The subsidiarity principle, a tool for redefining a country?

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Summary

This paper first suggests a methodology to help redefining the distribution of powers within a federation. It uses a test based on the subsidiarity principle and initially proposed by Pelkmans (2008) to discuss the distribution of powers between the Member States of the European Union and this latter.

Then an application has been carried out for three competences – direct taxation, higher education and scientific research, and wage setting. It has been suggested that individual taxation should become the primary source of revenue for regions, while corporate income tax should be maintained as a federal competence. Concerning higher education and scientific research, on basis of the Swiss experience it has been concluded that higher education should be a regional competence while advanced education should be within the federal competences when it uses expensive equipments and it is more prone to economies of scale. As regard wage formation, it has been argued in favour of the centralisation of rules so as to avoid harmful competition among regional regulations.

Finally, critical considerations about the method introduced and applied have been developed for three issues: the optimal dimension of infrastructures and public services, the asymmetries existing between a « bottom up » and a « top down » process, and the efficiency gains capacity to be a basis for a federation.

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1. Introduction

This paper examines to what extent the subsidiarity principle, at the root of the construction of the European Union, may help redefining the distribution of competences between the different levels of power in Belgium[2].

More precisely, in the first part of this study, the subsidiarity test suggested by Pelkmans (2005) and presented, discussed and extended by Ederveen, Gelauff and Pelkmans (2008) in their contribution to the book edited by Gelauf, Grilo and Lejour (2008) has been introduced; while this test has been handed over by the authors in the context of the distribution of competences between the Member States of the European Union and this latter[3], the present paper is developed in the context of a federal State made up of two components. To achieve this objective all the competences have been supposed initially attributed to regions and then reasons are discussed which may lead to transferring some of those competences to the federal level. This analysis represents the second section of this article[4].

In the third section, the test has been qualitatively applied to three specific competences, one in the field of public revenues, direct taxation, one in the field of public spending, higher education and scientific research, and the last one in the field of regulation, wage formation. In the fourth section, the arguments developed so far have been discussed from three perspectives: the restriction to only two levels of power, the possible asymmetry between a centralization process, as the European construction, and a decentralization process, as that observed in Belgium, and the capacity of efficiency gains to be a basis for a federation; the endogeneity of the formation of regions has been tackled in this last point. The fifth section summarises and concludes.

2. The subsidiarity test

Imagine a federal country, named the Federation; the country is made up of two member regions respectively called Neustria and Austrasia[5]. Social preferences between these regions are heterogeneous: the Neustrian median voter is not the clone of her Austrasian fellow. All the competences are initially exerted by regional governments tentatively supposed to be benevolent, by which is meant motivated by the achievement of the highest level of welfare for the median regional voter; for the rest, the economy obeys the rules of perfect competition. This institutional and economic environment is in line with the scenario supposed by Musgrave (1959) and Oates (1972). The hypothesis of non-benevolent governments and the arguments developed by the new political economy will be introduced in the sub-section 2.2.

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[2] The question of competence distributions among levels of power in a federation is not unknown to economists; it has been already approached by R. Boadway in his 1979 book.

[3] For an application of this test, see also the study titled « A Study on EU Spending » commissioned by the European Commission to Ecorys, CPB Netherlands and l'IFO Institute for Economic Research.

[4] As an example, article 35 of the Belgian Constitution states that « The federal government has jurisdiction only in matters that are formally attributed to him by the Constitution and laws enacted under the Constitution itself. Communities or regions, each for its part, are responsible for other matters in the terms and conditions established by law. This law must be adopted by the majority stipulated in Article 4, last paragraph. » However, a transitional provision stipulates that « The law referred to in paragraph 2 shall determine the date on which this section comes into force. This date cannot be earlier than the date of entry into force of new items to add to Title III of the Constitution, determining the exclusive powers of the federal authority. »

[5] There are not many federations with only two components in the real world. Let us mention Tanzania, whose components are Tanganyika – on the African mainland – and the island of Zanzibar; though it can be analysed as a two component federation, Belgium is actually a *sui generis* six component federation.

2.1. The functional subsidiarity test

The functional subsidiarity test developed below relates the lessons of fiscal federalism with the economic concept of subsidiarity, according to which no competence should be transferred to a higher level of power – to a level of power operated on a larger geographical zone – if it has not been proven that the higher level of power can exert it in a more efficient or in a more equitable way; however in this paper we focus on efficiency and define an efficiency gain as an improvement of the social welfare for at least one region without any loss of welfare for the other region.

The test has been developed in three stages. The first one aims at determining which competences should be transferred from the regional to the federal level, or in other words, exerted in common. If some competences are actually transferred to the federal level, the second question then arises: should they be exerted through intergovernmental arrangements between the two regions or by a federal agency? And, finally, if a federal agency is called upon, how will that agency acts: by issuing rules applicable to all actors across the federation, or by spending a budget that the federal authority is in charge of, or eventually by also being habilitated to levy its own financial resources?

