ON THE INTERACTION BETWEEN SUBSIDIARITY AND INTERPERSONAL SOLIDARITY

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The Re-Bel initiative aims to rethink in depth, in an open, rigorous, non-partisan way, what the institutions of the Belgian federal state - or of whatever else this part of the world needs to become - can and must look like in the longer term, taking full account of the evolving European context.

The Re-Bel initiative does not aim to produce one programme or manifesto to which everyone involved could subscribe. Its ambition is rather to provide a fertile intellectual environment in which new ideas and promising initiatives of all sorts can germinate and develop, with a concern for their relevance to a thorough reform of Belgium's institutions, but also to the institutional design of other complex polities, most obviously the European Union.

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Introduction

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In analyzing the run up to the French Revolution, the British historian Simon Schama opposes the "late Enlightenment Rationalists" like Talleyrand, Barnave or the Marquis de Condorcet, whose "language was reasonable and their tempers cool", to those who were

> "*not only ready but eager to use popular force and the polarizing language of patriotism and treason to empower their ideology. […] Rationality, however, did not have a monopoly of utterance in 1788 and 1789. The kind of eloquence needed to mobilize popular anger to the point at which it could be used as a lever of power was not cool but hot. And the stokers of revolutionary heat were not prepared to allow it to cool off for the benefit of moderate constitutional change. They were guided neither by rationality nor by modernity but by passion and virtue.*" (Schama, 1989, pp. 243-245)

In selecting this quote to introduce the first E-book of the Re-Bel initiative I certainly do not want to suggest that institutional quarrels in Belgium have pushed us into a pre-revolutionary stage, comparable to the clean break of the French revolution, let alone to the years of Terror following shortly afterwards. But what is to be learnt from the analysis of Schama is that we should never take for granted that "rationality has the monopoly of utterance". Reasonable language and cool temper is a hard-won daily fight in public discourse and political debate. Precisely for that reason the Re-Bel initiative is timely and long awaited.

The mission of Re-Bel is to foster this open, rigorous, non-partisan and reasonable way of thinking about the institutions of the Belgian federal state in the longer term. So, what better way to kick-off Re-Bel's E-book initiative than with a lead piece by Jacques Drèze? His text "On the interaction between subsidiarity and interpersonal solidarity" is an original, convincing and stimulating analysis on how one can set up a conceptual framework to deal with often passionately formulated questions and proposals about loosely spoken "the regionalisation of social security". How stimulating Jacques Drèze's paper is, is illustrated by the enthusiast, critical and often equally interesting comments by seven distinguished colleagues.

But let me first briefly introduce the text of Jacques Drèze himself.

It consists of two central ideas. The first one - not surprising for those familiar with Jacques' publications - emphasizes that what many politicians, and a fortiori the broader public, consider as 'redistributive' activities, can often (but not always of course) be interpreted as ex post transfers of welfare improving insurance contracts. The adjective 'ex post', used by economists, refers to the fact that, *after* an accident happened, the insured gets his damage repaid by the insurance company. The 'donors' are all the other insured who have paid their premiums. The 'recipient' is the person who incurred the loss or damage. And yet, it would be better not to speak about 'donors' and 'recipients' since this risk sharing is welfare improving or win-win for all insured parties, also for those who happen not to receive transfers since they have not been struck by misfortune. Reasoning within this insurance framework sheds a very different light on many transfers going on in the welfare state. In his text Jacques Drèze shows that also interregional transfers could be designed and/or interpreted within this framework. From this perspective, and only within the context of eventual future interregional transfers (since Jacques Drèze only considers his insurance perspective to bear on future developments), a transfer from (eventually rich) Flanders to a

possibly poor Wallonia should not be interpreted as Flanders who is 'helping' Wallonia. No, the transfer follows from an agreement by which both Flanders ànd Wallonia insured themselves against lower than expected growth in real GDP per capita. It means that Flanders in that case perceives (at least part of) its higher regional GDP as a matter of luck and is aware of the possibility of the reversal of fortunes.
This application at the interregional level brings us to the second central idea of the paper. The insurance framework could lead to the hasty conclusion that, other things being equal, pooling the risks at the broadest possible level is preferred. This would plead in favour of keeping social security at the federal level (or moving it even higher up). Yet, Jacques Drèze shows that one can implement efficient risk sharing in a two tier structure. The upper tier then consists of an insurance between the units of this upper tier (e.g. the regions) concerning the uncertainty of future deviations of real regional GDP's per capita from their expected trend. This insurance gives rise to "interregional transfers", implemented through the financial innovative instrument of bonds indexed on the regional GDP per capita. The second tier implements the interpersonal "within-region" redistribution (still to be interpreted as ex post transfers within an ex ante-efficient insurance system).

This brief summary certainly does not cover all detail and nuances, let alone the depth, of the text of Jacques Drèze. But since most of the commentators also open their comment with short summaries of the main ideas in the text of Drèze, I leave it like this for the introduction. Actually, the variation in the summaries produced by the discussants is also informative about the heterogeneity of the scholars who read the text and thought about it. Which is not surprising in view of the fact that our set of invited commentators consists of French, Dutch and English speaking economists (and one philosopher of course), Belgian and foreign, experienced in problems of federations like Canada, teaching in – at least for the time being – a centralized state like France; some are middle-aged, a bit older, or young and unburdened of historical traumas or frustrations.

I would classify the comments of Robin Boadway, Christian Gollier, Jean Hindriks, Pierre Pestieau, Erik Schokkaert, Johannes Spinnewijn and Philippe Van Parijs into four broad, non exhaustive, categories.

1. Most discussants are moderately to very positive about the approach advocated by Jacques Drèze to consider most (if not all) transfers as part of an insurance design. This comes as the lesser surprise. But it could of course also reveal the bias in our set of commentators, who are predominantly economists, and of whom many are trained and specialized in the economics of insurance. It also shows how valuable and much appreciated this framework is, also outside the setting of Belgian institutional reform, to clarify issues of efficiency and redistribution, and the (often taken for granted) trade-offs between the two. Most commentators seem to realize (and regret) that this seems "hard to understand for short-sighted analysts" (Christian Gollier), but, see also point 3 below for the critical comments on pushing this insurance approach too far.

