of to dismantle the package. Yet, several activities in the minimum package of activities generate positive externalities; the market would under-provide them.

such benchmarking could also be implemented at the national level across hospitals or even districts.

All in all, the application of the institutional economic framework to the case of the monopolies seems to indicate that district promoters have overlooked the inefficiency problems that these monopolies would generate. This neglect may be partly due to the fact that they extrapolated their model from experiences where district managers were committed, curious, smart and equipped with good analytical skills. When the model was scaled up, it was not stressed enough that such active benchmarking of performance was one of the key mechanisms to establish accountability in health systems whose property rights structuring was the one described in our section 8.1.. Too few central governments really adopted the tool and enforced it upon their district managers; a missed opportunity given the simultaneous information technology boom.

Asymmetries of information are an issue

As a coordination arrangement, the health district strategy acknowledges some of the difficulties related to information in a health system. In fact, information management was even one of the main reasons to create the district: there was a need for a management level sufficiently close to the population and the health services they use. Yet, this information problem has mainly been seen as a difficulty in terms of sharing, processing and interpreting the information: it is about having meetings with health centre teams, gathering and analyzing the routine health information, calculating drug orders and making plans for action through the planning cycle.

Because of the implicit assumption on human behaviours (everyone is willing to implement primary health care according to the plan that was developed to some extent collectively), the problems are not perceived as asymmetries of information. As a matter of fact, if both the principal and the agents share the same objectives, the asymmetry of information is not anymore a source of inefficiency.

The truth is that there is a long chain of asymmetries of information in the health system: from the one between the citizen and his representative in the parliament till the one between the health care provider and the user. These asymmetries create situations of moral hazard and adverse selection. The chain itself creates possibilities for supervisors and supervisees to collude against higher levels of the hierarchy (i.e. to hide information to their common benefit).

In many countries, not enough stress has been put on the fact that one of the main purposes for having a good (i.e. complete and reliable) health information system was to appreciate health facilities' performance. In places where the monthly data collection takes place, it is often more some kind of a bureaucratic ritual than a real mechanism to overcome asymmetries of information. Supervision, which could be a precious mechanism to qualify some judgements based on the health information system, is too rarely practiced in such a complementary way.

Retrospectively, one can observe that many promoters of health district strategy have been reluctant to highlight the role of the health information system and the supervision in enforcing performance to health facilities; probably again because of their strong assumption on the personnel's ethos. In many places, both instruments have been adopted more as ways to enforce bureaucratic procedures than really as mechanisms to improve citizens' health and well-being.

Good performers are insufficiently rewarded

Collecting information on health centres and benchmarking them to identify the best performers are useful steps, but this will have an impact on performance only if good performers are rewarded and poor performers sanctioned.

Yet, the property rights structuring we have described in our previous section is not really conducive to such practices. Health district and health facility managers, like other staff members, are remunerated on an input-based system; they receive a fixed (and sometimes relatively low) salary. As they are exposed to low-powered incentives, they have little inducement to be creative and to work hard.

As we have seen in chapter 6, a solution to overcome the problem is to ensure that career prospects motivate people to perform well. However, the standard 'career concern' model assumes that there is a market for the individual's skills. In many countries, there is not such a labour market for health managers. Health staff have mainly a choice between working for the government or being their own boss in their private practice; and still, this applies only to managers with clinical skills. Also in chapter 6, we have seen an alternative option: the tournament, i.e. the situation in which health facility managers would be in competition for better remunerated positions at a higher level within the government. This rule exists indeed to some extent in many countries: the best health centre chief becomes supervisors; the best hospital directors may become district directors… Yet, in some countries, the 'tournament' is not really a game played fairly. Other mechanisms such as nepotism or tribalism may distort it. Furthermore, there are rigidities that may discourage managers to apply for higher positions: higher positions 'above' are administrative ones much more than managerial ones; higher positions are often in another location, the health facility manager may have made some specific investment locally (e.g. social network, relatives).

All in all, we believe that given the huge informational asymmetries present in the system, the low-powered based remuneration of health manager is not compatible with the rather loose monitoring practiced by the hierarchy. Too often, the final result has been health facility managers with little incentive to be innovative, risk taking and hard working.

User fees have modified the property rights structuring

Our statement that holdership of the utilization and earning rights does not coincide in most rural health systems was not fully correct: since the introduction of user fees, there has often been such an overlap for curative services. In many places indeed, health staff retain some of the income raised through the user fees.

The possible perverse effect of this overlap in terms of drug prescription was identified at a very early stage. Experts warned of the risk of over-prescription and cost escalation, if prescribing staff were benefiting one way or another from the income raised through the drug sale, the classical problem of demand induced by the health care provider. The standard recommendation to overcome this problem is to establish a lump sum payment for both the consultation and the prescription.

However, the lump sum payment does not solve the problem of accessibility. In chapter 1, we have reported that when they introduced user charges, most governments issued legal texts decreeing that health care facilities should give free health care to the poorest. Yet, in situations where the fees were partly financing staff income, these decrees created conflict of interest: any patient accepted for free corresponded to an income loss. Like many other legal texts before, this regulation 'by fiat' proved to be a rather weak way to enforce property rights of the poor households on health services.

There is plenty of evidence that public health facilities had enough decision rights to restrict exemption to a very limited number of patients or to exempt patients who were definitely not the poorest.

Several aid partners quickly expressed concerns that user fees may lead to an under-consumption of the charged services. Obviously, this would have been inefficient for activities with positive externalities (e.g. immunization). In most countries, preventive services stayed therefore available for free. Too few people noticed that the minimum package of activities was in fact a multitasking contract with the health centre. As we have seen in our chapter 6, introducing a high-powered incentive for curative activities, while leaving preventive activities financed through the indiscriminate input-based financing could make health centres favour curative services to the detriment of their preventive and promotional activities.

Wrap-up

The standard explanation for the limited success of the health district strategy is its poor implementation. By highlighting several dimensions of the strategy that have been overlooked so far, the institutional economic framework gives another interpretation.

The framework provides a clear view on the property rights structuring which is in place in most public health systems. This structuring is characterized by a distinct holdership for the utilization and earning rights over key assets: while the Ministry of Health keeps most of the earning rights, the health staff has a de facto control over most assets.

This property rights structuring would work if the health staff duly implement the Ministry of Health's plan.[145] Yet, this does not happen for at least three reasons. First, health staff have their own preferences; they are not naturally aligned on the Ministry of Health's objectives. Second, in most countries, too little effort has been put by the Ministry of Health into enforcing its plan in health facilities. The truth is that there are major asymmetries of information and enforcement costs are very high. Third, the introduction of user fees has established incentives which may partly contradict the Ministry of Health's plan.

The standard practice by Ministries of Health has been to leave some of their property rights in the public domain. These rights have been captured by the personnel to the detriment of the population.

This positive analysis implies at least two things. First, translated at the normative level, it backs up our proposition to take the households' and the Ministry of Health's perspectives for defining what performance is. Second, it calls for decisive action. To be fully beneficial, the health district strategy requires other institutional arrangements. Reconquering users' rights will pass by some reforms or even more: a constant attention in the future to adapt institutions to new constraints and new public health challenges. We present some recent experiences and share a personal vision in the second part of this thesis.

[145] Of course, this would be beneficial to the population only to the extent that the Ministry of Health's plan is the right one. We discuss the division of tasks between the central and the decentralised level more in detail in our chapter 10.

A summary

In this chapter, we have applied our analytical framework to rural health systems in low-income countries.

In our first section, we have described the distribution in property rights that one can observe in most rural health systems. The standard property right structuring is characterised by a situation where utilisation rights and earning rights on most assets are not held by the same economic agents. Such property rights structuring could work if the health staff were duly implementing the Ministry of Health's plan; for several reasons that we have highlighted this is not the case.

Our application of the institutional economic framework to the health district strategy reveals that promoters of the strategy have probably been misled by their lack of attention to incentives into play. Acknowledging their influence does not entail that the key principle of the health district – two tiers of health services working in close coordination – should be thrown away; it just indicates that institutional arrangements should be designed to handle in the best way individuals who are partly self-interested.

PART II:

REFORMING RURAL PUBLIC HEALTH SYSTEMS

CHAPTER 9: TWO RECENT EXPERIENCES IN REFORMING RURAL HEALTH SYSTEMS IN LOW-INCOME COUNTRIES

In the first part of this thesis, we have developed a framework to analyse how institutions influence performance of health systems and health care organisations. We have shown the analytical power of the institutional economic framework through an application to public rural health systems in low-income countries.

In the second part of this dissertation, we try to identify possible tracks for reforming poorly performing public health systems. In this chapter, we report recent experiences in two countries: Rwanda and Cambodia. We show how new institutional arrangements could improve the lot of the rural population. The chapter consists of four papers published in peer-reviewed journals.

9.1. THE PERFORMANCE INITIATIVE IN RWANDA

Presentation of the papers

Around the world, performance of health centres to deliver the minimum package of activities is too often dissatisfactory. Coverage rates remain low, far too low to have a significant impact in terms of mortality reduction.

This under-coverage problem has been addressed with determination in Rwanda. The Performance Initiative is a pilot experiment that we have supported as consultant during four years. The intervention consisted in a significant revision of the property rights structuring of health centres in two health districts. This revision has mainly taken form of a set of contracts that align incentives to health staff on the main objectives of the national health policy.

Our paper "Reviewing institutions of rural health centres: The Performance Initiative in Butare, Rwanda" reports in detail the modification in the institutional arrangements. As summarised in Table 7, the main institutional changes consisted in the creation of the equivalent of a funding agency (the 'steering committee'), the establishment of a contract between this funding agency and the health centre management committee, the establishment of a contract between the health centre management committee and each individual staff member. The first contract set a new payment rule for health centres: a lump sum payment for each unit of output produced (for a selected list of activities from the minimum package of activities). The second contract conditioned the payment of a monthly individual bonus on the due respect of the internal regulation of the health centre. In terms of property rights, these new contracts mainly amounted to an expansion of decision rights at facility level (the first contract acknowledged the greater autonomy of health centres in the development of their strategies) and the acquisition by the personnel of the earning rights on the revenue raised from the first contract. This new property rights structuring created strong incentives for the health centre staff to expand the production of the remunerated activities.

Organisation of focus	Health centres (public and '*agréés*') in rural health districts.
Main institutional changes	Creation of a purchasing agency (the 'steering committee'); definition of its mission; introduction of a contract between the steering committee and health centre management committee; the contract sets a new mode of remuneration of health centres: fee-for-service for a limited set of services from the MPA; introduction of a variable bonus system for personnel; introduction of internal regulation and job descriptions in the health centres.
Enforcement	Payment by the steering committee; verification of the execution of the contract by review of registers and spot-check visits at household level; sanction, if necessary.
Main changes in terms of property rights	Slight expansion of decision rights for the health centre team; attribution of earning rights on revenues collected from the 'Performance Initiative' to the personnel.
Established incentives	Incentive to increase production of remunerated services; to overlook non-remunerated activities (including some quality dimensions); to engage in activities while technical capacity is still weak; to create ghost users.
Possible interaction with intrinsic motivation	Risk to undermine intrinsic motivation (to do only what is rewarded); no evidence so far of such a phenomenon in Rwanda.
Impact on behaviours	Increase effort by health staff for delivering activities from the MPA.
Impact on performance	Evidence of an increase in staff productivity, general outputs of the health centres and coverage rates for key MPA activities.