Before addressing the first issue, land us characterize the social welfare of each region *i*, or the individual welfare of each regional median voter or representative citizen, by the following equation[6]

$$W_i = c_i + \alpha_i \ln\left(g_i + \beta g_j\right),\ i, j = a, n \tag{1}$$

In that equation c_i stands for *per capita* private consumption deemed to be equal to the individual income *y* (equal across region) net of the regional income tax levied at rate t_i; g_i (viz. g_j) is the provision of public goods in region *i* (viz. in region *j*). Key parameters are α_i and β : the former reflects the local preferences for public goods and the latter measures the sign and size of the external effect. We assume that there are N_i inhabitants, and voters, in region *i* so that the budget constraint of the regional government is

$$g_i = N_i t_i y \tag{2}$$

Then maximizing equation (1) subject to the budget constrain (2) gives us the optimal provision of public goods in and by region *i*,

$$g_i = \alpha_i N_i - \beta g_j \tag{3}$$

That provision increases with the preference for public goods and with the number of contributors, but it decreases (increases) with the provision of the same good by the other region depending of the sign and the size of the externality. Solving equation (3) for both regions we get

$$g_i = \frac{\alpha_i N_i - \beta \alpha_j N_j}{1-\beta^2},\ g_j = \frac{\alpha_j N_j - \beta \alpha_i N_i}{1-\beta^2} \tag{4}$$

or, in the particular case of symmetric regions

$$g_d = \frac{\alpha N}{1+\beta} \tag{5}$$

In that equation, a subscript *d* stands for that decentralised case. The regional level of social welfare then is

[6] That mathematical expression has been suggested to us by Massimo Bordignon.

$$W_i = y - \frac{(\alpha_i - \beta\alpha_j)}{(1+\beta)(1-\beta)} + \alpha_i \ln(\alpha_i N_i) \quad (6)$$

2.1.1. Acting together?

The two partner regions will decide to act together if acting in common increases the welfare of at least one of them whilst not decreasing that of the other, even if it entails the organisation of a system of interregional side payments or other forms of compensation.

Two arguments typically induce to act in common, another brakes this process. The first argument is the internalisation of externalities.

Suppose that the road linking the cities A and B of Neustria is partially situated in the Austrasian territory and that the inhabitants of Austrasia do not wander hardly or at all this portion of the road, even if they finance it. It is easy to imagine that the quantity and the quality of this portion of road supplied by Austrasian authorities will be worse than if supplied by a central authority – the Federation – acting in view of the well-being of the citizens of the two regions: in the former case, congestion and potholes will be the prize of Neustrian car drivers. Austrasian authorities indeed will not be concerned by the impact of their budget decisions on the welfare of their neighbours: unlike the case of a federal entity, for Austrasia the impact of its budget decisions are externalities that it does not internalise. In other words, internalisation of externalities is an argument in favour of centralisation.

Figure 1 illustrates this phenomenon. On the horizontal axis it is measured the gauge of the road in terms of, for example, vehicles that can drive on it per hour; on the vertical axis it is expressed a measure of the marginal social welfare or utility (demand) of the road translated into monetary terms. The increasing line represents the marginal cost caused by the provision of the road gauge. The decreasing line on the left reflects the marginal utility calculated without taking into account the positive impact on the Neustrian inhabitants (the externalities); the increasing line on the right represents marginal utility once these externalities have been taken into account. The intersection between the decreasing line on the left and the line representing the marginal cost – choice of Austrasia – leads to an insufficient provision of public infrastructure – the point g_a is on the left of the point g_c.

[Insert here figure 1]

In mathematical terms g_a is given by equation (4) while g_c comes from the joint maximization of the welfare of both regions,

$$g_c = \frac{\alpha_i + \alpha_j}{N_i + N_j} N_i N_j \quad (7)$$

It can be argued that the negative externality here pointed out for Neustrian car drivers may be internalised through a market mechanism: the sale by Austrasia to Neustrian car drivers of the right to enjoy a quality road on its territory, through the use of a toll or of a sticker. This is not false. It is then possible to take another example: imagine that goods that have to be delivered to Neustria come into the Federal territory through a harbour located in Austrasian, where quality controls are performed and financed by Austrasians. One can expect that controls for the sole benefit of Neustria will be worse performed by an Austrasian agency than by a federal one.

The second argument is economies of scale. It is possible, in fact, that building a common incinerator for the household wastes of the two regions is a less expensive option than building an incinerator in each region. It may be so as the average cost for destructing wastes in an incinerator decreases with the amount burned, for example because of large costs in terms of construction and maintenance staff. Achieving a gauge minimising average costs and so exploiting economies of scale, i.e. working on a larger scale, is a second argument in favour of centralisation.

Figure 2 shows that. Monetary units are measured on the vertical axis while the incinerator size is measured on the horizontal axis. If the two regions are equal but each one acts separately, they choose both an incinerator of size *g* generating an average cost c_1; whether they reach an agreement, they choose an incinerator of size*2g*, generating nevertheless a lower average cost c_2. It can be observed - this point will be analysed again in section 4.1 - that the former, however, remains above $c*$, associated with an incinerator of size *g**.

[Insert here figure 2]

It appears therefore that the internalisation of externalities as well as the exploitation of economies of scale are both in favour of centralisation, hence of acting in common.

These arguments nonetheless have to be balanced with some others. Attributing competences to a higher level of power implies moving away from local preferences. The federal median voter is neither the one if Neustria nor the one of Austrasia! In other terms, federal choices do not correspond to any of the two regional median voters: there is, in reality, what is called a uniformity cost (see for example Hindriks and Myles, 2006, and figure 3 below inspired by their book).