2. Within the insurance framework, many commentators, if not all, refer to the problems of "commitment" (why would a region not renege on the contract?) and "moral hazard" (why would a regional government not be tempted to induce a negative deviation of the expected real regional GDP per capita in order to capture transfers?). Some of them, like Jean Hindriks, clearly remind us of the fundamental properties of mutual insurance, and – Jean Hindriks, Christian Gollier, Johannes Spinnewijn - introduce the requirement that the insurance contract should be self-enforcing (which would fix the commitment problem in removing the incentive for a region to defect unilaterally). Amongst other things, this constraint of self-enforcing contract depends on the time horizon adopted. The longer the time horizon, the larger the expected gain of insurance. This is also stressed by Robin Boadway and nicely illustrated by Christian Gollier who opens his comment with the story of the reversal of fortunes of China since the early fifteenth century. The answer to the question whether the framework might be usefully adopted to discuss institutional reform in Belgium hence crucially depends on the time

horizon of the policy makers (and of the electorate as Robin Boadway remarks). Erik Schokkaert suggests that moving to a two-tiered approach might make it more difficult to deal with both the commitment and the moral hazard problem. The indispensable trust in institutions that might weaken the commitment problem will not be fostered by a two-tiered approach. And to tackle moral hazard we need some "shared understanding" of which factors are under or beyond the control of, in this case, politicians. Again, this shared understanding might be eroded by the two tiered approach. Christian Gollier adds the interesting thought that also "intrinsic motivations may inhibit moral hazard", although "whether or not communities can develop such intrinsic incentives remains an open question at this stage".

3. The second set of substantive comments goes beyond the insurance framework and questions whether the reduction of 'redistribution' to insurance is sensible or justified, at least if one pushes it as far as most discussants perceived it in Jacques' text (but see Jacques' reaction on this perception in his Reply, par. 12). Pierre Pestieau seems to be quite critical about it, and refers to the "limits of the veil of ignorance approach" [to] "explain why one tries to find other foundations of the redistributive role of the government: ethical values, altruism, political economy or recently evolutionary biology". Also Erik Schokkaert doubts whether the "interpretational move" from solidarity to insurance (no matter how much he agrees on this move) "removes the challenge to foster sufficient social support for the welfare state".

   The most explicit doubts however are articulated in the comment by Philippe Van Parijs who writes that "it cannot be asserted that 'the issue of 'fairness' under regionalisation is entirely contained in the static definition of the initial conditions". Van Parijs also explicitly brings to the fore that the framework presented in the Drèze-paper will not relieve us of making value judgements (something none of the commentators, and certainly Jacques Drèze, would deny). And the most obvious judgement to be made here is "the scale at which [the criterion of distributive justice] is supposed to operate". Do we give a fundamental ethical status to states and local communities, leading to the formulation of principles of distributive justice "between peoples"? Or do we take the cosmopolitan perspective that in today's world we live in a global community of world citizens in which states or local communities only have an instrumental role to play, i.e. to implement principles of justice which bear on the world community of all people in the world? For me as a moderator it was surprising to note that it was not until I received Philippe Van Parijs' comment that this question about "Who is my people?" (see Dewachter, 1994) came to the fore. The more because in the whole exchange of ideas nobody paid attention to the distinction, of such practical political importance in Belgium, between 'Region' and 'Community'. To be sure, a distinction which might be of crucial importance to the implemention of the two-tiered approach (and in fact implicitly hinted at by Van Parijs when referring to the peculiar role played by Brussels Capital (one Region, but how many communities?).

4. Finally, not only Jacques Drèze himself, but also all discussants emphasize the need to give empirical content to the proposed framework and to the many questions it induces. Most obvious is the empirical question to disentangle insurance and redistributive components in even the current tax and transfer system. Even after years of advocating this conceptually neat and attractive distinction, we only have sparse information about the relative magnitude of both components. Some of the discussants (Jean Hindriks, Pierre Pestieau) suggest that the current tax and transfer system is dominated by redistributive aspects, and that insurance only plays a lesser role. Which does not tell us anything of course about empirical values of interregional transfers that would follow from future risk sharing between regions. For that we would need to estimate the expected path of growth in real regional GDP's per capita, and need to have information on risk aversions. But also the question how important interregional externalities and economies of scale are, is ultimately an empirical one. And no matter how important it is to point at the theoretical possibility of moral hazard at the level of regional public

policy, how prone these policy makers are to the incentives produced by the insurance scheme, has – to best of our knowledge – not been answered empirically in the Belgian context.

Although all of the commentators are eagerly awaiting answers on these questions, and plead in favour of empirical research, it is comforting for the Re-Bel initiative that some of them, although fully aware of the "many unknowns", realize that "Impatient policy-makers and citizens usually hate the conclusion that there is an interesting research agenda for academics. They want to move forward" (Schokkaert), and they explicitly speak out clearly on a possible proposal to regionalize social security.

Our own Appendix to this E-book is certainly *not* meant to be an empirical implementation of a forward looking mutual insurance of risks affecting regional incomes per capita in the long run. It could at most be considered as a modest "kickoff" or "warming-up" for this kind of research, simply by illustrating how uninformative the current framing of the discussion about "interregional transfers" is, since they are a mere "by-product of interpersonal redistribution" (Erik Schokkaert), which itself is again a combination of insurance and redistribution.

The structure of the rest of this E-book is as follows. We start with the lead piece by Jacques Drèze. We then have put the different comments in alphabetical order of the name of the discussant. Then follows a Reply (and clarification) of Jacques Drèze on some of the points raised by the discussants. We close the book with our own illustrative calculations of transfers in the current Belgian tax and transfer system. I hope the reader will enjoy this stimulating exchange of ideas as much as the moderator did.

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Lead Piece

by Jacques H. Drèze

On the interaction between subsidiarity and interpersonal solidarity

Jacques H. Drèze, CORE

1. *Subsidiarity versus solidarity*

Belgium faces today the challenge of re-thinking the extent and contents of **regionalisation.**

Many authoritative voices have been heard over the recent past, stressing the potential benefits of "**subsidiarity**" achievable through more decentralisation, that is through transfers to the regional level of responsibilities or programs currently vested at the federal level. A frequently heard illustration is: active employment policies should be targeted towards the low-skilled in Wallonie, towards older workers in Vlaanderen. More regionalisation should permit:

- adapting *policies*, region by region, to local situations and objectives;
- providing better focused *incentives* to local agents and decision-makers.

At the same time, equally authoritative voices have stressed the desirability of preserving "**interpersonal solidarity**" among all Belgians. That goal is presented as deserving precedence over the pursuit of more efficiency through decentralisation. To illustrate: the goal is alleged to rule out regionalisation of social security.

Whereas subsidiarity pleads for confederalism, solidarity pleads for stronger federal ties. There thus arises a **potential conflict** between the two preoccupations.

I do not wish to express personal views on the validity of specific claims, like those listed for illustration. Such claims must be **documented empirically**, case by case. I have not engaged in such empirical research.