Table 7: key traits of the Performance Initiative in Rwanda

In the first paper, we show that output-based payment arrangements are feasible even in very poor countries and can have a positive impact in terms of production of the remunerated activities.

Our second 'Rwandan paper', "Output-based payment to boost staff productivity in public health centres: contracting in Kabutare district, Rwanda", focuses on the productivity of the health staff. We show that the output increase observed in the health centres was mainly due to a surge in staff productivity. This is good news, as human resources are a major constraint in many low-income countries.

In both papers, we discuss possible risks related to the strategy. The Performance Initiative was characterised by the strict payment of quantitative units. This choice has been criticised by some as an incentive for health care providers to deliver quantity to the detriment of quality. Their recommendation was to remunerate also some indicators of quality of the care for the remunerated services.

Our first line of argument – speculative as there was no major evidence at that time –was to remind that the remuneration contract is only one contract in a much broader nexus

of institutions. Other enforcement mechanisms (e.g. supervision) have a role to play, especially for service attributes that may suffer from too strong extrinsic motivators. Beyond the many institutions affecting health staff behaviours, one should indeed not forget the influence of individual preferences and values. In our papers, we argued that quality of care is maybe first of all a matter of education and professional pride. In some countries, health professionals abide by ethics and codes of conduct. Yet, we agree that it is not the case everywhere. Rwanda seems to do reasonably well in this respect. Interestingly enough, once the strategy was adopted at national level, it is the Rwandan policy makers themselves that decided to remunerate also some qualitative dimensions of the services.

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9.1. THE HEALTH EQUITY FUND IN CAMBODIA

Presentation of the papers

As highlighted in our chapter 1, accessibility to health care is an issue in many low-income countries. User fees have not resolved this problem, quite the opposite. The inaccessibility to hospital care is particularly a problem: the majority of households live far away from the referral hospital; distance creates a major psychological and economic barrier. Furthermore, treatment at hospital can be very onerous.

In this section, we present two of the papers we have written on the health equity fund (HEF) schemes in Cambodia.[146] The HEF model is characterised by three key design features.

First, it consists of setting up an ear-marked fund to help the poor in their access to hospital care. Such an arrangement did not exist in the past in Cambodia. Hospitals had to accept poor patients for free (a historical deal agreed at the introduction of user fees, but with no ear-marked budget) and were not compensated for such acceptance. Any free patient was a loss for the hospital staff as a substantial share of user fees were allocated to staff income.

The second key characteristic of the HEF model is that the fund should cover the different kind of barriers encountered by the poor in their utilisation of hospital service.

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[146] With Hardeman et al., we have presented the HEF model and some early evidence of its effectiveness (Hardeman et al. 2004). In Van Damme et al., we have identified health care expenditure as a possible source of impoverishment in rural Cambodia. We have also explored the possible role of the HEF to protect households' welfare (Van Damme et al. 2004). This result was consistent with a view point formulated in 2003, where we had put forward the emerging problem of 'iatrogenic poverty' in Transitional Asia (Meessen et al. 2003). More recently, we have explored the benefit-incidence of HEF in six rural hospitals (Meessen et al. 2008a). More contributions on HEF by others or by us can be found in the collective book that we have recently edited (Meessen et al. 2008b).

These barriers go indeed much beyond the user fees. HEF managers are for example allowed to help patients for their transportation costs or for the different direct costs incur during their stay in the hospital wards (e.g. food). This feature means, among other things, that hospitals are not the only providers of services compensated by the HEF. Taxi drivers and shop keepers are other potential suppliers of services.

The third main characteristic of the HEF is to entrust the management of the fund to a party not directly involved in the health care transaction. The fact that the hospital does not manage the fund avoids some conflicts of interest. For example, the fact that the hospital staff has a claimant status on the income raised through user fees but none on transportation could induce a hospital managing such a fund to privilege reimbursement of user fees to the detriment of other barriers (and then assist mainly users who already managed to overcome the distance barrier).

Our papers highlight a few things beyond generic characteristics of the HEF model. Our first paper, "Improving access to hospital care for the poor: Comparative analysis of four Health Equity Funds in Cambodia", is interesting for at least three reasons.

First, we believe that it is a good illustration of the potential of comparative case studies in organisational economics. The case study allows to go into more details when describing the institutional arrangement. Among other things, gathering four cases forced the researchers to develop a comparative grid. The experience proved that the successive confrontation of the grid with several cases was a source of enrichment of the grid: features that were maybe neglected in the study of a first case, sometimes had to be added later on when documenting other cases. Applied organisation economics could benefit from an iterative process 'facts – framework – facts' again. Organisational economists should move away from the standard 'deductive theory-facts' confrontation approach (i.e. the facts are used to compare with expected results of a model) and acknowledge that the process of knowledge generation is a cycle of induction and deduction.

Second, the paper is interesting also for its content. The qualitative data collected on the distribution of functions (who does what) provide a very clear description of how the bundle of tasks are organised and distributed across actors. This highlights a key characteristic of the HEF model. Fundamentally, it was a revision of the bundle of tasks to be delivered by the public hospital: the function of identifying the patients for whom user fees should be was taken out of the hospital mission. This withdrawal was motivated by the lack of in-house social welfare expertise, but more fundamentally by the conflict of interest mentioned above.

At last, the findings of the paper are also compelling. It shows with very basic methods – time series combined with project information on the different socioeconomic status of paying patients and HEF assisted patients – that HEF have led to an increase in the utilization of public rural hospitals by the poor. The paper shows that there exist different institutional arrangements to obtain such results.

Our second 'Cambodian paper', "Poverty and user fees for public health care in low-income countries: lessons from Uganda and Cambodia" does not bring real new evidence on HEF. Yet, we decided to include it in our dissertation for two main reasons. First, it shows again the power of comparative case studies: in this case, two country experiences are being contrasted. The comparison of the Cambodian and Ugandan experiences reveals that quite similar objectives – improving access by the poor to health care services – can be pursued through different institutional arrangements. In this respect, interesting links can be made with the discussion in our chapter 10 on how different funding approaches give control to the poor on public resources. Another asset

of the paper is that it reports how the health sector reform processes took place in the two countries, a crucial dimension not really developed in our dissertation.

We summarise in Table 8 the main traits of the health equity fund arrangement. The main institutional changes consisted in the establishment of a local agency with a clear mission – to assist the poor in their utilisation of hospital services – and sufficient resources to provide the required assistance. Contracts between the sponsor and the agency and between the agency and the hospital have established the new set-up. In terms of property rights, the new arrangement rests mainly on the expansion of the earning rights of the hospital (poor patients used to lead to a revenue loss, now they are lucrative). Our first paper highlights that local agencies have quite extended decision rights on the identification of households eligible for assistance. The same paper gives also an idea on the possible bundle of tasks for the local agency.

In terms of incentives, by splitting tasks, the new arrangement removes the conflict of interest at the level of the hospital. Local agencies have strong incentives to target their assistance well: they know that their performance is evaluated by their sponsor and that poor performance could lead to the non-renewal of the contract. The arrangement taps intrinsic motivation at the level of the local agency. It is indeed probable that welfare workers employed by local NGOs or grassroots organisations have a personal commitment to help and defend the poor in their emancipation.

Organisation of focus	Referral hospitals in rural health districts.
Main institutional changes	Establishment of a local agency in charge of empowering the poor in their utilisation of hospital services; definition of its mission; creation of an ear-marked fund; introduction of a contract between the local agency and the referral hospital;
Enforcement	Payment by the local agency to the hospital for services delivered to poor patients; verification of the eligibility status by the agency; verification by the sponsor of the targeting by the agency.
Main changes in terms of property rights	Revision of the mission of the hospital (focus on health care); Slight expansion of decision rights for the health centre team; attribution of earning rights on revenues collected from the 'Performance Initiative' to the personnel.
Established incentives	Incentive for hospital staff to treat poor patient.
Interaction with intrinsic motivation	Social workers of local NGOs are expected not to leak resources to better-off patients and to be dedicated to helping the poor during the hospital stay.
Impact on behaviours	Local NGOs are induced to target well. Social workers are paid to identify the people in need. Hospital staff are compensated for treating poor patients.
Impact on performance	Evidence of an increase in hospital utilisation by poor patients.

Table 8: key traits of the health equity fund in Cambodia

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CHAPTER 10: TOWARDS BETTER INSTITUTIONAL ARRANGEMENTS FOR PUBLIC HEALTH SERVICES IN LOW-INCOME COUNTRIES

"From the packages of the past to the reforms of the future" (WHO 2008)

In this chapter, we want to develop an alternative view for organising public health systems in low-income countries.

In a first section, we formulate ten institutional propositions which could be promising tracks of reform. We first explain why we adopt such a normative stance. We then put forward four propositions that could increase property rights of the population over public resources. After that, we list three complementary propositions that could lead to a better structuring of property rights for the health managers. We end with three propositions which concern more the whole health system. We organise our focus on reforms integrating an output-based financing component.[147] We provide illustrations with the two experiences reported in chapter 9. We end the section with presenting some evidence supporting the ten propositions.

In our second section, we assess opportunities for reforming public health systems towards greater performance. We conclude our dissertation by identifying some possible research tracks for the future.

10.1. TEN PROPOSITIONS TO IMPROVE PERFORMANCE OF PUBLIC HEALTH CARE ORGANISATIONS IN LOW-INCOME COUNTRIES

Our motivation, our limits

By putting forward a personal view on how to reform public health systems, this chapter is clearly normative and to some extent, speculative. While this is quite a common practice in public health (but not always in such an explicit way), some of our readers may be surprised by so much boldness; they may even interpret this as an excess of self-confidence. These feelings are of course respectable, but four observations may help our readers in their judgement.

First, we must keep in mind that this dissertation is, to a large extent, about a tragedy: millions of people dying each year while the technology to save their lives exists and is moreover affordable. This situation is just not acceptable. Our analysis – shared with many others – is that the performance of public health systems is not satisfactory. Quality of services is low, and partly because of that, they are under-used by the population. What is needed today is a community of policy makers, experts, actors and researchers ready to put forward clear propositions on how to address these problems.

[147] These strategies receive different names in the literature. Some call them "performance-based financing" approaches. The World Bank recently launched the formula "result-based financing".

This community is emerging; its members are experimenting new approaches and results of these experiments are progressively convincing very influential actors. Our original contribution is mainly to give firmer theoretical foundations to this work and provide maybe a language. In this respect, if our view is still heterodox in the public health community, it is not that personal.