If Neustrian inhabitants and Austrasian residents have similar tastes, the Federation population is homogeneous and the issue underlined here does not exist: the uniformity cost is low or inexistent. On the contrary, if the social preferences of the residents in the two regions are different, heterogeneous, the uniformity cost may be a serious brake to act in common. A Neustria-Austrasia agreement for building a common incinerator certainly allows exploiting economies of scale, but it can be the case that only Austrasians wish to use that technology of waste disposal, their Neustrian neighbours preferring another method, like land filling.

This is shown in figure 3. The decentralised choices of the two regions are respectively g_n and g_a. The centralised choice is g_c, which does not correspond to any of those.

[Insert here figure 3]

Said that, if the regions are heterogeneous, it may be that a coordinated delivery of public goods exploits economies of scale without, however, implying an identical delivery to the inhabitants of the two regions, in particular if the delivery is individualized. That topic has been investigated notably by Besley and Coate (2003).

Another argument in favour of decentralisation may be added usefully, in particular in the field of revenues: regional responsibilities.

In conclusion, centralisation gains, like the internalization of externalities and the exploitation of economies of scale, have to be compared with the cost of the possible uniformity; if the gain exceeds the cost, there will be an economic argument for transferring the competence to the level of the Federation. If this is not the case, there will be an argument for maintaining the competence at regional level. In mathematical terms, given the equations above, centralization will occur if

$$\begin{aligned} &2y-2\frac{\alpha_i+\alpha_j}{\left(N_i+N_j\right)^2}N_iN_j+\left(\alpha_i+\alpha_i\right)\ln\left[(1+\beta)\frac{\alpha_i+\alpha_j}{N_i+N_j}N_iN_j\right] \\ &\geq 2y-\frac{\alpha_i+\alpha_j}{1+\beta}+\alpha_i\ln(\alpha_iN_i)+\alpha_i\ln(\alpha_jN_j) \end{aligned} \tag{8}$$

2.1.2. Intergovernmental cooperation between regions or a central authority?

Suppose that the two regions have decided to transfer a given competence to the level of the Federation. A choice then arises which has to be solved in a way the most possible in line with the subsidiarity principle: organizing an intergovernmental cooperation between the two regional authorities or setting up a federal authority with the responsibility of the competence? In the latter case, the federal authority may be a specialised agency or, if the series of competencies attributed to one or some federal agencies is large enough, a true federal government.

The former solution, the coordination between regional authorities, is *a priori* the most consistent solution with the subsidiarity principle. If this coordination is feasible and credible, it should be the preferred. On the contrary, if the subject of the coordination agreement may be realised more efficiently or may only be realised through the establishment of a specialised authority, with a clear delegation of authority, for a period of time determined or undetermined, this organisation should be the preferred.

An argument in favour of the establishment of a permanent agency, whose extreme case is the federal government, is that of avoiding inter-temporal inconsistency and other strategic behaviours, which may be shown by regions. Ederveen, Gelauf and Pelkmans (2008) mention a number of reasons why the credibility of voluntary cooperation between regions may be low, particularly a very imperfect and asymmetric distribution of information «especially in complex policy areas, because this renders it impossible to monitor compliance». Adding «credibility is also low when the incentives to cheat are strong and the ability or willingness to impose (collective) sanctions is perceived as minimal. »

To use the terminology of the industrial economy, the choice is between a joint venture and an integrated firm or even between a credible static coordination and a long-term contract.

The cooperation between regions is indeed, *a priori*, the most consistent solution with the principle of subsidiarity. Nevertheless this solution has a cost: the permanent renegotiation of specific contracts. On the contrary, the establishment of a federal government may seem less consistent with the subsidiarity principle, but it may avoid the abovementioned costs. The decision will depend by the evaluation of benefits and costs of the alternative institutional organisations.

2.1.3. A federal agency: in charge of what?

Suppose that, in a series of particular fields, it has been decided to establish a federal agency with a long-term responsibility. Arguments of cost have then convinced the regions to put in common these agencies so that they form a federal government.

How this federal government will exert its competences? Referring always to the subsidiarity principle, Ederveen, Gelauff and Pelkmans (2008) have introduced the notion of proportionality: nothing more than what is necessary to achieve the common established objectives has to be done at central level.

It is possible to imagine three ways to act for the central authority. They can be illustrated with reference to a particular competence that should be attributed to it: higher education.

The first way may be described as « take care of all »: the federal authority decides on the contain of programs, on the location of the schools, as well as on the tuition fees to be charged to students, charging the cost of higher education in the federal budget and even raising at that level the revenue needed for fits the expenditures. It is in some sense the view of the Federation as an organizing power.

In a second way, the federal level may decides on objectives and rules, and subsidizes some actions to realise those objectives or to conform to those rules. The federal entity may also decide that the regions have to organise higher education in their territory, raising everywhere tuition fees calculated disregarding students region of origin, but taking into account their socio-professional origin. The federal entity is then in charge of operating transfers to the regions so as to assure the achievement of its policy. This is the Federation financing projects: budgetary costs are lower than in the previous option and they are not related to the revenue of the Federation.