Instead, I wish to discuss the **interaction between subsidiarity and solidarity**, relying in particular on the economic theory of **efficient risk-sharing**, an area where I feel more at home. This approach permits some clarification of the conditions under which the conflict can be tempered.

2. *Static versus dynamic solidarity*

In everyday language, solidarity means "mutual assistance". I shall distinguish a **static** dimension of solidarity and a **dynamic** dimension.

To illustrate, **imagine** that **public pensions** were regionalised in Belgium, with preservation of the individual entitlements corresponding to past contributions. This would entail a transfer, from the federal to the regional level, of responsibility for the public pensions of beneficiaries currently retired, and for the share of the public pensions of future beneficiaries corresponding to past contributions.[1] Since that responsibility is currently vested with the

[1] I note in passing that, by analogy with international practice, such responsibility should be inherited by the region of employment, not of residence; also, the former is ambiguous when a person works in a region different from that where the firm's headquarters are located. That distinction helps explain why no *stock* estimates of regional pension entitlements are currently available in Belgium. Regionalisation would call for a *definition* of regional responsibilities. Such a definition should include provisions for dealing with future mobility.

federal authorities, its transfer should be accompanied by a transfer of resources from the federal to the regional authorities, in an amount equal to the present value of the responsibilities inherited by the regions.[2] From then on, each region defines freely the regime of public pensions applicable within its jurisdiction, collects the associated contributions, and meets the resulting obligations. Individual pensions evolve as the sum of entitlements linked to prior contributions plus entitlements under the new regional regime.

The evolution over time of the net financial balance of the regime in a given region will reflect the ratio of contributions to benefits, as influenced by various factors: the overall economic activity, the average working life and life after retirement, a.s.o. The evolution of these factors is subject to uncertainty. Dynamic solidarity concerns the mutualisation of the risks associated with that evolution, which needs not be identical in different regions.

There is thus a clear distinction here between static solidarity – the level of initial transfers – and dynamic solidarity – the mutualisation of future risks.

I shall not be concerned here with "static" aspects. Clearly, decentralization calls for a suitable definition of initial conditions, "static solidarity" provides the natural criterion for defining these,[3] and no specific issue of reconciling subsidiarity with solidarity arises. The situation is different with respect to dynamic solidarity, which concerns specific arrangements regarding **future risk-sharing. That is the level at which an issue of interaction between subsidiarity and solidarity arises.**

It is crucial to recognise at once that organising future risk-sharing is a matter of **efficiency, not redistribution.** The issue of "fairness" under regionalisation is entirely contained in the static definition of initial conditions. If the future were devoid of uncertainties, its path would be defined fully by the initial conditions. Under uncertainty (the realistic case), dynamic solidarity invites arrangements that cope efficiently with future risks, neither more nor less. If future transfers between regions are organised, they should aim for **ex ante efficient sharing of future risks.** That is why, and where, an economic theory of efficient risk-sharing comes into play.

3. *Efficient sharing of economic risks*

Efficient sharing of economic risks[4] among the members of a given population calls for two conditions:

(3.a) **all** the risks borne by **all** the members of the population should be merged into a single pool, then shared among **all** these members – so that nobody bears any risk that is not shared with everybody else ("**mutuality principle**");

(3.b) the pooled risks should be shared among **all** individual members of the population on the basis of their respective risk-tolerances ("**sensitivity principle**").[5]

"Risk tolerance" is a technical economic concept; it is the reciprocal of "risk-aversion", as measured by the maximum insurance premium a person would be willing to pay for covering a given risk. Risk aversion is subjective and personal, but widely held to be diminishing with wealth. Efficient sharing thus typically concentrates risks on wealthier citizens; but **this is not redistributive ex ante** –and may result in either more, or less inequality ex post (the balance is indeterminate).

2 That present value is well-defined on re-insurance markets.
3 The natural starting point here is the equality of rights and duties of all citizens prior to decentralization; see Drèze (1993) for an illustration.
4 That is, risks susceptible of a monetary measure (which includes risks to life!).
See Drèze (2000, section 2) for explicitation. In general, bearing risks entails a risk premium, which appears as a fixed term in the final allocation.

4. *Tiered implementation*

The principles of efficient risk-sharing are amenable to **tiered implementation**. Consider a population spread over the N regions of a given country. An efficient sharing of the economic risks borne by the population of the country could be implemented in two stages:

(4.a) each region pools the risks of its own members;

(4.b) the **global** risks of the N regions are then pooled, and **shared among the regions on the basis of their aggregate risk tolerances**;[6]

(4.c) **each region organises the sharing among its own members** of the region's share of aggregate country risks, as emerging from (4.b).[7]

This very useful property must be understood properly. It states that *any efficient* sharing of the country risks *can be* implemented in *either one or two stages*, with the same final outcome for every citizen! When *efficient* sharing is defined *uniquely* (e.g. under constant individual risk tolerances), the final outcome is indeed *always the same* under one or two stages. When there exist *multiple efficient allocations* (more general forms of risk tolerance), there is scope for *different outcomes* whenever different regions select different members of the efficient set[8]. This could result in different degrees of inequality across regions, reflecting different redistributive policies. Such an outcome may be regarded by some as a breach of interpersonal solidarity, by others as a natural implication of subsidiarity. (I side with the latter, while recognising the challenging nature of the issue.)

Under a two-tier arrangement, it would be natural to refer to step (4.b) as implementing "interregional solidarity"; and to step (4.c) as implementing "interpersonal solidarity".[9] Under such an arrangement, **no conflict arises between subsidiarity and solidarity** – at the current level of abstraction.

But implementing (4.a)-(4.c) is easier said than done, as illustrated next with reference to the current situation in the EU. Under a more realistic specification, conflicts between subsidiarity and solidarity reappear, and will be discussed further below (see section 7.).

5. *A glimpse at the current record*

How close are European economies to efficient risk-sharing today? Four comments are in order.

(5.a) In the area of interpersonal solidarity, the EU is basically advocating the subsidiarity principle and the "open method of cooperation", without attempting to pool risks among member nations. Indeed, the EU total budget is voluntarily restricted to some 1.3% of incomes (national, on average, or aggregate). Thus de la Fuente et al. (2008, p. 4) estimate that "for a representative European citizen, the net effect of the EU budget is equivalent to a flat tax of 1.75% on the difference between his income and the EU average". **Step (4.b) above is altogether missing, in the EU!** And progress on that front remains hampered by the unanimity rule… In contrast, the extent of redistribution across member states has been estimated to 20% in the US and 40% in Canada.