Our second observation is on the propositions themselves. As evidence is still limited, we have of course no guarantee that all of them are correct. The complementary nature of some propositions is not yet fully clear. For now, we are ready to take the risk to be proved wrong. We believe that the good stance today is to question the status quo; this may require some speculation and risk taking. We certainly do not request our readers to follow us blindly. We trust that their critical mind and experience will also enrich the debate and the reflection.

Of course, our propositions are not magic bullets: they will not solve all the problems. It is obvious for example that there are some prerequisites to be satisfied: there must be a minimal amount of leadership at governmental level; the government (or its partners) must be ready to put a significant amount of resources in its public health system; there must be qualified staff in the health facilities.

More fundamentally, our propositions provide a direction, they are no universal blueprint. Such a simplistic view would contradict the whole theoretical foundation we have established in the seven previous chapters of this dissertation. In any country, it is the whole nexus of institutions that matters. If we do have to risk simplification at this stage, we would say that the context of reference for these ten propositions is made up of countries whose public health systems are institutionally established along the nexus of institutions described in our chapter 8 or – and we believe that there is quite an equivalence – countries where public health services are largely under-used by the population. Among other things, this means also that criticisms made against similar recommendations in other settings where challenges are different (e.g. high-income countries struggling with over-provision of curative care) are not necessarily valid. But they should certainly not be discarded either; for example, the evidence accumulated in high-income countries on the perverse effects of fee-for-service or the limits of quasi-market arrangements calls for caution. The truth is that there is never a perfect solution. First, external parameters (e.g. relative prices) change. Second, economic agents adapt their behaviours in the follow-up of a reform, their new practice creates new problems. The key is to realise that institutional arrangements are variables of adjustment.

Our third observation relates to our group of countries of focus. We mainly have professional experience in countries relying to a fair extent on donor aid (e.g. Rwanda, Cambodia) or in countries that have been experimenting very rapid macroeconomic growth (e.g. China). This creates more room for manoeuvre on health sector reform. In some contexts, our propositions could be politically very difficult to implement. As mentioned in introduction and chapter 3, major political economic aspects are not addressed in this dissertation; this was an issue for our Part 1, it is even more a constraint for this prescriptive part of our work.

Our last observation brings our readers back to reality. The actual situation today in many low-income countries is that public health facilities are no longer the main providers of health care. The private-for-profit sector has taken over in urban areas, and its unregulated version is often the first recourse in rural areas. Our ten propositions must therefore be seen for what they really are from a population perspective: a late attempt to save a failing public health sector. In this respect, our ten 'institutional propositions' are conservative: they rest on the belief that the State not only has to play a

key role in the financing, but also in the provision of health care services. Our propositions defend what in our opinion should remain the main objective of rural health systems: to provide a basic package of quality services to the whole population. We are also very loyal to the health district strategy. To a fair extent, we try to address its shortcomings, hopefully in a way that manages to secure what we, the health expert community, perceive as its numerous advantages.

Firmer economic property rights for the people through exit and voice (#1-#4)

In many low-income countries, there exists a huge gap between official rights granted to citizens by the constitution, legal texts and executive decrees on the one hand and the actual rights citizens enjoy on the other hand.

As far as health care is concerned, citizens often have extended formal rights. The health district strategy has allowed countries to make several steps in the good direction. Yet, the journey is not over. From their perspective, the nexus of institutions that establishes the health district is perfectible.

A first problem to address relates to the balance of power; the power structure is currently not favourable to citizens, particularly to the numerous poor living in rural areas. This power imbalance is structural. A major issue is the monopolistic position held by the health facility teams: it deprives households from the capacity to 'sanction' them through exit, as there is no alternative provider available closely. The community representatives can of course voice their frustration, but anonymity will be difficult to guarantee. When the villager representative gets sick, he will still have to go back to the health centre. The other major source of problem is the numerous asymmetries of information. Most of them play in favour of the health staff; the lack of effort made by their hierarchical superiors to enforce performance only reinforces their power.

Our belief is that these structural institutional problems require bold actions. Governments have to establish a nexus of institutions that ensures for the population greater and firmer property rights over the different assets contributing to the production of health services. To some extent, this is the objective that primary health care people had in mind: give power to the people. Yet, we definitely need a modernized version of empowerment.

We have to move away from the idealistic vision that people will take control of their health through self-reliance (autarky) or revolution (political control). Let us be clear: we certainly do not contest that households can be major co-producers of their health. This is obvious given the multiple determinants of health, and the importance of healthy (preventive) behaviours. We subscribe also to the view that transferring more information to households could be a powerful strategy. The asymmetries of information are so huge and the market so aggressive, that there is an urgent need for interventions at this level. This is an emerging field for research and operations. Technology creates new risks, but also new opportunities (Lucas 2008). As we shall see with our proposition #4, we even believe that the involvement of the population's representatives in the governance of health facilities should deserve more attention. Our main point is to put forward new ways to empower citizens in their relationships with the public health system. We have to establish accountability mechanisms that entail much lower private coordination costs and do not assume altruism towards the community.

Institutional proposition #1: The public budget should follow the users

A first track would be to give power to households through the choices they make as health service users.

The main idea is relatively simple: if for some reasons, people have little political instruments to voice their frustrations with the low performance of the public health care system, they must be able to vote with their feet. This basic idea, put forward by Hirschman in the seventies with his exit/voice alternative, still applies today (Hirschman 1970). The World Bank has recently revived it in its World Bank Report 2004 by talking of the short route (exit) versus the long route (voice through the representation system) (World Bank 2003).

Operational implications

Implementing this idea is easy: it just requires that a significant share of the public budget is determined according to the health seeking behaviours adopted by the population.

Several ways to apply this principle have been explored in low-income countries. We review some of them in our Table 9. We oppose them to the input-based financing model which does not satisfy the principle. There are pros and cons for each approach; as evidenced by the two experiences reported in chapter 9, the context and the health problem that needs to be tackled should determine the final choice.

As highlighted in Table 9, these different strategies are about property rights over public assets. The three main components to look at are: (1) whether the household has some decision rights on which health care facility will benefit from which budget; (2) the extent to which the user gains utility and income from the public assets; and (3) whether the user has some rights to transfer, partially or fully, any of the two other rights. The table shows that there is in fact a whole continuum of options.

For *an input-based model (1)*, a first improvement can already be that the input-based budget is fixed per capita. This would already ensure that the health centre covering a greater population has more staff and more fuel for its outreach activities (if one assumes population density identical). In such a set-up, moving from approximate estimates of the total population in the responsibility area to a birth registration system is already a way to increase citizens' individual property rights.[148] But for the rest, the standard input-based financing gives little rights to the households; furthermore, it is very vulnerable to capture by different economic agents involved in the transfer and management of the funds (Reinikka & Svensson 2004).

Capitation (2) can be seen an improved input-based financing arrangement: the input payment to the health facility is determined by the number of households or individuals who register to the health facility. This arrangement considerably increases households' decision rights on the budget, but only to the extent that they have the opportunity to choose among several health care providers.

One can imagine different ways to implement an *output-based financing*. The basic principle is that the decision by the household to use the facility has an impact on the gross budget received by the health care facility.

One option is that each visit is rewarded; this is what we call the *fee-for-service model (3)*. An alternative is that health facilities have to reach a certain *threshold (4)* (for example calculated in terms of coverage of total needs, e.g. 80% of 1 year old children are fully

[148] We are grateful to Susan Stout for this observation.

vaccinated) to access a given block of funds. This second model gives strong property rights to users as long as the health facility has not reached the threshold, but none afterwards (if there is only one threshold); it is therefore less egalitarian than the fee-for-service approach. Obviously, the more there are thresholds, the closer one approaches the fee-for-service arrangement. As many attributes of the services are under the control of the providers, one may want to give to the population also some firmer property rights on these attributes (e.g. satisfaction of some quality standards). This is feasible by conditioning the payment to the satisfaction of some quality indicators (to be verified by an agency acting as an agent for the users, see propositions #3 and 8).

The *voucher (5)* is an entitlement to one unit of assistance in kind. Traditionally, the aid agency (e.g. a welfare service acting a third-party) accepts to cover the costs incurred by the recipient when he avails of the given service. It is usually an output-based financing arrangement, as the agency reimburses providers according to the prices they charge to their users; however, most of the time, it includes more than the user fees charged by the health care provider (e.g. transportation).

The formula that gives the largest property rights to the households are *cash transfers (7)*. Such assistance allows them indeed to use the public budget to purchase any good or service they deem necessary: they are not restricted to a sector or to some categories of providers. *Conditional cash transfers (6)* are a variation of this model. They just establish conditions for the household to access the cash (e.g. to attend some preventive consultations, to send the child to school) (Rawlings 2004). The conditions can be seen as restrictions on the property rights that households have on their other assets and more particularly on their 'human assets'.

What is the best arrangement to apply this proposition? Obviously, it will depend on the context, the health needs and the performance problem to address. Our proposition expresses scepticism on the input-based model; yet, there may be situations where it is by far, the most efficient arrangement (e.g. during a humanitarian crisis)[149]. In more stable context, a solution more on the right of the table will be, most of the time, better.

Capitation empowers the households to the extent that they can choose the health care provider to register with. In low-income countries, this condition is rarely met in rural areas; it could be fulfilled in many urban settings. For countries suffering from a general pattern of excess of induced-demand (e.g. high-income countries), capitation is certainly an interesting option.

In chapter 9, we have seen two examples with output-based financing. The case of Cambodia is maybe less obvious than the Rwandan one, yet, the fact that the Health Equity Funds are financed with public or donor money and that they reimburse providers according to the prices the latter charge to paying users corresponds well to an output-based situation. Output-based approaches with thresholds have been applied in other low-income countries (Eichler, Auxila, & Desmangles 2007). There is also an emerging body of experiences with vouchers in low-income countries (Worrall et al. 2005), including in Cambodia (Ir et al. 2008); the cost of a referral and of major obstetrical interventions seems a particularly good candidate (Bhatia & Gorter 2007).

As mentioned, cash transfers correspond to the greatest transfer of property rights to the households. However, the situations where this approach can be adopted are limited for three main reasons. First, the property rights have content only to the extent that the

[149] One can note that one of the first priorities in health interventions for refugees is to have an accurate counting of the refugee population (Médecins Sans Frontières 1997).

local market economy is developed and regulated. Second, part of the cash may be captured by the head of the household and spent on services with limited or no benefit for the most vulnerable household members (e.g. tobacco). Third, the decision-maker may underestimate the benefits of health services (for example, because of a lack of information) – the *merit good* case. These three problems are in fact strong arguments in favour of providing health benefits in kind. The fact that many cash transfers are conditional indicates that households are not fully trusted as far as health seeking behaviour is concerned.

Finally, let us note that if this institutional proposition is combined with other mechanisms addressing problems at the level of public health providers (see further propositions), it could make sense to be restrictive in terms of providers to be covered by the scheme. Conversely, if for some reasons not vulnerable to the policy makers, the households do not use public health facilities, the policy maker must be ready to adopt an arrangement that leaves much more choice to the households (e.g. a cash transfer).