Finally, in a third way, the central entity limits itself to establish rules: regions have to provide to their young citizens the means to be educated at a higher level, whose quality criteria are determined by the central entity. For doing that, a region may organise by itself the system of higher education in its territory, respecting federal standards. It may, however, even finance the education of its youth in the neighbouring region. In this case, the federal level is not financially involved, other than for the little organisation necessary to the supervision of federal rules application. This is the Federation prescribing rules.

In order to illustrate that, let us consider the Swiss case. The federal government is directly responsible in the field of university education where economies of scale are the most likely to occur, engineering and related fields; examples of this are the Federal Institutes of Technology in Lausanne and Zurich. In the other fields, cantons organise by themselves their universities or transfer resources to neighbouring cantons in proportion to the number of their residents following university education in those cantons (Chevalier and Gérard, 2009); this is hence a seemingly credible interregional coordination which is at work.

It is also possible to illustrate those three attitudes comparing the European Union to large federal countries like Canada and United States of America. The first one clearly belongs to the third option: its budget represents nothing else than one percent of the European Union GDP. In the United States, for the 2009-2010 federal revenues should rise up to 15 percent of the GDP, and expenditures up to 28 percent. In Canada, both are around 15 percent.[7]

2.2. Public failures and political economy: an extended test

So far the two regional governments and the federal entity have been supposed to be benevolent, i.e. driven by the desire to maximise the welfare of their region or of the two regions together. Supporters of the contemporary political economy, however, have shown in a very convincing way that, in the real word, alongside market and the private sector failures, public sector failures and other arguments based on their researches should be taken into account.

2.2.1. Leviathan governments, an argument for decentralising

After Brennan and Buchanan (1977), economic literature incorporates the fact that governments may not be benevolent but motivated by the pursuit of their own best interest, which may be identified with the rent that power brings, to the interests of their clients or of the political group they belong to, or even with the sole ambition to be re-elected. These governments are called Leviathan.

The question hence becomes: if there is a difference between the result of the decision of a benevolent government and that coming from the decision of a Leviathan authority, what form of public organisation is best suited to reduce this difference and to restore the outcome of a benevolent government? Is it centralisation – a single or unitary government – or decentralisation – a federal State?

A well-known argument in favour of decentralisation is that, in a decentralised political structure, citizens have more control over their leaders: in such a structure, in fact, the management teams of the regions compete for attracting on their territory mobile activities and the tax bases they convey, and thereby for increasing the

[7] *Budget of the US Federal Government, Fiscal Year 2010, Updated Summary Tables*, Office of Management and Budget, May 2009; *Le Plan d'action économique du Canada, le budget de 2009*, Finance Canada, January 2009.

welfare of their region. Tax cuts generated by this competition force local authorities to a more efficient administration of the public services. Moreover, in a federal structure, the voters in a region can compare what their leaders provide them in terms of public services, in return for the taxes they pay, with what the neighbouring region provides, in return of the tax revenue collected there, and thus threatens the re-election of incumbent leaders.

In other terms, decentralisation makes leaders more responsible. Conversely, a centralised authority is more likely to pursue its own goals rather than those of electors. In this regard, Ederveen, Gelauff and Pelkmans (2008) cites Oates (2005), for whom « decentralization may be preferable even in cases of perfect homogeneity across local jurisdictions ».

On the basis of Gérard, Jayet and Paty (2009), this sentence however needs more elaboration. It is, in fact, contingent on the effective capacity for citizens to make comparisons. These can be made more difficult by language differences between regions or even by the very little amount of information that the press of a region provides about what happens in the other region.

2.2.2. Lobbying authorities

Land us redefine the difference mentioned above as that between the result of the decision of a benevolent government and that of a government under pressure from lobbies. For Ederveen, Gelauff and Pelkmans (2008), economic literature does not unanimously support the proposal of Lockwood (2005), who states that «traditional intuition that local government is more susceptible to capture by lobbies ». According to the three authors, the review of the literature is not conclusive; they suggest, nonetheless, distinguishing between the case where lobbyists have convergent objectives throughout the Federation and that where they have contrasting objectives. In the first case centralisation protects against their activities, whilst in the second centralisation is preferable.

Gérard and Ruiz (2009) have studied the impact of the political regime on the level of statutory tax rate of corporations, using panel data for 53 or 93 countries around the world. The results show a higher tax rate in federal States. If these results are interpreted in line with the article of Campos and Giovannoni (2008), for whom certain forms of government are more likely to be lobbied than others, it may be concluded that the federal structure protects lobbying. A closer reading of the institutional reality, however, mitigates such temptation: corporate income tax is generally a federal tax upon which regional or local taxes are added – cf. Canada and United States, or even Germany. Therefore, if the vitality of regional lobbies is able to push down local tax rates, the central power will be more immune to downward pressures as tax competition, if it is at work, is stronger within its borders.

2.2.3. The form of the federal government

Beyond the debate between unitary State and federal State, the analysis of Ruiz and Gérard (2009) shows that the form of government, including the federal form of government, deserves careful consideration.

So far it has been implicitly supposed that the federal government is in the hands of a body seeking either the common interest of both regions or its own interest. This is what Inman and Rubinfeld (1997, 2002) call the economic or centralised federalism. They distinguish it from the cooperative or decentralised federalism and from the democratic or majority rule federalism. In the former, regions decide unanimously, in the latter majority wins.