6 The aggregate risk-tolerance of a group is the sum of individual risk-tolerances.

7 This tiered implementation of risk-sharing corresponds to the wide-spread practice of *reinsurance* whereby insurance companies redistribute their respective *aggregate risks.*

8 That selection allows for redistributive judgments.

9 Note also that tiered arrangements can be implemented over more than two tiers.

(**5.b**) Within member nations, there are substantial programs of mutual insurance, coming under the heading of "**social security**" (unemployment insurance, health insurance, pensions,..), or resulting from **progressive taxation of family incomes.** These separate programs come together under the national budgets, and this allows for some further pooling. Thus, in Belgium, there are national contributions to the separate branches of social security, beyond the "insurance premia" paid by affiliates (employers and employees); these contributions amount to about one third of the aggregate resources of our social security; see Fasquelle et al. (2008).[10]

(**5.c**) Within EU member nations, social security and income taxation result in **interregional net transfers,** to the effect that the ratio of average disposable income to average primary income varies across regions. In Belgium, the ratios are 0,98 for Flanders, 1,01 for Brussels and 1,05 for Wallonia. Extreme values of such ratios are 0,97 vs 1,16 for the old and new Länders of Germany, 0,93 vs 1,05 for Dutch regions, 0,93 vs 1,05 for British regions; see Table 11.3 in Meunier et al. (2007).

(**5.d**) **Capital markets** do not contribute much to risk-sharing, because assets traded on financial markets represent (capitalise) a small share of national incomes: 7% in the US, less elsewhere. There are hardly any assets representative of aggregate incomes in a country or set of countries.

6. *Sharing regional risks: scope and time perspective*

In the framework of a Belgian constitutional reform, there is scope for **preserving solidarity through mutual sharing of global regional risks,** as per (**4.b**) above, while **allowing subsidiarity** to implement (**4.c**). In this spirit, the Belgian reform could also be seen as an opportunity to **show Europe the way towards more efficient risk-sharing at the EU level:** retain the advantages of subsidiarity, but introduce more global risk-sharing across member states!

The feature of **sharing global regional risks** implies that what is at stake, ultimately, is **interregional solidarity, not interpersonal solidarity.** This is an important clarification of terminology, relative to the current debate.

What is to be understood here by "global regional risks"? The natural answer is: risks affecting **real regional income per capita**. Even for adjoining regions, there is scope for idiosyncratic risks: the industrial specialisations differ between Flanders, Brussels and Wallony; so do the age and skill distributions in the population; natural catastrophies may hit one region but not the others; economic policies may evolve more efficiently in some region(s); a.s.o. All these risks have *global* relevance. To the extent that future contingencies remain both idiosyncratic and uncertain, there is scope for interregional risk sharing.

It is important to realise that benefits from such risk sharing accrue **in the long run.** Let me explain briefly. What is at stake is risk-sharing, not redistribution. Now, empirical estimations, in particular by Lucas (1987) and Gollier (2001), suggest that the risks due to short-run variability in growth rates are quite small; in contrast, the risks resulting from medium-to-long-run trends, as estimated by Forni and Reichlin (1999) for instance, are substantial. The reason for the contrast is straightforward: short-run risks can be largely absorbed through *intertemporal smoothing*; permanent risks cannot! Thus, what really matters is **sharing the risks surrounding long-run trends.** And that is difficult, because it implies a **long-run commitment!** (In the case of Flanders and Wallonia, willingness to engage in long-run risk-sharing is open to doubt … no?)[11]

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[10] See also Hepp and von Hagen (2009) for a thorough exposition of the structure of transfers implemented in Germany before and after the 1999 unification.

[11] Whether or not both regions have benefited from sharing long-term risks along the history of Belgium since 1830 is controversial; see, e.g., Hannes (1995) vs Meunier et al. (2007).

The important conclusion here is that **a short-run arrangement is not worth the bother.** In absence of willingness to share long-run risks affecting regional incomes per capita, interregional solidarity is dead, and that is after all what many advocates of "interpersonal solidarity" are ultimately worried about.

7. *Two hurdles*

Regarding the specific merits and difficulties of implementing a two-tiered efficient sharing of long-run regional risks. Two issues stand out.

(7.**a**) The first issue concerns **public moral hazard.** Moral hazard arises, in the economic terminology, when insurance of a risk results in aggravation of the risk. In the field of social security, this danger is omnipresent *at the individual level*: unemployment benefits temper job search, overconsumption of medical care is a permanent threat, early retirement programs discourage labour force participation, a.s.o.. This danger at the *individual* level should not be affected by mutualisation of *aggregate* regional risks. But a more subtle danger lies in waiting, namely the danger of looser economic policies under interregional mutualisation; i.e., moral hazard *at the level of public policies*.

In a federal state, public moral hazard linked to regional policies[12] is open to *control* by federal authorities, whereby the hazard is tempered. The same opportunity does not exist *between* regions pursuing *independent* policies.

On the other hand, overall **incentives** towards efficient policies are apt to be enhanced by regionalisation, which brings the outcomes closer the decision makers.

Which of these two effects dominates is an open question, left to case-by-case empirical research!

(7.**b**) The second issue concerns **interregional externalities.** The public policies adopted in one country or region entail restrictions for the feasible sets of adjoining countries or regions, when individuals or firms or capital are geographically mobile. This feature is widely recognised at the European level. Thus, tax heavens limit the prospects for property income taxation elsewhere; low labour taxes in some countries entail a risk of social dumping all around; corporate or inheritance taxes in neighbouring areas limit the scope for domestic taxes; a.s.o. When policies are defined at the federal level, these effects are internalised, resulting in measures that either are uniform (no externalities) or take externalities into account. Coping with externalities is thus amenable to *direct control* under federalism

But uniformity entails the implicit cost of foregoing subsidiarity, and policies geared to externalities entail the direct costs of administrative complexity – as confirmed by the Belgian experience. **Contractual agreements** offer an alternative, potentially superior route for internalising externalities.

Which way the balance of these arguments lies is an open question, left to case-by-case empirical research.

8. *Implementing interregional risk-sharing*

(8.**a**) Any program of interregional risk-sharing would start with the **definition of global regional risks.** If two regions wish to pool their aggregate risks, they should first agree on their

[12] For instance, in Belgium, it is in the interest of regions to qualify beneficiaries of social aid (a regional outlay) for unemployment benefits (a federal outlay).

respective **expected paths of real regional income per capita.**[13] The two regions may start from different **levels** of income per capita; that is **immaterial** from the viewpoint of risk-sharing. What matters instead is the **uncertainties surrounding these expectations.** If region A grows faster *than expected*, whereas region B does not, then A should share with B an agreed share of the **difference** between realisation and expectation; and conversely if B grows faster than expected, whereas A does not. The relevant paths here are **long run paths,** for reasons explained under **6.** above.