Type of financing → **Rights held by the household on the public assets ↓**	**Input-based financing with amount depending on population data**	**Capitation-based payment**	**Output-based payment (fee-for-service) with a third-party payer**	**Output-based payment (performance thresholds) with a third-party payer**	**Voucher**	**Conditional cash transfer**	**Unconditional cash transfer**
Decision rights on which health facility should receive which budget	Not at all	Yes, at time of registration	Yes, through utilisation	Yes, but only as long as the provider is below the threshold	Yes, through utilisation, but limited to the amount of vouchers	Extended (cash can buy any good or service on the market)	Extended (cash can buy any good or service on the market)
Utility or income stemming from the public assets	Yes to the height of the utility brought by the health service	Yes to the height of the utility brought by the health service	Yes to the height of the utility brought by the health service	Yes to the height of the utility brought by the health service	Yes to the height of the utility brought by the health service plus the savings in terms of user fees (and any other cost covered by the voucher)	Cash minus the disutility of meeting the conditions	Maximal, as it is cash
Rights to transfer the resources to another individual	No; benefit in kind.	No; benefit in kind.	No; benefit in kind.	No; benefit in kind.	Usually not (vouchers are usually nominal).	Yes, for the cash received	Yes for the cash received

Table 9: household property rights on public budget according to different payment-transfer strategies

Institutional proposition # 2: Public budget should reach the poorest

In our chapter 7, we have argued that policy makers should be particularly concerned with the poorest. There are multiple ways to consolidate poor's property rights on public health care assets. A key issue is to relieve them from the participation costs entailed by the uptake of their entitlement (e.g. transportation to the hospital).

Operational implications

One can identify a spectrum of solutions. These questions have been quite extensively covered in the targeting literature (Coady, Grosh, & Hoddinott 2004). In a nutshell, there are different ways to reach the poor. The government could decide to allocate more resources to health facilities situated in poor areas (geographical targeting) or to health facilities used by the poor but disregarded by the better-off (self-selection); another track is to finance services that meet the peculiar needs of most vulnerable groups (e.g. as tuberculosis and poverty are correlated, free tuberculosis treatment benefits mainly the poor). In a recent publication, we have proposed a step by step approach to this problem (Meessen & Criel 2008). In chapter 9, we have exposed how Uganda and Cambodia have reached their poor population by two different means.

A key mechanism to empower the poor households in their control of the ear-marked resources is to restrict these resources to their sole benefit. This will require an identification process.[150] One could imagine that this identification takes place at the point of use (for example, it could be done by a welfare worker based in the hospital). However, poor households' property rights are greater (more secured and not cut by some participation costs) if this identification takes place in the community. One could for example imagine that a remote health centre entitled some of its users for some assistance for their utilisation of hospital services (e.g. a voucher program for supporting women needing emergency care for a complicated delivery). Still, the best in terms of property rights is an identification done before the episode of illness; this requires a full registration system. The entitlement then can be assimilated to a health insurance. We extensively discuss such arrangements in our papers presenting the health equity fund experience in Cambodia.

Institutional proposition #3: Third-party payer must be established

If a government moves away from input-based financing, there is a point to set up at least one third-party purchasing agency.

In terms of property rights, the main traits of such an arrangement are the following: (1) the household keeps its decision rights on the utilization (or non-utilization) of a health facility; (2) if the household is covered by the scheme operated by the third-party and if the health facility is recognised by the third-party, the latter covers partly or fully the costs of the health service utilisation.

Such arrangements address the fact that users are in a weak position in front of health care providers.[151] A third-party payer can establish a much more rational and technical relationship with the health care provider. It can negotiate contracts and obtain much better conditions thanks to its market power. It may also recruit experts able to enforce

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[150] We acknowledge that in some societies, this step is not easy. While we are quite confident about the feasibility of such approaches in Transitional Asian countries, the experience so far in sub-Saharan Africa is less impressive. As far as means testing in the health sector is concerned, compare for example the case of Cambodia (Men & Meessen 2008) and the experience in sub-Saharan Africa (Noirhomme & Thomé 2006).
[151] Besides the market power and the asymmetry of information, the patient may be under stress because of the urgency of the care.

the more technical components of the contract. This enforcement can be practiced *ex ante* (e.g. through some accreditation process) or *ex post* (e.g. verification of the fulfilment of quality indicators).

Operational implications

The Ministry of Health can entrust, through regulation or contract, such a role to very different bodies. The idea of a third-party payer is that it is no more the owner of the health facility that organises its financing. To a sufficient extent, the purchasing body must be autonomous from the owner; its mission must also be clearly defined (see also proposition #5). In chapter 9, we have reported two approaches: in the 'Performance Initiative' this role was entrusted to a commission gathering several stakeholders of the health system, including the Ministry of Health (the 'steering committee'); in Cambodia, most health equity funds are managed by local NGOs (cf. Noirhomme et al. 2007 for the different models in place).

Different options seem possible. At one extreme of the spectrum, the central government could decide to keep a strong control on the third-party payer agency (this does not exclude of course to involve other stakeholders in the board of the agency and set-up other accountability mechanisms). This is the approach that has been taken by Rwanda for its national performance-based reform with the establishment of the "*Cellule d'Appui à l'Approche Contractuelle*". The main purpose of the central government option is to maintain the decision rights on the priorities, the targets and the financial triggers under the control of the Ministry of Health. This option is probably the most appropriate one when there is a risk that more decentralised levels (a local government or a private agency) may drift away from national public health priorities (because of lack of analytical skills or capture by the local elite).

At the other extreme, one could envisage a model where the purchasing function is taken at a decentralised level (e.g. local government, a NGO, a community-based health insurance). The HEF experience in Cambodia show that empowering the civil society through third-party purchasing bodies is certainly an attractive track. The approach is particularly relevant when the problems to address are very local and not too medical (e.g. who are the poor to entitle for free health care). Decentralising the purchasing power to local governments makes sense in situations where the central level is really too far from health districts (countries with huge population or a vast territory). In fragile states, the purchasing body could be an international NGO active at regional level.

There is no one-fit-all model. In regard to which actor should fulfil this purchasing function, we believe that one must stay away from dogma or prejudices. Performance measured in terms of benefits for the rural population and the poor in particular should be the bottom-line.[152] The institutional economic framework reminds that any economic agent pursues to some extent its interests; this rule applies also to humanitarian NGOs. The key question should always be: which organisation or organisational configuration is in the best position to consolidate the population's property rights on health care assets? In this respect, a key asset of the third-party organisation is credibility for allocating resources to the benefit of the population in the eyes of the key stakeholders: the sponsor (the Ministry of Finance or the donors, if any are present in the country), the providers and the users. Noteworthy, this third-party payer may fulfil other functions for

[152] Entrusting the third-payer role to a private for profit organisation is also theoretically and technically feasible, at least for curative care (cf. situations in Switzerland and USA); yet, not much evidence shows that it is more efficient. It is better not to open this Pandora's Box in low-income countries.

the health system (e.g. resource mobilisation, risk pooling, relieving households from any participation cost).

Institutional proposition #4: Other tracks for voice should be set up

The consolidation of the population's property rights over public resources may go of course also through the more traditional route of voice.

The most legitimate track is the democratic one. Governments could be held accountable on their budget for health (but more generally on their policies) through the electoral system. In many low-income countries, the main challenges for activating the political route to accountability are the difficulty to address the informational asymmetries and the limited actual electoral rights that the population has to sanction politicians. One response to overcome this is *decentralisation*. Yet, decentralisation, which can be defined as a transfer of some property rights from a central government to a government of a sub-territory, is not a panacea. Technical capacity at local level can be limited. Furthermore, there has been some confusion on the right package of rights to decentralise, as far as the health sector is concerned. Ill-designed decentralisation has led to even lower performance of the public health system (e.g. a neglect of primary health care to the benefit of investment in more prestigious hospital care). In some settings, risks of capture by the local elite are serious.

A second track to consolidate population's property rights on public health assets would be to get them represented in the board governing the health care facilities. The extreme option would be that the local population owns the health care facility. The approach could be through the local government, but less governmental arrangements are possible as well. In Mali, many health centres are owned by local associations ("*ASACO, associations de santé communautaire*") (Balique, Ouattara, & Iknane 2001). Intermediary models are possible as well. To a fair extent, the Bamako Initiative was a step in that direction: it established health committees in health centres and entrusted them major decision rights on a few key assets of the health centre (drug stock and bank account); yet, this transfer was very partial: the Ministry of Health remained the owner of the health facility and kept all decision rights on the health staff (e.g. hire and fire); this may explain the limited results achieved by the strategy. Our conviction is that countries must go much further in terms of empowering local communities and their elected representatives in the governance of health facilities. It would be particularly interesting to explore this track for referral hospitals. The reform package would include transfer of decision rights on personnel and the establishment of board of directors of which local representatives would be members.

A third and more recent track is to empower citizens as clients of public health care organisations. Different strategies are possible. One approach is to provide information to communities about inputs and grants received by the local public health facilities. This transfer of information can for example be organised through media (Reinikka & Svensson 2005); an alternative is to produce a 'report card' which summarizes information about the performance of a health facility and to share the results first with local communities, then with the health facility staff and then organise a meeting where both parties meet and agree on possible improvements. An experiment in Uganda has shown that this could be a very powerful and efficient strategy to improve key health outcome indicators (Björkman & Svensson 2009).

Complementary to this idea is the option to entrust some monitoring functions to community based organisations (see also proposition #8). In Rwanda, community-based organisations have been contracted by a third-party payer to verify the reality of the achievements reported by health care facilities (Soeters, Habineza, & Peerenboom 2006).

Such an activity could already be interesting under an input-based system, but it even makes more sense under a performance-based remuneration system. Under such a system, it is indeed crucial for the third-party payer to verify reports from health facilities, as these reports trigger the payments. Entrusting the role to a community body is interesting for at least three reasons: (1) it provides a new institutional route for community representatives to voice their observations on 'their' health facility; (2) it is probably less vulnerable to collusion than a verification that would be entrusted to other civil servants; (3) it is cost-effective. To some extent, the HEF model is another application of this route; especially when social workers collect information from their beneficiaries on hospital staff's behaviour.

As a summary, our conviction is that the best ways for citizens to voice their appreciation on the performance of the health care facilities they use must be re-assessed in many low-income countries. One can doubt that one single channel will suffice. To multiply and diversify the opportunities to access information and to produce a feedback is probably the strategy to promote.

Better structured property rights for health managers (#5-#7)

The way the government provides resources to health care facilities affects households' property rights on the budget. In order to increase households' property rights on public health care services, something complementary is needed: there should be incentives for the health care provider to optimise the use of the budget from a user perspective. This brings us to the second facet of the institutional reform: the way it restructures health care providers' property rights, and managers' rights in particular.

In our section 8.2., we have developed the analysis that the existing property rights structuring is not conducive to initiative and hard work. As it is not combined with credible career prospects inside or outside the public system, the fixed wage policy reaches its limits. The high-power nature should then come from the way managers earn their monthly income. This entails reforms at different levels.