In relation with the discussion conducted in this paper, cooperative federalism makes point g_c in Figure 3 the result of a compromise between the two regions – observe that marginal utilities are equal. In democratic federalism, on the contrary, this point may reflect the preferences of the federal median voter. Democratic federalism, however, may also, if not accompanied by minority protection mechanisms, induce a dictatorship of the most populous region; a related issue indeed is whether members of the federal parliament vote in line with their ideological family or in line with their regional affiliation – that question has been studied by Roland for the case of votes at the EU Parliament.

Returning to the example where, in the management of household waste, Neustria prefers land filling and Austrasia incineration. Imagine that in the federal Parliament, elected representatives vote according to their regional affiliation, because they are accountable first to their constituency consisting of local voters (Lockwood, 2005). If Austrasian elected MP's outnumber Neustrian ones, the latter region will be forced to adopt and finance a technology that it does not want. From the Neustrian point of view, in this case, despite economies of scale linked to the use of a large incinerator, decentralisation might be preferable. Under the same conditions, if more populous Austrasia is more sensitive to problems of aging and less to other social issues than its partner, more affected by unemployment, there is the risk of inadequate provision of social services if the provision is a federal competence. Conversely, Austrasia gets its advantage out of doing policies for aged population a federal competence, so as to benefit from an effect of « common pool ».

The form of a federal government is therefore important. Focusing on the impact of the form of government in general, concerning the resistance to lobbying in the field of corporate taxation, Gérard and Ruiz (2009) shows that a parliamentary regime protects more against lobbying than a presidential regime, and that a majority system – a parliament elected according to a majority system in one or two rounds like in Britain or in France – protects more than a proportional system – like in Belgium or Israel.

From this discussion it follows that the centralisation of powers at federal level, justified by arguments of internalisation of externalities and economies of scale, has to be accompanied by a careful design of the form of governance and of the decision making process at federal level, in particular when this concerns instruments of for the protection of minorities. This is especially true if regions are heterogeneous and unequal in size: otherwise the risk arises that seeking the best interest of the Federation be turned into a dictatorship by the richer or more populous region.

Formally, in the former case a benevolent central government provides the quantity of public goods given by equation (7) while in the latter case, assuming $N_i > N_j$, region *i* may dictate to the federation an amount

$$g_{ci} = 2\alpha_i \frac{N_i N_j}{N_i + N_j} \tag{9}$$

2.3. Redistribution and insurance

In this contribution, redistribution and insurance issues, though they are especially important, have been left aside; they have been addressed in particular by Dreze (2009) and the works collected by A. Decoster, which comment on this contribution. A priori, some arguments are in favour of their centralisation.

Two qualifications, however, deserve emphasis. The first is one is the « common pool » issue: any region has an interest to have expenditures in favour of its own residents financed at federal level – by the « common pool » – and thus financed by the other region as well; as a consequence in a federal State there may be an excessive demand for redistribution.

The second reservation concerns the heterogeneity between regions, also already mentioned. Imagine a region having a larger ageing population and another where population is younger but more exposed to an economic structure generating unemployment. Preferences of these regions in the field of social insurance will probably not be the same.

3. Applications

As preannounced, in the third part of this text the method described above will be applied to three fields. The first one is the competence in terms of revenues, direct taxation, the second deals with a competence over spending, higher education and scientific research, and the latter refers to a competence in the field of regulation, wage formation.

3.1. Direct taxation

Putting direct taxation, i.e. income taxation, in the hands of the regions might be a source of externalities: regions may become engaged in tax competition to attract mobile tax bases on their territory. Transferring the taxation of potentially mobile incomes from regions to the federal level is hence likely to increase the performance of the country. In this proposal, the word « mobile » is the keyword: if revenues are not mobile between regions, there will be no reason to transfer taxation at federal level at least in terms of externalities – there may be an argument of economies of scale for centralising the collection of taxes.

Conversely, regional preferences on tax structures as well as regional targets in terms of tax revenue collection lead to keep taxation as a regional competence. The same applies for the accountability of regions: competences in the field of spending have to be accompanied by competences in the field of revenues. Regions, otherwise, find no difficulties in presenting ambitious programs and then lamenting that the federal government does not give them the means to realise their plans.

The lesson from this brief discussion is in a proposal: keep at regional level the tax base needed to finance regional spending and make it consisting of elements that are not mobile between regions, or that have low mobility. The study by Gérard, Jayet and Paty (2009) is instructive in this regard: if tax rates of Belgian municipalities, on labour income, are sensitive to the rates of surrounding communities, this sensitivity is lower when the neighbouring municipality belongs to another language jurisdiction. The regional boundary appears hence as a barrier to sensitivity and so to mobility. The reason is that, in Belgium, changing region may have an important cultural cost: education no longer given in the mother tongue, no longer cultural or sporting infrastructures in the own language etc...

For these reasons, it can be suggested that people are less mobile between regions than companies; as a consequence, and since income tax is levied at individual's residence, it can be proposed to make the personal income tax the main source of funding for regions accountable for both their revenues and their spending – with maybe some transfer to the region where the income has its source –, and to maintain corporate taxation as basically a federal competence.