It is thus important to assess carefully the reference, expected paths. On this, **agreement** is essential – even if not easy… Still, the long-run perspective is an advantage, in that respect. Thus, the expected long-run per capita growth rates of Flanders and Wallonia are probably comparable - say of the order of 2% par year, reflecting productivity growth. Short-run expectations may stand farther apart. And the long-run uncertainties are apt to be partly correlated, thus reducing both the gains from mutual insurance and the size of the transfers implementing it.

Regarding the sharing rule, the principle is to start from the respective (aggregate) risk-tolerances of the two regions, and to allocate the **differences** between realisations and expectations on the basis of these. (The transfers have zero expected value by definition, so unequal shares are immaterial.) Again, average risk-tolerances for Flanders en Wallonia are apt to prove reasonably comparable.

(**8.b**) A practical approach to sharing long-run risks might be to **exchange debt instruments** indexed on deviations from expectations of the growth rates of real regional income per capita. A very long-run would call for perpetuities. Debt instruments with a 20 or 30 years maturity would go a long way.

Because such instruments are uncommon, a precision is in order.[14] Consider an exchange of instruments between Flanders and Wallonia, meant to transfer from Flanders to Wallonia 1/3rd of the deviation from expectation (positive or negative) of aggregate Flemish disposable incomes against a transfer from Wallonia to Flanders of 2/3rd of the corresponding Walloon deviation. To that end, both regions issue debt instruments and donate them to the other region. In order to make the debt instruments freely negotiable, it should be the case that they entail *rights, and no obligations*, for the holders. To that end, the debt issued by each region should give right to a coupon equal to: (i) *the net difference* between the amount that region should collect and the amount it should deliver, *whenever that difference is positive*; (ii) *zero otherwise*. Accordingly, the instrument received by either region entails the same yield as if the two separate transfers had taken place. But that instrument has become negotiable. And this is essential to make default equivalent to reneging on the regional debt, a move with severe consequences that neither region will adopt. With that definition, it is also clear that both regions will wish to entrust the evaluation of the transfers to a reliable third party, an independent party that potential holders of the debt instruments will trust (like OECD?).

9. *Partial implementation*

Having recognised the demands of implementing long-run interregional solidarity, one wonders whether there is scope for organising a second-best form of dynamic solidarity **at the level of specific programs,** in particular social security programs.[15]

To illustrate, let me consider first the global social security system for salaried workers (SSSW), i.e. unemployment, health and pensions. Consider a regionalisation scheme under

[13] The precisions "real" and "per capita" are important, for obvious reasons.
[14] This paragraph was not present in the preliminary version of the present document, as circulated to the discussants. I apologise for the initial omission of an important precision.
[15] I could also mention schemes of *partial insurance* that have second-best merits under moral hazard. On that topic, I refer readers to Appendix A of Drèze (1993).

which an extreme form of confederalism leads to regionalise *all* federal means and responsibilities, *except* for SSSW. Only the latter remains a federal responsibility. It was noted under **5.b** above that, under current Belgian practice, two thirds of the social security resources come from contributions by employers and employees, and one third comes from other federal revenue. If that situation is expected to prevail in the future, the proposed scheme would call for one third of SSSW outlays to be covered by *regional contributions*. How should the respective contributions of the different regions be assessed?

It follows from the general principles outlined above that such assessment should implement efficient interregional risk-sharing! Thus, **the path outlined under 8. stands unchanged,** and one could just as well regionalise SSSW along with the rest. The only – significant – difference is that the **extent of interregional risk-sharing** would be reduced to the scope of SSSW, thus entailing less extensive transfers.

The same reasoning would apply if one wished to regionalise SSSW alone, while keeping the current federal structure unchanged. As stated above, the basic issue lies with **interregional, not individual solidarity.** These remarks suggest the following

Proposition: In order for any form of regionalisation entailing potential transfers of public resources to be ex ante efficient, it should be accompanied with some mutual insurance of the risks affecting real regional incomes per capita in the long run.

That is, the need for organised interregional risk-sharing pervades all forms of regionalisation – while preserving the compatibility of subsidiarity with solidarity. (Of course, that compatibility remains subject to coping with the hurdles mentioned under **7.** above, and to the possibility of organising a long-run commitment, as exemplified under **8.b.**)

10. ***In conclusion,*** let me stress the main points of this note.

Reconciling subsidiarity with solidarity:

- concerns efficient sharing of long-run uncertainties between regions, hence
- concerns interregional rather than interpersonal solidarity, and
- concerns risk-sharing, not redistribution; but
- requires a long-run commitment immune from reneging;
- can be implemented by combining extensive regionalisation of responsibilities with a form of mutual insurance of risks affecting real regional per capita incomes in the long run;
- raises an issue of public moral hazard:
- calls for coordination (along lines not discussed here) of regional programs, so as to internalise cross-regional externalities;
- could be implemented at the level of specific programs, which would still call for mutual insurance of aggregate regional risks;
- could show the way towards more efficient risk-sharing at the EU level.

These conclusions suggest that **extensive subsidiarity remains potentially compatible with extensive solidarity**. Of course, these conclusions should not be understood as recommending maximal regionalisation of responsibilities in the framework of Belgium's constitutional reform. **My purpose is simply to clarify some basic issues, not to voice recommendations** beyond the natural one of exploring further the many issues raised here!

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Comments

Redistribution versus risk-sharing in a federation: more than semantics?

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Almost all federations have systems of equalization transfers that redistribute among sub-national levels of government on the basis of some measure of fiscal capacity. Such equalization systems can be seen as devices for facilitating the decentralization of fiscal responsibilities to achieve the advantages of subsidiarity without sacrificing solidarity objectives. In many federations, equalizing transfers are a source of political tension, especially so in highly decentralized ones with significant disparities in fiscal capacity (like my home federation, Canada). This is mainly because equalization is considered to be a redistributive program. While recognizing that a risk-sharing function is served by equalization transfers, most public discourse treats the policy objective as mainly one of redistribution rather than risk-sharing.

Such political tension could be at least partly defused if the perception were changed so that the politicians, the public and the pundits all thought of equalization as being a device for achieving efficiency in risk-sharing rather than redistribution. Efficiency after all is a win-win situation, at least ex ante, rather than a zero-sum game like redistribution. The perspective offered by Jacques Drèze is therefore most welcome as a potential means of posing the argument of equalization in a way that might lead to general, if not unanimous, agreement.