Institutional proposition #5: Mission and performance must be clearly defined in formal contracts

Contracts in the public health sector today are too implicit and vague. The expectations the Ministry of Health has about decentralised health managers must be made more explicit. The attitude has been too casual at this level, in terms of trust.

Specifying a mission consists in identifying key goals to focus on, sometimes tasks to carry out and actions that are forbidden. Defining which performance is desired will often require some quantification (e.g. targets to achieve); as seen in chapter 7, its assessment will require some reference points. Such clarifications obviously require first that the principal has a clear understanding of what he wants to achieve. This questioning is particularly important if the principal has himself a rather vague mandate from some other principals. Only then, the principal is able to identify the indicators that he will use to assess the agent's completion of the contract.

Operational implications

Obviously, the key foundations for any contracting strategy within the health system will come from the national policy. It provides major orientations and possible strategies. As we have seen, this step is already taken for health centres and referral hospitals, as their

packages of activities have been defined.[153] Yet, one has probably to move towards more quantified achievements.

This is certainly the case if the output-based payment system which is adopted rests on thresholds to attain (e.g. coverage rate). With a fee-for-service system, such targets are less important, as the key variable to calculate the payment transaction is natural units. As illustrated by the Performance Initiative and the HEF strategy, the rule of payment and the implicit definition of performance are then pretty simple (i.e. one more fully immunised child, one more poor patient admitted). Nevertheless, one could still imagine that the third-party payer may want to establish rules to take actions against a provider performing too poorly, minimal thresholds may then be introduced. In some recent experiences, the third-party payer (e.g. an international NGO) has asked the health centre chiefs to come up with 'business plans' mentioning the key targets they intend to achieve (Soeters, Habineza, & Peerenboom 2006). The desirable performance can also be developed in (relatively precise) detail. In Rwanda, a set of more than 100 indicators are used to assess the quality of services delivered by the health centres.

Some Ministries of Health might consider introducing clearer missions for the district management teams as well. The priority could be to contract tasks which are crucial for the operation of the whole health system (e.g. the timely delivery of the routine health system data). However, for several key dimensions (e.g. development of the district, response to an outbreak), the performance of a district manager is difficult to contract. Indeed, his key role is to take decisions. The extent to which his actions were appropriate, timely, based on a good balance of risks and opportunities is not amenable to complete contracting. A key issue if a performance-based model is adopted for the district team will be to make sure that it does not strengthen its incentives to collude with the health facility managers against their hierarchical superiors (see below).

We are personally sceptical of the possibility to come to simplified definitions of performance for higher levels of the health administration. There is indeed a difficulty to identify output or outcome measures capturing the performance of different departments. Benchmarking is also impossible. Finally, there is an issue of agreeing on who will assess the performance (the Minister?). A way out is to focus on individuals by adopting a more subjective assessment approach of performance (e.g. with yearly assessment by the superior); yet, limits of such systems have been described in the human resource literature.

Institutional proposition #6: Managers must be exposed to higher-powered incentives aligned against their missions

In many public health systems, individual achievements have no influence on present earnings, and not much on future ones. This is not a motivating factor for potentially good performers. If one wants to introduce a culture of effort and initiative, changing this makes a lot of sense. Once performance is well defined, it is possible to do so: it is just a matter of establishing a formula linking some remuneration by the principal (the Ministry of Health) to different achievements by the agent (the health manager). Some achievements will be rewarded, others may possibly lead to sanctions (e.g. a fraud may lead to the cancellation of the contract). The formula creates new earning rights for the

[153] There has been renewed interest recently for identifying highly cost-effective primary health care strategies (Darmstadt et al. 2005;Jones et al. 2003). The lists produced include also activities achievable at community level, without direct involvement of health centres and hospitals.

health manager[154] over assets under his control (which include his labour time); he is now exposed to higher powered incentives.[155] The main benefit of a clear formula (e.g. a fee-for-service scheme) is that it greatly simplifies the enforcement of the contract: both the performance assessment and the rewards are not open to ex post interpretation; this reduces risks of opportunistic behaviours on both sides.

Operational implications

Linking a part of someone's income to the performance/achievement of some measurable tasks, attributes or goals raises several challenges in terms of the dimensions, indicators and triggers to be selected for the scheme. Indeed, as seen in chapter 6, you will get what you pay for.

A first problem is the one we have seen in our chapter 6: some dimensions of performance may be difficult or costly to measure by the user or any third-party purchaser. For this reason, the purchaser may decide not to include them in the scheme. We know from our chapter 5 that attributes that are not measured may be captured by other parties. More concretely in this case, there is a risk that the non-inclusion in the reward scheme induces the health manager to overlook the attributes.

A peculiar problem exists with dimensions which are observable, but not *verifiable*. By this, economists mean that the dimension may be observable by the parties in the transaction, but not by parties absent during the transaction. Non-verifiable attributes cannot be enforced by third-parties. Non-verifiability is a major constraint in health care transactions. The best example is perhaps the doctor's respect for patient's physical intimacy during the examination. In poor resource settings, where diagnostic tests are very limited, the correctness of the diagnoses is another not verifiable dimension.[156] For such attributes of the health services, any third-party will have to trust the transacting parties.

Related to that is the extent to which the performance indicators are falsifiable by the manager. Assessing the manager's performance only on the basis of his own report (e.g. records in the patient register) is, for some attributes (e.g. reality of a service), less reliable than evidence collected from the patient (e.g. through a voucher), who has no or little incentive to provide a false report.

In its effort to enforce its property rights on 'quality health services' from the health facilities, the third-party payer must also act strategically. A key recommendation from contract theory is to pay attention to the way the different tasks or attributes correlate with each other. The third-party payer should purchase tasks that are substitute, i.e. competing for the resources of the health facility; there is no point to purchase two tasks that are complementary or highly correlated from the health facility perspective: the purchase of one will automatically enforce the rights on the second one. We suspect that

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[154] We use here the term 'manager' in a generic way. We refer to the persons with substantial decision rights on the allocation of human assets across the different tasks assigned to the health facility. This includes **clinicians** susceptible to determine themselves their workload. If the management is collegial and highly participatory, the earning rights may have to be extended to all those participating in the decision. For an illustration of this, cf. our papers on Rwanda in chapter 9.

[155] One must acknowledge that in low-income countries, many health managers are already exposed to high-powered incentives: they get per diem if they attend training sessions and workshops, they obtain promotion if they stay close to the capital city… The problem is that most of these actions (workshop attendance, influence activity to obtain a position in the capital city) do not lead to a better health for the rural population (we owe this observation to Gerry Bloom).

[156] It is of course possible for an evaluator to observe a sample of consultations, which is indeed already informative, but not all of them.

this rule – sometimes not understood by performance-based financing scheme designers – could greatly limit the number of tasks to be purchased and verified, at least at health centre level.[157]

As far as indicators are concerned, they must be good proxies of dimensions of the performance to achieve. We more extensively discuss possible risks at this level in our proposition #8. It is important to note that once an indicator is remunerated it is in fact an attribute that is purchased. If the indicator was formerly used as a proxy to assess a more complex and global process, it loses part of its information content.[158]

As far as formula and triggers are concerned, a variety of options exist. A quite extreme option is to establish a concession on the health facility and to regularly open a bidding process for awarding the concessional contract; contestability will play to the extent that entry costs are limited.[159] The contract with the health facility can also be non-competitive, but with strong output-based triggers. There is a considerable contract theory literature on the pros and cons of unit versus threshold approaches (Dixit 2002). Whereas coverage rates make sense from a primary health care perspective, they are quite demanding from an informational perspective; they require indeed very precise knowledge of the target population. Such knowledge is difficult to gather in many low-income countries. Finally, one can also imagine a trigger for the execution of the payment (e.g. the health facility has sent its report to the third-party purchaser).

The Performance Initiative and the health equity fund experiences use very simple two-level arrangements to reward individuals: (1) a contract between the third-party payer and the health facility that sets an unit price per patient admitted; (2) an arrangement internal to the health facility that determines the share of this revenue accessible by individual staff through bonus payments. For example, in Cambodia, the health equity fund compensates the hospital for each poor patient it treats. The compensation is according to the standard fees practiced with paying patients. In such a set-up, one more patient means a supplementary income of a few dollars. Most of this income is used to pay a bonus to the hospital personnel. Each poor patient is then a source of income increase for the individual workers. This greatly reduces the reluctance of hospital staff to take care of poor patients. As seen in chapter 9, the Performance Initiative faced a more complex situation as the issue there was to encourage health centres in the development of their minimum package of activities. Such a multitasking set-up automatically raises the question of which tasks to remunerate.

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[157] This is obvious with tasks that are prerequisites or instrumental for others. For example, if the health centre is remunerated by new consultations, this creates an incentive to avoid drug stock-out and to be kind with patients. Setting performance indicators on drug management or quality of services is then less necessary.

[158] For example, the proportion of completed partographs is a way to assess whether a midwife monitors the progress of labour in order to identify when some obstetrical interventions are necessary. If one remunerates completion of the partograph, one will have more partographs completed. Yet, it will be difficult for the principal to be sure that those partographs have really been used during the labour; they may have been completed ex post, just to obtain the payment. A standard recommendation for indicators is that they should be SMART: specific, measurable, achievable, result-oriented and time-based. By paying for an indicator, one may affect its specificity. It is probably better to reserve the term 'indicator' to a measure of effort under an incomplete contract.

[159] Such an approach has been experimented in Cambodia (Soeters & Griffiths 2003).

Institutional proposition #7: Health managers must have more decision rights on processes

In many public health systems, the same superiors who are rather lax when it comes to enforcing performance in terms of outcome and outputs can be strict on processes and sometimes even interfering in the micro-management.

We believe that both Ministries of Health and their partners must be ready to adopt a much more 'hands-off' approach to health policies. They should assign clearly the directions – mission formulation and payment schemes are key instruments in this respect – but let health managers decide on the best strategies to achieve the assigned goals. As highlighted by Van den Steen, the contrary could anyway just generate conflicts and disobedience (health centre team producing reports complying with the rules, but adopting other strategies to maximise their gains) (Van den Steen 2007).

From a conceptual perspective, this takes us back to the key issue we have seen in our our chapter 6: the mission of an organisation must consist in a bundle of rights that are complementary to each other. This is certainly the case with earning rights and decision rights. Individuals must be able and allowed to take the actions that will allow them to increase their earnings (as long that these actions do not undermine other goals pursued by the principal obviously). By 'able', we mean that the manager must have enough decision rights on the different complementary assets required to achieve the task or the objective (e.g. having a functional operation theatre to perform caesarean sections). By 'allowed', we mean that the bundling of rights is such that tasks necessary to deliver a given outcome are not forbidden (i.e. linked to a negative reward) to the manager.