3.2. Higher education and scientific research

After a competence in the field of revenues, it is possible to analyse a competence over spending. The main economic argument in favour of centralisation of expertise in higher education and scientific research is an argument of economies of scale.

Based on this argument, it would be more effective to assign higher education and scientific research to the federal level, as they use expensive equipment whose duplication or multiplication is not economically justified, or require teams whose replication is too expensive or intellectually impossible. The Swiss example already mentioned in section 2.1.3 is interesting in this respect: higher education is a competence of cantons, but the federal level is responsible for fields which require most expensive equipments and are most subject to economies of scale – cf. the federal Institutes of technology in Lausanne and Zurich.

In the same perspective, a credible cooperation between communities may be established on issues such as the implementation of the Bologna process, student funding, and degrees equivalence.

3.3. Wage formation

Wage formation is a competence in the field of regulation. Keeping it at regional level – hypothesis underpinning this work – exposes to inefficiencies related to the non-inclusion of externalities and to the development of possible regulatory competition between regions.

The debate, thus, is similar to that described above in the field of taxation, in particular in the field of individual income taxation.

A key difference, however, is the following: labour income taxation takes place in the residence of workers, so in the region where they decide to stay, while the rules of wages formation are determined in the region that is the source of income, the workplace. Consequently regulatory competition does not involve a movement of a worker residence, in particular in a small country like Belgium. The cost of job location mobility, for workers, is therefore lower than that of residence mobility: it is essentially the cost of commuting – actually mostly in terms of time lost as employers often finance transport costs – and of learning another language.

For these reasons, contrary to what has been stated about individual income taxation, for which a regional competence was suited, here the centralisation of rules underpinning wage formation has been argued in order to prevent harmful regulatory competition.

Common standards, nonetheless, do not necessarily imply identical wages or rules: a central agency, pursuing the highest welfare for the entire federation, may decide about wage differentials, or rule differentials even if centrally established. Taking again the example at the beginning of this article, a higher unemployment rate or a lower cost of living in Neustria may make this area more attractive for investors and contribute to a recovery of the difference in economic development.

The reader may usefully compare the position taken here with e.g. that of Regional Ministries Marcourt and Vandenbroucke, reproduced and discussed in Cockx and Vanderlinden (2009).

4. Criticisms and Limits

In this text a methodology suggested and applied for studying the distribution of competences between the Member states of the European Union and this latter has been applied to the debate on the deepening of federalism in a country, with a tentative application to Belgium. This application, or applicability, to a country like Belgium has limits calling for a critical look at the approach.

4.1. Two vs. more levels of power

Two levels of power, the region and the Federation, have been assumed so far. In doing so, any room for the internalisation of externalities or the exploitation of economies of scale was an argument for transferring a competence from the region to the Federation. In reality, there is no guarantee that transferring a jurisdiction to a wider geographical area makes it more effective. Figure 2 illustrates that: the incinerator could display an even lower average cost if its capacity was $g*$. That size, however, exceeds the needs of the Federation.

In other words, beyond the regional level, there are a number of possible levels of power – in the case of Belgium: the federal State, Benelux, the founding States of the European Union, the Eurozone etc ... To each jurisdiction it is possible to associate an effective area, which completely internalises externalities or allows a full exploitation of economies of scale – cf. the minimum efficient scale of the industrial economy; this effective area is such that the marginal efficiency gain is zero.

Nevertheless, the enlargement of the area of an infrastructure or of a public service is likely to increase the heterogeneity of preferences in the territory concerned. It is therefore possible to imagine that the optimal area is such that the marginal gain in efficiency equals the marginal cost of uniformity. Reasoning in this way allows defining, for each infrastructure or service, an optimal area. Grouping then optimal areas of similar dimension, it is possible to imagine « competence packages» whose optimal area is respectively the region, Belgium, Benelux etc ... It is, however, not possible to exclude *a priori* that Belgium is the optimal area for any competence. Nor that the marginal cost of uniformity is assessed differently by different regions, leading to different optimal areas according to the point of view adopted.

4.2. Bottom up vs. top down

The approach presented in section 2 was of a « bottom up » type, intending to go upwards from the regional to the federal jurisdiction. The European Union has been built like this, and Germany was unified as well in the 19th century. Is it, however, relevant for the Belgian debate? In this country there is a « top down » process: it is a question of attributing to regions competences previously «federal». In other words, is it possible to consider the reorganisation of Belgium as if «Belgium of daddy» had never existed?

If the answer to this question is positive, the method proposed in this article is valid and its applicability is symmetric. An economic argument of efficiency exists for decentralising the competences for which this process does not create diseconomies of scale or inter-regional externalities outweighting the gain coming from a greater consideration for local preferences.

On the other hand the answer may be negative as well. If the road between the cities of Neustria is located in Austrian territory, perhaps it is not by chance that the two regions are part of the same unitary country. The importance of externalities that arise in case of decentralisation depends on the common history of the two regions: a shared infrastructure exists whose dismantling has a non-zero cost which might hinder the effectiveness of decentralisation.