That said, there are a number of factors that might detract from the view that equalization is essentially an efficiency-enhancing policy of interregional risk-sharing rather than a redistribution policy. They are as follows.

1. An efficient risk-sharing arrangement among regions would almost certainly take as a starting point unequal expected incomes among regions so that all regions gain in expected terms. This would seem to conflict with notions of social citizenship (and solidarity?) that characterize most nations and that require equal treatment of citizens independent of their region of residence.
2. Efficient risk-sharing schemes, as Jacques Drèze emphasizes, are long-run in nature. Indeed, one might expect that their time horizon is far in excess of the lifetime of citizens. In the shorter term, relative levels of well-being across regions are liable to be fairly stable, even if in the longer run expected per capita incomes could be close to identical. In these circumstances, it is not clear that equalization transfers can really be viewed as efficient risk-sharing schemes from the point of view of citizens, as opposed to being redistribution schemes.
3. As Jacques Drèze also emphasizes, efficient risk-sharing agreements require full commitment by the partner regions. It is inconceivable that such commitment will emerge from standard political processes. In at least some federations (e.g., Canada, Germany, South Africa), equalization commitments are enshrined in the constitution. These commitments are typically formulated in terms of redistribution, though one could give them a risk-sharing interpretation. Note, though, that constitutions implicitly treat all citizens as ex ante equal, so risk-sharing might be better thought of as social insurance (in the Harsanyi-Rawls sense) than insurance in the purely efficiency sense.
4. Finally, a minor observation concerns the interpretation of risk-sharing at the regional level, the so-called Stage (4b). In fact, equalization transfers among regions in practice do not attempt to equalize per capita incomes across regions. Rather, they equalize the ability of regions to provide public services, often by equalizing the ability to raise revenues. Such risk-sharing of private incomes as exists is done through inter-personal redistribution.

These caveats aside, viewing interregional transfers from the perspective of risk-sharing undoubtedly takes some of the edge off the kinds of disputes that arise in federations where such transfers are thought of as devices for redistribution. The extent to which interregional transfers in fact assume a risk-sharing rather than redistribution function probably depends upon the regional nature of the federation itself. In the case of geographically large federations such as Australia, Canada and Russia, it seems to be the case that some regions are more or less permanently better off than others so that equalization is more redistributive than risk-sharing. In smaller, geographically homogeneous federations like Belgium and Germany, there is perhaps more scope for pure luck in determining the relative fortunes of regions over time. In this case, the risk-sharing perspective makes a lot of sense.

Dynamic interregional risk-sharing: The challenges of the long-term perspective

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The prosperity of different countries and regions of the world is always extremely difficult to predict. In the early fifteen century, China was by far above all other countries in terms of scientific knowledge, economic development and welfare. Along the east African coast, Chinese flotillas far surpassed in grandeur the small Portuguese fleets that came later. In 1405, one of these Chinese fleets consisted in 317 vessels and carried 28,000 men. At that time, who could have predicted that 5 centuries later, China would be one of the poorest countries in the world, before a bright and impressive recovery, as witnessed these days? Maddison (1991)'s long-term time series on country-specific GDPs per capita provides fascinating illustrations of the often diverging sakes of different nations and their citizens. Small differences in the economic growth rates, if maintained in the long run, lead to huge differences in welfare.

The uncertainty faced by a community is nothing else than the sum of individual risks faced by its members. Citizenship is one of the main determinants of individual and family destiny. The mirage of the "American uncle" is reminiscent of the importance of joining the good "band" in the long run. Individual risks are huge over the lifetime. Because of risk aversion, they dramatically reduce welfare in the absence of solidarity, and they inhibit risk taking, innovation, and growth. One of the strengths of human kind has been to organize solidarity and risk sharing, first informally within families and rural communities, and more recently through myriad of market mechanisms and public institutions. These "insurance" systems have a huge positive impact on our citizens' well-being. As is well-known, markets are particularly inefficient to share risks associated to human capital, in particular due to asymmetric information (mostly moral hazard) and the difficulty for workers to commit. This is why governments in developed countries implemented a social security system, which induces them to play a key role to organize solidarity at the national level. Ex ante, the ability of States to organize compulsory transfers among their citizens has a deep beneficial impact on risk sharing efficiency, but is limited to the boundaries of these States.

Is the allocation of risks in our Society efficient? Jacques Drèze convincingly claims that we are far from such an allocation, and that the collapse of Belgium as a country could have a dramatic adverse effect if it is not compensated by a clever risk-sharing contract between Flanders and Wallonia. These two communities are affected by asymmetric macroeconomic shocks which may imply a large divergence in their destiny. These heterogeneous shocks have some predictable and persistent components in the short and medium run, but they have a more radical uncertain component for the distant future. This is why the regionalisation of the redistribution tools (social security, taxation,...) basically eliminates the interregional risk sharing mechanisms if it is not accompanied by a strong long-term commitment of the regions to put in place and maintain a new risk-sharing device among them.

Drèze's proposal is based on pure ex ante efficiency considerations, not on ex post redistributive arguments. This may be hard to understand for short-sighted analysts. For example, Drèze does not claim that because Flanders currently enjoys more prosperity than Wallonia, the first should compensate the other by a huge interregional subsidy. There may be a redistributive argument in favour of doing that, but this is clearly a different topic not covered by Drèze. Realized risks cannot be insured! Rather, he proposes that, considering the current heterogeneous economic environment of the two regions, and given the potential growth expectations within each region and the long term uncertainty surrounding them, one establishes a new constitutional amendment that would commit the two parties to financially compensate the one whose observed relative growth falls below its expectation. Thus, the potentially diminishing expectation in one region is not an efficiency argument for the other one to compensate it in the future; only a redistributive argument may justify this. Rather, it is risk-sharing efficient that the later compensates the former only if its relative economic performance becomes even worse than this expectation. If wealthier regions are often suspicious about this scheme, this is because of the classical mixing up of redistributive and risk sharing mechanisms. Under Drèze's proposal, all regions participating to the scheme are made better off ex ante!

In spite of the huge gains of this proposed constitutional contract, its prospect of success is bleak.[16] Let me review the list of the challenges raised by this proposal.