Operational implications

This recommendation must be well understood. By 'more decision rights on strategies', we do not mean that the Ministry of Health should let health care providers do what they want for the treatment of their patients. As highlighted by Donabadian, quality of care is also function of inputs and processes adopted for the production process (Donabedian 1966). The Ministry of Health (or the third-party payer) should monitor that the provider abides by guidelines and other quality of care standards, especially given the risk that they overlook the dimensions of quality which are costly and non-remunerated. We understand 'decision rights on strategies' as decision rights on issues such as the opening hours, the frequency of outreach activities…

This proposition has major consequences for flows of resources in a public system. Among other things, it means moving away from payment mechanisms that restrict managers' decision rights on the resources. As seen in chapter 8, the budget line item model is particularly constraining, as it 'freezes' *ex ante* the amount dedicated to different inputs. Giving greater rights to managers indicates that the more the manager receives his budget in cash, the better it is. There are of course restrictions: there must be a local market for the items he needs to purchase. If this is not the case or if quality of the products on the local market is questionable (e.g. drugs), resources must still arrive in kind. The key decision rule should be what the best strategy is to enforce population's property rights on the public resources. Interestingly enough, the higher-powered incentive upon the health managers will induce them to voice in a much more diligent way any frustration related to the delivery of resources from the different supply chains organised by the Ministry of Health (e.g. drugs, vaccines). The move away from budget line-item has also consequences in terms of accountability and control mechanisms within the public accounting system. Outputs much more than process should become the point of focus (see proposition #8).

In Cambodia, *Médecins Sans Frontières* has never told the local NGOs which strategy they should use to assist the poorest in their utilisation of hospital services: they explained the goal of the intervention and then signed a contract.[160] It was the same in Rwanda: some leeway was given to health centre teams to experiment with new local strategies. Later on, when the strategy became the national policy (see later in this chapter), it was decided that payment of outputs would arrive on the bank account of each health facility. More recently, the government has pushed further the decentralisation of budgets for personnel. If an employee leaves a health facility, his salary remains with the health facility.

In a nutshell, performance-based financing requires the restriction of decision rights on the goals, but an increase of the decision rights on the actions to take to reach these goals. We believe that many decentralisation reforms in the health sector would have achieved much better results if they had understood this fundamental rule: the Ministry of Health should set the goals, decide on the fees to remunerate the different related tasks, but let decentralised providers decide on the strategies to achieve these goals. Giving decision rights on objectives to decentralised governments generates a risk, given their lack of expertise in public health. In this respect, the Millennium Development Goals are a blessing: they set relevant objectives to all.

A coherent nexus of institutions (#8-#10)

One can write a new institutional arrangement on paper, but this does not make yet a reform. As argued in chapter 3, the new institutional arrangement will become a real institutional fact only if the different parties adopt it. This raises key questions in terms of enforcement, and the structure of power more fundamentally.

In this respect, we invite ministries of health to consider a Copernican revolution: their public health systems will perform much better if they are willing to let go of some of their power. The current situation where a Ministry of Health is simultaneously, among other things, the steward, the regulator, the funder, the employer, the supplier of drugs and consumables and the owner of infrastructure generates several conflicts of interest. It invites the different elements in the chain to dilute responsibilities for poor results, be complacent to each other or to spend considerable energy in influence activities. From a political economy perspective, it renders the Ministry of Health also much more accountable to the staff than to the population.

Performance of the whole system will come from a much clearer identification of the respective contributions of the different components of the system. For some key functions, the clarification has to go up to a *separation*, i.e. assignment of different missions to agencies (possibly to create) owned by different constituencies (e.g. own boards of directors). Noteworthy, such a separation does not mean dislocation of the system: splitting functions go hand in hand with establishing contracts which clarify what are the respective roles of different components of the health system. One must keep in mind also that such a reform will take place in a broader institutional environment.

We can structure such a view in three propositions.

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[160] Yet, the donor has of course to monitor the performance of the HEF manager. For this purpose, the donor will use a measurable definition of poverty; an approximate definition though, because of the horizontal and vertical vagueness of poverty (Qizilbash 2003).

Institutional proposition #8: Performance should be monitored and enforced

Whatever the remuneration mode, monitoring and enforcing performance should normally be a key concern for any principal. However, if a result-based financing model is adopted, the need is even greater. We see as a key principle that he monitoring and enforcement functions are organised in packages of tasks that seize economies of scope but avoid also conflicts of interest.[161]

Operational implication

The fundamental rule is of course that the third-party payer (cf. proposition #3) is sure that it really gets what it pays for. Indeed, paying a health facility for outputs it reports sets also an incentive to exaggerate its reports. This requires a *verification function* to be established.[162]

This function can be fulfilled by different bodies. The autonomous third-party payer may decide to fulfil the function itself or may for practical reasons (e.g. geographical distance), decide to subcontract it to some other actors. Whatever the option, the problem remains the same: how to avoid collusion at individual level. Indeed, if the main purpose of a verification process is to reduce the information rent of the provider agent, it automatically transfers part of the information rent to the verifying agent. The only way to deal with this problem is to create a coordination problem to would-be colluders. This may be achieved by different means.

One strategy is to split the verification tasks across actors. In Rwanda for example, there are currently several layers in the monitoring of the health centres. Main components are: (1) the hierarchical lines of the health system supervise the operation of the health administration; (2) the third party purchaser regularly analyses its data to detect outlier record patterns; (3) verification of health facility registers is entrusted to the administrative health district office, which has to report to a local steering committee; (4) verification of quality dimensions is entrusted to some hospital staff who have the expertise to assess quality of care; (5) a national NGO, which works through grassroots organisations, is in charge of doing some spot-check verifications by visiting households being reported in the health facility registers as users of some services.

Another strategy is to put the verifiers in repeated games with the third-party payer, but not with the health facilities. For example, the third-party payer can award a short-term contract to the body doing the verification, but with the clear expectation that the contract will be monitored and renewed if the third-party is satisfied. Conversely, one can organise a rotation of verifiers on different sites to be monitored. Rwanda has adopted such an approach for its referral hospitals.

One can make also the situation such that the health facility manager is not a single person. In Rwanda for example, as far as the performance-based financing is concerned, the contract is made with the health centre management committee. Furthermore, the income raised through the performance-based system is split among the staff. This requires a whole team's decision to cheat the system.

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[161] We focus here on the requirements of the system once it is established. From a more dynamic perspective, let us note that the introduction of the reform package will also have to be carefully monitored. This monitoring should be the responsibility of the central level, for example of a national task-force, whose director is kept accountable for success of the implementation. This 'monitoring of the reform process' requires a reliable information system, rapid analysis of data – benchmarking and trend analysis will be keys to understand whether the reform is going in the right direction – and a capacity to react swiftly.

[162] This verification function appears because of the fact that the beneficiary of the service is not the payer.

Eventually, it is obvious that in a pyramidal public health system, the classical hierarchical route (through the health district office) remains a key mechanism to monitor and enforce performance. This is particularly important for dimensions of performance which are difficult to contract (e.g. management of unexpected outbreak) or require an insider understanding. Furthermore, the reform may have unintended effects not foreseen initially; the Ministry of Health must develop its own monitoring to maintain control on this.

All these operational solutions are about control *ex post*. As already mentioned, some attributes of health services cannot be verified *ex post*. A way to consolidate the property rights of users on these attributes is to request the health facilities to demonstrate *ex ante* that they are capable to deliver services with such attributes. For instance, whereas one cannot verify that sterilisation of surgical instruments has been done correctly, one can observe whether there is an autoclave as well as a technician able to reproduce the required tasks in the health centre. Such a monitoring of necessary inputs can in fact be carried out before the acceptance of a health facility in a performance-based scheme (e.g. through an *accreditation* process).

One must keep in mind that even if monitoring is done properly, frauds may still happen. Once detected, sanctions must be taken along the performance contract. It is the whole credibility of the arrangement that is at stake.

Institutional proposition #9: Maintain and consolidate other performance-enhancing institutions and mechanisms

Several of our propositions so far were about the contract between the purchasing agency and the public health care organisation. This contract is indeed the main instrument to reorganise the property rights of both the users and the health managers.

Yet, as stressed throughout this thesis, and more particularly in our chapter 4, it is the whole nexus of institutions that shapes the property rights and sets the incentives. A key challenge for the reformer is therefore to get a clear understanding of the influence of the different institutions on the performance of the provider; he should make sure that other institutional arrangements restrain possible perverse effects of the remuneration model.

Operational implications

When revising the remuneration contract, the reformer will have to keep an eye on different institutional layers.

There is first the overall institutional environment and how the contract fits in the local legal and institutional scenery. The extent to which laws, contracts and rules are enforced in the country certainly matters. The fact that in Rwanda law enforcement is particularly strict has certainly contributed to the success of the Performance Initiative. The strong leadership displayed at the presidential level ensures also that governmental decisions are respected by civil servants and citizens.

A second important institutional layer is the one that we have called professionalism in our chapter 6. Professional education, codes of conduct and ethics are peculiarly important. Whereas peer pressure is key in enforcing professionalism, one must keep in mind that this effect is not guaranteed: under a performance-based payment rule, peer pressure can also play in the direction of maximising income for the staff.

A third layer of institutions will be those produced by the Ministry of Health or other governmental administrations: laws, decrees, regulation… Their main function is often to restrain property rights for individuals in their private or public activities. As argued in

our chapter 3, a regulation is an institution only if it is abided by; enforcement is therefore crucial. Introducing output-based arrangements in the public sector surely does not imply a weakening of the regulatory role of the Ministry of Health, it is rather the contrary!

A fourth layer of institutions will be all the other contracts that constitute the health care organisation of focus. We have annexed to this thesis a microeconomic model showing the interaction between an output-based contract (between a third-party purchaser and the provider) and different contractual forms for charging fees to users. Other contracts deserving special attention are certainly those with the national medical store (does the health facility get its drugs for free like in Cambodia or must it pay for them at their real cost like in Rwanda) and those between the health facility manager (or owner) and the individual staff members (including internal regulation, job descriptions).

However, institutions are not the only determinant of behaviours. As argued in chapter 7 (cf. Figure 7), individual values (e.g. honesty) and preferences are also influential. The reform will build upon them. As already mentioned, several key attributes of health services cannot be enforced by a contract between a third-party and the provider, as they are not verifiable (or it is too costly to do so). The best example is certainly the appropriateness of the service: in poor resource settings, it cannot be verified *ex post* for most health problems.[163] For these aspects, one will have to count on – i.e. to trust – the intrinsic motivation of health practitioners. Such an intrinsic motivation is not innate: it is the result of a long socialisation process, starting with education at home as a child and getting a specific structuring during the medical or paramedical education. As seen in chapter 6, professionalism is also about transferring values.

As far as intrinsic motivation is concerned, a responsibility of the reformer will certainly be to protect it from the possible undermining effect of the extrinsic scheme. Together with institutions, the health practitioners' intrinsic motivation is the other source of trust for users. Any new institutional arrangement must be developed in such a way that this trust capital is maintained and even increased (Gilson 2003). This may be a challenge in some aspects (Ridde 2005).

Institutional proposition #10: The redistribution of property rights must be coherent at system level

In our chapter 6, we have seen that a key issue in property rights structuring is to bundle rights in a coherent way.