4.3. May a federation be based on (sole) efficiency gains?

The European Union is an example of putting in common a sand of competences in line with the principle of subsidiarity and the production of efficiency gains. Few persons nowadays would take the risk of considering the European Union as an accomplished federation, while in the late Forties a European federalist movement was particularly active. In the 19th century Germany apparently undertook a similar process and everyone agrees to qualify this country as a federation.

A hypothesis can be risked: a federation requires a sufficient degree of homogeneity – in the common language this is called membership or common culture – so that its member would wish a strong solidarity among them. The latter may be interpersonal – a social security policy – as well as interregional – a strong equalization mechanism (on this point see Boadway, 2006). In other words, the heterogeneity of social preferences is without doubts a proxy for cultural distance increasing with the distance in kilometres.

The link between the two distances, cultural and in kilometres, however, is not fixed: regions can come apart or come closer to each other over the events of history – the formation of regions is partially endogenous –, modifying the cost of uniformity suggested above and the likelihood of an apparition of the willingness to put competences in common and to show a strong solidarity between them.[8]

[8] The temporary attachment to France in the late 18th and early 19th century helped, thanks to a secondary and higher education exclusively performed in French, to create a homogeneous ruling class across the whole Belgium; thereafter, the appearance of universal voting and the widespread teaching in Dutch in Flanders have reduced that homogeneity.

5. Conclusion

This paper has first introduced the subsidiarity test suggested by Pelkmans (2005) and Ederveen, Gelauf and Pelkmans (2008) to discuss the distribution of competences between the member States of the European Union and this latter. The test has been then adapted and used to shed light on the Belgian institutional debate; it has been assumed that all the competences were originally in the hands of the regions and communities and it has been assessed which competences was economically justified, on the basis of an efficiency criterion, to transfer to the federal level. In so doing, it has been taken into account the internationalisation of externalities, as well as the exploitation of economies of scale, the respect for local preferences, and regions accountability, but also the possibility that governments may be not benevolent, but sensitive to pressures from lobbies, or even of different forms (presidential, parliamentary majority or proportional parliamentary).

A qualitative exercise has been then conducted for three specific competences: direct taxation, higher education and scientific research, and wage formation. At the end of this exercise, for the first of these competences, direct taxation, it has been suggested to make personal income taxation the main source of funding of regions accountable for their revenues as well as for their expenditures, while maintaining company taxation a federal competence.

Concerning the second, higher education and scientific research, the conclusion achieved follows the observation of the Swiss practice: higher education is a competence of cantons, which cooperate among them, but fields of studies using expensive equipments and more prone to economies of scale are a federal responsibility – cf. the federal institutes of technology in Lausanne and Zurich –.

Regarding the third one, wage formation, it has been argued that the centralisation of rules in order to prevent harmful regulatory competition might be a good option. Common rules, however, may not necessarily lead to identical wages or rules: a central agency, pursuing the highest welfare of the entire federation, may establish wage differentials, or different rules even though centrally established.

A critical view on the method presented and discussed has been finally developed, in order to identify the, or at least some, limitations of this approach. This critical analysis has been articulated around three issues. The first concerns the optimal area of an infrastructures or a public service; this area, defined by the equality of marginal efficiency gains, coming from the internalisation of externalities or the exploitation of economies of scale, and the marginal cost of uniformity imposed by the distance from the local level, may vary depending on social preferences of regions; beyond region, a number of areas may be candidate for such status and the question hence becomes that of the division of powers among regions and the different other levels of power, like the federal State, Benelux, the Eurozone, the European Union...

The second concerns the symmetry, or asymmetry, between an allocation process « bottom up » as the one that occurs nowadays for the European Union and occurred in Germany during the 19th century, and a « top down » process like the one that has been observed in Belgium since the mid-20th century.

Finally a last question has been raised, perhaps the most delicate one: may a federation be based on (sole) efficiency gains? In other words, why Germany but not the European Union is so qualified nowadays? A hypothesis has been risked: a federation requires a sufficient degree of homogeneity – in the common language what is called membership or common culture – so that its members wish a strong solidarity among themselves. This latter may be interpersonal – a common social security – as well as interregional – a strong equalization mechanism – cf. on this point Boadway (2006).

The above considerations are, in the authors' view, likely to shed light on the debate concerning the institutional organisation of the new Belgium; they do not exhaust, however, all the possible contributions that fiscal federalism theory can give to the construction or the reconstruction of Belgium, an unfinished country...

References

Besley T. and S. Coate (2003), « Centralized vs. Decentralized Provision of Public Goods: a Political Economy Approach », *Journal of Public Economics*, 87, pp. 2611-2637.

Boadway R. (1979), *Public Sector Economics*, Winthrop, Cambridge.

Boadway R. (2006), *The Principles and Practice of Federalism: Lessons for the EU?*, a paper initially prepared for the Conference "What Should the EU Do?", Stockholm, October 24 2005.

Brennan G. and J. Buchanan (1977), « Towards a Tax Constitution for Leviathan », *Journal of Public Economics*, 8, pp. 255–73.

Campos N. and F. Giovannoni (2007), « Lobbying, corruption and political influence », *Public Choice*, 131, pp. 1-21.

Campos N. and F. Giovannoni (2008), *Lobbying, Corruption and Other Banes*, IZA Discussion Paper 3693.