First and above all, there is a huge commitment problem. Shocks on growth have a strong persistent component. One needs a particularly strong central authority, as in the United States or Germany to oppose opportunistic regional behaviours in the states of nature in which one region is in a situation to contribute a lot to the prosperity of the other regions, and is likely to do so for a long period of time in the future. It is a matter of fact that we are not anymore in such a situation in Belgium. Therefore, the envisioned interregional risk sharing scheme needs to be constrained by a self-enforcing condition: in all future states of nature, all parties must prefer to fulfil their commitment rather than to secede, thereby giving up the benefits of risk sharing in the future. Since Coate and Ravaillon (1993), there has been an important literature on this risk sharing problem in the absence of commitment.[17] Of course, this risk of secession in the future reduces the social gains of the scheme, but it makes it more realistic. The renegotiation-proof best risk sharing arrangement has a memory, and it resets the benchmark on which future conditional transfers are determined when one of the participating region is on the verge of seceding.

Financial innovation can be instrumental in providing tools to alleviate the commitment problem. Drèze proposes that the regions emit long term debt contracts indexed on the regional GDP per capita. Conditional to each region allocating their risks efficiently within their own boundaries, this is indeed the perfect instrument to shape an efficient risk sharing arrangement across the different regions. By exchanging these regional debt contracts at the desirable level, all citizens will benefit from the increased prosperity of the wining regions – and they will bear their share of the diminishing prosperity of the others – independent of where they live. The initial prices of these assets may be heterogeneous to reflect expected regional growth differentials. This excellent idea should of course not be limited to Belgium, and in fact has been promoted by the author in the context of establishing a new deal between developing and developed countries. Apparently, this financial innovation has not been put in place before, except in a few countries, in which the success was limited. There is a "lemon" problem associated to emitting bonds indexed on GDP.[18] Only countries with the lowest expectations on growth will be willing to emit them, which implies that the market for such asset breaks down. In the current equilibrium, any country or region which would emit such bond would signal its bad type. Only a coordinated move by several countries or regions could defy these equilibrium beliefs on financial markets.

Moral hazard is a standard argument against risk sharing. Different regions can resist to the idea to share risk among them if they believe that this will reduce the incentive of each of them to promote growth. Fighting moral hazard requires to limit either the degree of risk

[16] It's a trademark of Jacques Drèze to endorse visionary challenges. When I was his graduate student at CORE in the mid eighties, he was one of the leading scientific proponents of a single currency in Europe, at a time when such an idea was not really taken seriously. He also invested a lot of time and energy in favour of establishing stronger solidarity arrangements with developing countries.

[17] See Laczo (2009) for a review of this literature.

[18] I am indebted to Jacques Delpla for mentioning this point.

sharing, or the degree of each member's freedom to choose its destiny. In other words, it is a complex matter to disentangle risk sharing from subsidiarity. However, recent experimental studies at the frontier between economics and psychology demonstrate that intrinsic motivations may inhibit moral hazard. Whether or not communities can develop such intrinsic incentives remains an open question at this stage.

Finally, we must recognize that beliefs about the various regions' potential to grow are heterogeneous, in particular for the distant future. It implies that the fairness of a given allocation of risk is subject to multiple evaluations. When risks are shared, each region has a strategic interest ex ante to maximize its reported growth potential in order to benefit from the insurance coverage when such benchmark growth fails to materialize. It is therefore crucial to rely on a really independent institution to establish a consensus growth scenario for the different regions participating to the mutual pool.

Some of our colleagues will claim that this is an utopian project, and that the two communities in Belgium are too far apart to establish such an efficient risk-sharing scheme. Sharing risk in the absence of a powerful supervisor requires reciprocal esteem and trust, clearly two scarce resources in Belgium. It is a noble mission for economists to explain to the politicians and to the citizens what should be done, and what would be lost if the proposed solution would not be implemented.

I fully endorse Jacques Drèze's proposal.

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Mutual insurance without trust

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The article by professor Jacques Drèze raises a crucial point about the tension between subsidiarity and solidarity. With short horizon, there is no chance for reconciling the two principles. This is static solidarity with redistribution and no insurance opportunities. But when there is a future to consider, with economic uncertainties, there is room for efficient future risk-sharing. I would like to make two comments on this claim. First future risk-sharing to be efficiently organized required minimal commitment. When we allow for risk-sharing with imperfect commitment, the conflict between subsidiarity and solidarity comes back. Second, separating redistribution and insurance is not so easily done in practice. The issue is where to draw the line between the past and the future when time is passing. I will now elaborate briefly on these two points.

Regional insurance and Commitment

Inter-regional insurance is fundamentally about sharing risk among a group of regions so that no region bears an undue amount of risk. Because of this, insurance can arise even when all parties are risk averse. What is necessary for this to happen is that the risks the parties bear are, to some degree, independent of each other. That is, when one region suffers a loss , there are other regions (or group of regions) that do not suffer a loss. While such independence is usually true of almost all individual risks for which standard forms of insurance exist (fires, car accidents, sicknesses ...) it is less obvious at the regional level. There are some fundamental principles in mutual insurance. First, risk-sharing is more effective the broader the basis on which risks are pooled. This is a consequence of Borch's theorem on mutual insurance. Second, it is more advantageous for any region to engage in mutual insurance with other regions when risks are negatively correlated across regions. Third, there must be minimal symmetry across regions. The reason is that with asymmetric regional distribution of risks, some regions will systematically and persistently subsidize others. The distributional considerations will then dominate insurance aspects. Fourth, risk-sharing arrangements require reciprocal behaviour: a region with a favourable shock accepts to help out other regions if it can reasonably expect that those regions will in turn help it out in bad circumstances. With voluntary insurance, participants are free to opt out at any time and so we must also consider the possibility of risk sharing agreement without commitment.

Without commitment, complete risk sharing is not guaranteed. We must take into account the possibility that the region receiving the gain may refuse to transfer some of the gain to the other region. Risk-sharing agreement without commitment must be "self-enforcing" in the sense that no region has an incentive to defect unilaterally from the agreement. To be self-enforcing, the risk-sharing arrangement must be such that the expected net benefits from participating is at any time larger than the one time gain from defection (by not making the transfer when called upon). If full insurance is not possible, it is still possible to design partial insurance by limiting transfers when the participation constraint is binding.

We can draw several implications from the theory of risk-sharing without commitment. First, the time horizon will influence the amount of mutual insurance that is sustainable. Indeed the value attached to continued insurance depends on the discount rate (reflecting the time horizon). At one extreme of extremely short horizon, the value of future insurance is zero and regions always defect. No insurance is possible. At the other extreme of very long horizon, the value of future insurance is sufficiently high that full insurance is possible. And by a continuity argument, for intermediate time horizon, values, only limited insurance is possible. Therefore the expected time horizon limits the amount of risk sharing.

The second implication is that the level of risk sharing that regions can achieve increases with risk aversion. The reason is that regions put more weight on the gain from long-term insurance against the short-term gain from defecting.