It is therefore crucial to have a systemic view on the reform. Some propositions are prerequisite for others. Proposition #5 is for example a prerequisite for proposition #6. Some propositions are complementary; this is for example the case of proposition # 6 and #7. Two propositions can also be the two facets of a same reform. This is for example the case of propositions #1 and #6. Eventually, adopting a proposition without adopting some others can lead to real disasters. A nightmare situation is certainly the case where health care facilities are not financed by the government and are exposed to high-power incentives financed by users' out-of-pocket payments. The case of China is today well-known (Liu & Mills 2005).

Particularly important is to identify how the content of a proposition affects other blocks in the health system. For example, if one wants to adopt a quite advanced

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[163] An exception is any treatment starting after some diagnostic technologies with safely recorded results (e.g. antiretroviral therapy).

definition of performance for a certain level of facility (proposition #5), this will require a third party payer with higher technical capacity in terms of contracting and monitoring. Similarly, a sophisticated strategy to reach the poor (proposition #2) may require the sub-contractor to fulfil a larger set of functions (e.g. identification of the poor, distribution of the entitlement, purchasing of services, provision of assistance in kind…).

If the reform that we propose may entail here and there the creation of new tasks (e.g. the verification of patient records by a home visit in the community), much more fundamentally the reform is about redistributing existing tasks among different actors, some of which may have to be established or at least reinforced.

Key rules for such redistributions of tasks are those we have seen in our chapter 6: (1) as much as possible, one should bundle tasks that are complementary (in order to seize 'economies of scope'); (2) avoid assigning to a same actor two tasks that are conflicting with each other; (3) seize gains from return on scale; (4) bundle tasks that allow the manager to send a readable signal on his own performance to the job market, his hierarchy or any contractor.

We believe that applying these rules in a rigorous manner could dramatically challenge some established views on the organisation of public health systems in low-income countries. It would probably lead to a redistribution of some key functions.

For example, the fact that Ministry of Health fulfils so many functions creates some conflicts of interest. The government would better serve its population if it split these functions across a greater amount of authority levels (e.g. the ownership of health facilities to local governments, the purchasing function to the Ministry of Social Affairs, the verification to a provincial multi-stakeholder unit, the regulation to the Ministry of Health…).

The approach would probably also challenges some strategies at peripheral level. For example, as far as the task 'provision of care' is concerned, are we sure that the package of activities as they are defined and remunerated today is not generating conflicts of interest? Have public health centre staff really an incentive to promote healthy behaviours in communities (e.g. to sleep under mosquito bednets) when a fair share of their income comes from curative care?[164] At the hospital level, it would probably be also better to get the hospital manager more focused on the key role of a hospital in the health system: provision of quality services to people requiring diagnosis, treatment, a surgical intervention or a hospitalisation. The problems of accessibility should not be his concern. There should be institutional arrangements (e.g. community-based health insurance, health equity funds) that take this role as their own priority.

If such a questioning were applied to all the key functions of a health system, it is probably a new public health system that would blossom under our eyes…

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[164] We do not deny that integration of services offer interesting economies of scope. For example, during his consultation, the practitioner may observe that the patient would benefit from some health promotion message. One should of course encourage practitioners to give such advices. Furthermore, the recognised curative expertise of the practitioner probably increases the credibility of the promotional message. Yet, the promotional and curative activities are also sometimes in conflict for the use of scarce resources: the nurse either does an outreach promotional activity in the village or he treats patients in the health centre. Current incentives encourage the nurse to remain in his health centre. Much more than rhetoric, one has to acknowledge such conflicts of interest and address them. One option would be to split the tasks among two actors (e.g. treatment to the health centre and education to the community health workers, peer educators or expert patients).

A general implementation rule: Enforce, correct, institutionalize

We do not think that this dissertation should cover implementation issues. Some excellent manuals and guidelines have been produced very recently (Eichler & Susna 2008;Loevinsohn 2008) . Still, we would like to underscore three basic recommendations for the policy makers.

A first recommendation is to make sure that any new institutional mechanism is duly enforced. As we have seen in our chapter 3, a formal state that is not enforced does not make an institution. Enforcement can be sometimes achieved by the very way the transaction takes place. Paying after delivery is for example more constraining than paying before (to the extent that the provider has resources available). A fee-for-service arrangement automatically sanctions poor performers. Enforcement also means that government and/or third-party body invest sufficient resources in verifying performance and sanction cheaters, when they are detected. Enforcement means at last that other parties in the contract fulfill their obligations. For instance, the third-party payer (or the Ministry of Finance) must duly execute its payments.

A second recommendation is to make sure that the Ministry of Health keeps enough decision rights to fulfill its role of steward of the health system. A reform is rarely right from the very first day. There can be design problems to address, a stakeholder to reassure; corrections must be possible.

The last recommendation is directly related to our framework. Balance of power is the prime determinant of the actual control that parties have on resources. If the whole nexus of institutions that shape the new public health system rests on some new actors, it is crucial to consolidate their political power. They must become real stakeholders, with the power of influence it entails. Understanding this requirement is paramount in contexts where the new actors (e.g. local NGOs) have emerged thanks to the assistance of external actors (donors, international NGOs). Along this line of argument, it would make for example a lot of sense that Cambodian NGOs active in the delivery of services to the poor create their own lobby platform. Their future is to be subcontractors of the government. This is a mission which will require some strategic moves.

Taking stock of a growing body of evidence

The propositions we have listed above are inspired from the framework, but more fundamentally from recent experiences in a few countries. One can list a few experiences we have been directly in touch with or which have inspired our reflection.

An experience by Management Sciences for Health in Haïti has been central in creating awareness of the feasibility to contract in a result-based orientated way primary health care interventions in low-income countries (Eichler, Auxila, & Desmangles 2007).

The possibility to contract public health care facilities has been extensively explored in Cambodia by different agencies. The Swiss Red Cross adopted the strategy to organise its exit from the Takeo Provincial Hospital (Barber et al. 2002;Barber, Bonnet, & Bekedam 2004). The contract was quite elementary, but the success of the approach convinced the Ministry of Health and its partners that the approach could be adopted in other settings.

Médecins Sans Frontières-Belgium (MSF) adapted the strategy for its health district projects in Sotnikum and Thmar Pouk. As a matter of facts, the NGO was facing with these projects several of the bottlenecks we have seen in our section 8.1.: (1) a capture of public budgets for health facilities by the health administration; (2) low performance by most health care facilities; (3) limited commitment by managers; (4) evidence of a lack of accountability mechanisms. The New Deal strategy addressed several of these

bottlenecks. The entry point was the necessity to significantly increase the income of the health staff (Van Damme et al. 2001; Meessen et al. 2002). MSF (and UNICEF in Sotnikum) decided to finance an output-based remuneration to health facilities 'in exchange of' an increase in utilisation. A key lesson from this experience was that contracting health centres and district hospitals was possible and could lead to interesting increases in service utilisation. It appeared also that the strategy could consolidate key objectives pursued by the health district strategy.

Part of the income increase for the hospital staff had to come from user fees. The increase of user fees possibly raised significantly the barrier for the poor to access the hospital services. Concerned by the problem, MSF introduced on an experimental basis another institutional innovation: a fund to compensate the hospital for poor patients accepted for free. Since the start, the fund was entrusted to a local NGO through a contract. The Health Equity Fund strategy was born.

Initially developed as a sub-component of the New Deal strategy, the astonishing results achieved by HEF quickly convinced everyone that this was a major innovation, with huge potential for Cambodia. The strategy spread rapidly in the country mainly through international NGOs active at district level. Later, the strategy was adopted by the government as a national policy (Annear et al. 2008; Ir et al. 2009). This experience strongly backs our proposition #2.

Another major experience in Cambodia in terms of contracting – the greatest in size and in terms of impact at an international level[165] – was a donor driven project of contracting the management of whole health districts to international NGOs (Bushan, Keller, & Schwartz 2002). Several of the contract awarded international NGOs adopted themselves contracting approaches to establish new incentives for the public health care providers. The most innovative experience was probably the one by HealthNet International in Pearang district (Soeters & Griffiths 2003). This experience was an interesting step in the exploration of best approaches to contract health managers at the different levels of the health district.

Through HealthNet International and consultants, the Cambodian experience was disseminated to Rwanda. Two pilot projects in Rwanda (the Initiative for Performance and a project in Cyangugu Province by the Dutch NGO CORDAID) brought supplementary lessons. First, fee-for-service emerged as a simple and very powerful way to remunerate health centres (proposition #1). Second, stakeholders progressively realize that there was a need to clarify roles to be taken up by different actors in the health system (proposition #10). The Butare and Cyangugu projects differed in their strategy to establish a third-party payer, but both agreed that a body had to fulfil this function (proposition #3).[166] Lessons were drawn also on possible strategies to verify the performance (proposition #9). In Cyangugu, this new role was entrusted to community-based organisations: an interesting indication that population involvement is still possible in the new model, yet, with another role (proposition #4).

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[165] Similar strategies have been taken over in several post-conflict situations, including Afghanistan (Palmer et al. 2008).

[166] The Butare approach was inspired by the Steering Committee approach in Sotnikum. The idea is to establish a body where the different stakeholders are represented. The arrangement defuses possible conflict of interest, as transparency and collegiality are ensured. The Cyangugu approach took its inspiration from the Pearang approach. The idea is to entrust the third-party power to an international or national NGO. The arrangement gives a lot of leverage for the NGO to improve the situation of the population. A limit of the strategy is its limited seductiveness to governments and the fact it requires bidding process once the financing comes from public budgets.

Results from both projects were pivotal to convince the government and the World Bank to adopt the strategy at national level. This was a major decision. While all previous performance-based financing experiences in Rwanda and elsewhere had been established through project arrangements, from then on, the result-based orientated system would be fully within the public finance framework. This required reforms at multiple levels. A major step was certainly the adoption of a payment mechanism ensuring that public budget would be transferred to each health facility's bank account (proposition #8). The scale up required also the establishment of a national body in charge of the general direction of the new remuneration system (proposition #10). A government-international partner model was adopted. Quite quickly, the legitimacy and credibility of the arrangement convinced donors to channel their funds through the same unique system. This body took also a leading role in revamping the health information system in order to be able to closely monitor the development and results of the performance-based financing reform (proposition #9).

Although all these experiences were keys to demonstrate the feasibility of introducing higher-powered incentives in public health systems, they have far from exhausted questions on the strategy. For would-be reformers and researchers, many questions remain open.

10.2. TRACK FOR FUTURE ACTIONS AND RESEARCH

A new momentum

When writing up this dissertation and observing changes in Cambodia and Rwanda, our conviction steadily deepened that the international community will significantly improve the health status of the poor in the World only if it taps the creativity and commitment of the actors fighting the battle on the frontline: managers, doctors, nurses and community health workers. These last decades have been marked by a rapid abandonment of two leverages used in the past, authority and ideology. We believe that times are ripe for strategies taking better into account incentives; the public sector should not be an exception. Those who are able to be more efficient with resources under their control must be encouraged to do so.

Since our involvement in this research program, things have changed quite considerably.