Chevalier C. and M. Gérard (2009), *La Mobilité étudiante est-elle facteur de croissance ?*, Congrès des économistes belges de langue française, commission « Croissance and Education ».

Cockx B. and B. Vanderlinden, eds (2009), *Does it make sense to regionalize labour market institutions*, Re-Bel Initiative, e-book 2, Brussels.

Drèze J. and A. Decoster, ed. (2009), *On the Interaction between Subsidiarity and Interpersonal Solidarity*, Re-Bel Initiative, e-Book 1, Brussels.

Ecorys, CPB Netherlands and IFO Institute for Economic Research (2008), *A Study on EU Spending*, European Commission européenne, DG Budget.

Ederveen S., G. Gelauff and J. Pelkmans (2008), « Assessing Subsidiarity », in Gelauf G., I. Grilo and A. Lejour, eds (2008), *Subsidiarity and Economic Reform in Europe*, Springer-Verlag, Berlin and Heidelberg, pp. 19-40.

Gelauf G., I. Grilo and A. Lejour, eds (2008), *Subsidiarity and Economic Reform in Europe*, Springer-Verlag, Berlin and Heidelberg.

Gérard M. (2007), « Pour une Belgique repensée », *La Libre Belgique*, 21 août.

Gérard M., H. Jayand and S. Paty (2009), *Tax Interactions among Belgian Municipalities: does Language matter?* CESifo Working Paper 2558, Munich.

Gérard M. and F. Ruiz (2009), *Corporate taxation and the impact of governance, political and economic factors*, communication au colloque « The Economics of Political Economics », Milan, September 11-12.

Hindriks J. and G. Myles (2006), *Intermediate Public Finance*, MIT Press, Cambridge and London.

Inman R. and D. Rubinfeld (1997), « Rethinking Federalism », *Journal of Economic Perspectives*, 11, pp. 43-64.

Inman R. and D. Rubinfeld (2002), « Subsidiarity, Governance and EU Economic Policy », *CESifo Forum*, 4.

Lockwood B. (2005), *Fiscal Decentralization: a Political Economy Perspective*, Warwick Economic Research Papers 721.

Ministère des Finances du Canada (2009), Le Plan d'action économique du Canada, le budget de 2009, Ottawa.

Musgrave R. (1959), *The Theory of Public Finance*, Mc Graw Hill, New York.

Oates W. (1972), *Fiscal Federalism*, Harcourt Brace and Jovanovich, New York.

Oates W. (2005), « Toward a Second-generation Theory of Fiscal Federalism », *International Tax and Public Finance*, 12, pp. 349-373.

Office of Management and Budget (2009), Budget of the US Federal Government, Fiscal Year 2010, Updated Summary Tables, Washington.

Pelkmans, J. (2005), *Testing for Subsidiarity*, BEEP Briefings 13, College of Europe, Bruges.

Figure 1 – Externalities

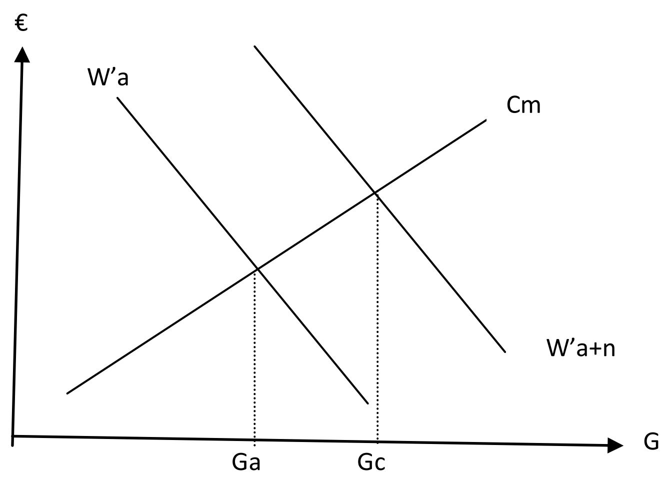

Figure 2 – Economies of scale

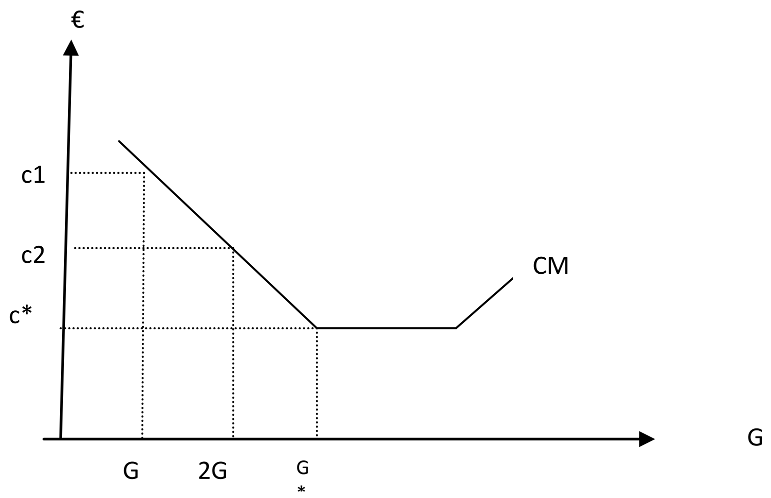

Figure 3 – Cost of uniformity