First, new models of aid architecture have been introduced. In some respects, the new arrangements are more favourable to governments willing to reform their health systems. The Millennium Development Goals agenda has clarified how government performance is from now on understood at the global level (at least as far as the social sectors are concerned). The budget support strategy expands considerably the decision rights held by any government full with good intentions for the wellbeing of its population.

Second, there is an emerging body of evidence that reforming public health systems is feasible and can be beneficial to the population. The Health Equity Fund and the Performance-based financing reform in Rwanda are far from being the only experiences corroborating this optimistic view. More importantly for operational actors, there is an emerging body of best practices in terms of design and implementation. There are rules in terms of design, there are tricks to get a reform accepted by key stakeholders, there are implementation strategies to rapidly learn about an experiment…

Third, the few pioneer experiences have not remained unnoticed. Several major initiatives have recently been launched by major donors. For example, the Norwegian

Government is contributing to a Trust Fund at the World Bank for supporting countries willing to introduce result-based financing components in their health policies. Donors and international agencies are aware that such reforms will require additional funding, among other things because of the fixed cost related to the design, the evaluation and the required political buy-in by key stakeholders.

Fourth, the recent experience shows also that dissemination of new institutional strategies can happen rapidly through decentralised means. In a couple of years, all the NGOs active at district level in Cambodia had introduced a health equity fund in their projects. Much more remarkable perhaps is the way how the Rwanda performance-based financing experience spread rapidly in Congo RDC and Burundi. A few committed international experts and supporting NGOs can do wonders at this level.

The truth is that this rapid adoption of the strategy has been fuelled by huge frustrations. Many actors, and probably first of all health cadres in governments, realise that the softer and rather loose input-based approach applied so far will not work. For these leaders, the MDGs set a new horizon; much more than theory or dogmas, pragmatism should be the rule: what works should be scaled up.

We believe that a last factor plays a major role in what could be a real revolution in the organisation of health systems: information technology. Enforcing property rights is to a large extent an issue of measuring these rights. Database software, internet and numeric technologies do allow to dramatically reduce measurement costs on key attributes of health services. In Cambodia for example, many local NGOs managing a health equity fund have constructed a database of enrolees with numeric pictures of family members. In this way, risk of frauds is greatly reduced. Information technology allows also the reduction of the computation costs inherent to quite complex reward schemes. In Rwanda, the "*Cellule d'Appui à l'Approche Contractuelle*" has adopted an information system that links delivery of reports by the health facility with the execution of the payment.

Some risks and challenges as well

This new environment presents a lot of good reasons to be optimistic. Yet, one should not underestimate the obstacles that remain.

First, some of our propositions convey some risks.

There are those playing mainly at a macro-level. For example, a government may have some good reasons to prefer a line item-budget: in the eyes of the Treasurer at the Ministry of Finance, it has the major quality to be highly predictable and quite flexible for adjustment in case of cash constraints (a reality in many low-income countries, as issuing bonds is not an option and as macroeconomic or environmental shocks occur). Some output-based approaches transfer the risk related to a very high performance on the third-party payer or the government. This is an issue for public finance.

There are also risks of undesired effects at health system level. An obvious risk is related to the fee-for-service strategy. Whereas we believe that output-based payment has a lot of relevance in situations where heavy bureaucracy and under utilisation of services is the general pattern, history in high-income countries has also shown that such remuneration model may at a certain stage induce over-provision of care. Obviously, output-based payment (or any of its variations) is not a goal per se: it is an instrument to induce more efforts to the benefit of the population. If those efforts bring limited health gains or if the payment mechanism undermines the idealism of key actors in the health sector, it is high time to change the payment rule.

In this respect, it is crucial to keep in mind that path dependency plays a major role in the health sector. A critical issue will be to make sure that systems keep enough flexibility to adapt; i.e. that health authorities and other stakeholders are able to enforce other models later to health professionals. As mentioned in the introduction to this chapter, the perfect purchasing contract or the definitive nexus of institutions do not exist. Health managers adapt to their environmental constraints; some of these constraints are out of control of the policy makers (e.g. relative prices); the changing environment and new practices by health managers will require later revisions of institutional arrangements.

Some risks can also be at a more general development level. Empowering households through 'exit' mechanisms is certainly necessary, but this should not mean that strategies relying more on information or voice are to be given up. This is for example a legitimate question at the health equity fund, which assists the poor in their utilisation of hospital services but does not address the major causes of their poverty. The right balance of institutions will certainly have to be found in each context. Quick gains should not be at the expense of long-term developmental progress.

The ten propositions that we recommend in this chapter have also the property to shake many stakeholders on their foundations. Opposition may come from the civil servants (part of their status may be at stake), but also from some aid agencies, which are quite comfortable with the input-based strategy ("build-equip-train"). For example, it is not because an experiment brings interesting lessons that it will lead to a national reform. If the Government of Cambodia was rather quick to adopt the HEF as a national policy (Ir et al. 2009), this has not been the case so far for the health district contracting experience.

Future of this research program

Obviously, this research program is closely associated with actual reforms or at least experimental institutional changes in public health systems. We know that a flow of new experiences is about to be launched. This should ensure a sound future to the research program presented in this dissertation. We believe that its expansion could take three forms.

A first expansion will happen by the mere multiplication of institutional experiments or reforms. This is already ongoing, as far as the number of countries trying such strategies is concerned. Cross-country comparison will lead to a better appreciation of the general character of some phenomena observed in Rwanda and elsewhere. One can also hope an expansion of experiments by progressive deepening in terms of technical features. One should eventually hope that new experiments will cover the different levels of the health system. As far as low-income countries are concerned, this is far from certain, given some tropism at donor level. Hospitals have been particularly neglected so far. They are complex arrangements, a fact which clearly does not pose them as 'low hanging fruits'. As far as hospitals are concerned, knowledge progress will probably mainly come first from middle-income countries. Yet, there are experiments to be tested in low-income countries as well (autonomization, new mode of remuneration for the clinicians…).

One can also hope that research designs adopted for documenting upcoming interventions will be better than those that were available to us in Cambodia and Rwanda. For instance, the fact that the World Bank has moved to a more rigorous approach to the assessment of its intervention will hopefully produce stronger evidence on the impact of the institutional reforms it supports. We expect also some countries to develop some leadership in documenting their experiments. China could be one of them.

Yet, scientists adopting randomised evaluations as their main strategy should keep in mind that it is the whole nexus of institutions that determines the property rights and therefore the behaviours. External validity of such impact evaluations will remain limited, as soon as the studied arrangements are somewhat complex.

Unfortunately, some of these pilot experiments or reforms will fail; due to poor design, poor implementation or perhaps the opposition of some powerful stakeholders. Others will lead to a change for the population. Whatever the final scenario, these experiences will have to be documented, among other things, to understand the possible determinants of success or failure. In this documentation undertaking, we hope that the main messages brought in this dissertation will be taken up and taken into account by researchers.

A second expansion will happen in terms of research questions. There is a multitude of interesting points deserving attention. How does the reform impact on human resources? Does it crowd-out intrinsic motivation? What are the strategies adopted by health centre teams to increase their performance? How should one bundle tasks at different levels? What about the cost-effectiveness of a given reform package? What could be the exact role of private nonprofit organisations in these arrangements? What about the impact of a fee-for-service model on patients' autonomy? And how about the impact of a reform on equity? One can expect also that health experts dealing with different health problems (e.g. maternal health, malaria…) will be willing to document the impact of such schemes or reform on some key indicators in their domain of intervention. One can also hope that political scientists and applied political economists will try to understand what the key factors are to have a health reform accepted by key stakeholders.

A third possible area of expansion is at a theoretical level. As highlighted in our chapter 7, we have only developed a framework. Some theories and models are needed to make it work. Interesting tracks are numerous. One could use multitasking models to explore the bundle of tasks for organisations providing services to the population. Incomplete contract theory could be helpful to understand when a purchaser-provider split is superior to a proprietary model. More complex models could try to explore the interactions between the different components of a health system. The whole field of political economy in the health sector is also relatively untouched for the moment.

More than ever, public health experts, health economists and political economists have to work together.

CONCLUSION

Performance of public health systems in many low-income countries is not satisfactory. This calls for major initiatives. A significant increase in resources will be needed, but our personal belief is that it will not be enough: there is a need also for significant improvement in the efficient allocation of these resources.

Our view on the need to address also the inefficiencies of the public sector is shared with many. Yet, till recently, little action had taken place to address these problems. A constraint was probably the lack of clear ways forward in terms of reform. Our belief is that the provision of clear policy guidance was hampered by the lack of an analytical framework to apply to public health systems.

This dissertation is an attempt to move towards such a framework. In our introduction, we identified five ideal qualities for an institutional framework. We believe that our institutional economic framework has these five major qualities.

First, it has some descriptive power. It identifies a limited list of variables that should receive the attention of the health care organisation analyst. The originality of our contribution is the stress we put on the institutions and property rights variables. We have also proposed empirical strategies to document these key variables.

The framework has a strong analytical power because of the rigorous links it establishes between the key variables: institutions shape property rights that economic agents have over assets. Our framework comes also with a simplified representation of organisations: they are viewed as nexuses of institutions. Yet, the framework does not work alone. It is a shell to welcome theories and models. These theories, by focusing on a specific phenomenon and proposing a causal explanation of its occurrence, and models, by adopting specific complementary assumptions to investigate this phenomenon, 'animate' the framework and develops its full analytical power.

The framework has also an instrumental power. It allows to identify causal variables susceptible to changes. These variables of adjustment are the institutions. They are possible triggers for inducing change in behaviour and therefore in performance of health care organisations. Some institutions are easier to enforce than others. This is of course a key attribute to the eyes of the policy makers.

Any reform requires some clear direction. In our chapter 7, we have shown that our framework allows to better identify normative choices, especially in terms of defining what a performing health care organisation can be.

Eventually, we have highlighted the argumentative power of our framework at two levels. In our chapter 7, we have stressed how the framework was evacuating ambiguities in terms of concepts. This was a long overdue for the institutional analysis of the health sector. We have also argued that being discursive, the framework may facilitate the dialogue between economists and health experts trained in other disciplines. We have illustrated this argumentative power in our chapter 8 by developing an institutional analysis of reasons behind the low performance of public health systems in low-income countries and by formulating ten propositions of reforms in our chapter 10.

For sure, our work is a step only. Much more work is needed. First, there are many theoretical aspects still to clarify. We have identified a few in our chapter 10. We hope that public health systems in low-income countries will at last receive the attention they deserve from economists. Their findings will be useful to guide reforms to come. The truth however is that many reforms will take place before that this theoretical work is available. This creates major responsibilities for the agencies and experts inviting governments to reform their public health systems. One will be to allocate enough resources to the documentation of the reform. This documentation will have to go beyond the mere demonstration that the institutional change has had the impact that was desired. Researchers will have also to document the context of the reform, its exact institutional content – in this respect, we believe that our institutional economic framework will be useful, and any effects that were expected or not. There is evidence that part of the scientific and operational community is preparing itself for this huge challenge.

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