A third implication concerns the effect of regional inequality. Intuition would suggest that mutual insurance is more likely if regions are ex-ante identical and that regional inequality limits the scope for insurance. But this is not true. The reason is that risk-sharing redistributes ex-post from the region with a positive shock to the other region, but it does not redistribute ex-ante from the rich to the poor regions. More surprisingly, it is even possible that increased inequality, while maintaining constant the aggregate income and the variance of income, would improve insurance.

Regional Insurance or Redistribution?

In practice inter-regional insurance is organized in a federation through federal taxes and transfers. The effect of such a federal tax system is to redistribute income from high- to low-income regions. By pooling income risk across the regions, the federal tax system provides insurance against region-specific shocks. However to the extent that there is ex-ante income inequality between regions, federal taxes also provide ex-ante regional redistribution. We ignore the stabilizing effect of federal taxation which refers to the possibility of smoothing shocks over time (between bad years and good years). The insurance motive for the federal tax system is explicitly recognized in many countries. For instance in the UK part of the tax system is actually called "National Insurance". To appreciate the amount of insurance federal taxes can provide it is necessary to disentangle redistribution from insurance components. Redistribution acts on the initial income distribution, while insurance responds to income shocks (either permanent or temporary).

Assume that regional income at any time is subject to permanent shock (with long lasting effect) and temporary shock. Both shocks are mean zero and add up to the initial regional income distribution. Thus regional income deviates from initial income distribution according to the temporary and permanent shocks. Now suppose the federal tax system taxes all regions' incomes at the same rate and redistributes uniformly total tax revenue to all regions. It follows that region at every time pays taxes proportional to regional income and receives transfers from the federation based on the average tax payment. The income change can be decomposed into an insurance part (smoothing shocks) and a redistribution part (based on the initial income inequality). Using this decomposition, it is interesting to measure the extent of insurance provided by federal taxation in practice. Empirical studies for the US federal tax system clearly suggest the presence of intra-national insurance. Though there is disagreement about the exact magnitude of the insurance, all studies find that the redistribution effect largely dominates the insurance effect. They also find that insurance is rather modest in the sense that it cannot smooth more than 10 cents on a dollar change in state income caused by asymmetric shocks.[19] As far as I know, there is no such empirical studies for Belgium.

[19] See Sorensen B. and Yosha O. (1997), Federal insurance of US states: an empirical investigation. In Razin A. and Sadka E. (eds), *The Economics of Globalization*, Cambridge University Press, pp. 156-72.

The torn curtain of ignorance

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My understanding of Jacques Drèze (2009)'s paper is that redistribution in a Federation could be viewed as a mechanism of risk-sharing. This view is interesting for two reasons. First, the idea that there is an insurance device in federal institutions is too often forgotten. Second, it would be nice to see that those who want to secede from a federation because they feel that they have been for too long net donors could be convinced that one day the direction of transfers will change like in any insurance.

I however have two reservations towards this view. First I think that only a fraction of what is redistributed across regions in a federation such as Belgium pertains to risk-sharing. Second, even if all redistribution could be viewed as pertaining to risk-sharing, I am afraid that the impatience (a high discount rate) of current donors could prevent them from waiting for (or even conceiving) a fortune reversal and thus lead them to reject the current rules of the redistributive game.

To illustrate my point, I would like to make a comparison with the issue of optimal income taxation and more generally of redistribution across individuals. In designing an optimal tax schedule à la Mirrlees one generally uses a utilitarian or a Rawlsian objective. This is justified on the basis of a choice made behind the veil of ignorance, at a sort of constitutional stage. Rawls (1971) proposed a hypothetical thought-experiment on which he based his view of redistribution. He called this concept the original position and the veil of ignorance. His hypothetical original position is that everybody starts out not knowing their eventual position and status in society. Nobody knows how rich they will be, how smart, or what opportunities might prevail. From this original position, Rawls then introduced his veil of ignorance behind which everybody must decide on the principles and rules that will guide human action once the veil is lifted. As an analogy, one can think of an individual cutting and sharing a cake. He is required to select a cut piece only after all others have selected their piece. The inferred solution is the cutter will cut all pieces equally to ensure an equitable piece.

Rawls' approach or that of Harsanyi (1953) would be convincing as providing a *politically sustainable* foundation for redistribution if we were sure that there was perfect social mobility and equality of opportunities towards life time uninsurable risks, especially those that are revealed at birth. Persons may indeed be born with a disadvantage relative to others: they may be prone to serious handicaps or illnesses. Unfortunately individuals are becoming increasingly conscious that there is no such a thing as a veil of ignorance.[20] The chances of success for any individual and his descendants vary quite a lot. The prospect of genetic tests reinforces this view that even in a long run, dynastic, opportunities of success and failure are far from being equally distributed.
In that respect it would be interesting to distinguish in interpersonal redistribution what could be viewed as based on risk-sharing and what is due to other considerations such as solidarity, altruism,…In the same line, one sometime makes a distinction between redistributive transfers that concern consumption smoothing within everyone's lifetime and properly redistributive transfers[21]. The idea being that the first category that allegedly amounts to 2/3 of all transfers could be managed trough non distortionary notional accounts.

[20] See Bukszar and Knetsch (1997)
[21] Bovenberg and Sörensen (2004)

The limits of the veil of ignorance approach explain why one tries to find other foundations to the redistributive role of the government: ethical values, altruism, political economy or recently evolutionary biology (see Dixit, 2009).

To conclude and coming back to risk-taking in a federation, I am not sure that the current observation that longevity of the Walloons is two years lower than the Flemish one making their pension bill lighter than when both regions had the same life expectancy and the prospect that the same evolution could occur in the areas of employment, health and productivity are arguments that will stop those who want to dismantle the current interregional solidarity mechanisms.

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Trust and social insurance

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Jacques Drèze offers an original perspective on the interaction between subsidiarity and interpersonal solidarity. First, once we understand the importance of risk-sharing, many welfare state institutions that at first sight look purely redistributive ex post, are better seen as the reflection of an insurance contract, that is efficient ex ante. The welfare state is largely a matter of long run self-interest. Second, from an efficiency point of view, the wealth base over which risks are shared should be as large as possible. In principle, risks should be pooled and shared worldwide and over the infinite future. Decentralization remains possible through the tiered implementation of the principles of efficient risk sharing. Such tiered implementation implies (and this is Drèze's final proposition) that, in order for any form of regionalisation entailing potential transfers of public resources to be ex ante efficient, it should be accompanied with some mutual insurance of the risks affecting real regional incomes per capita in the long run. I agree.

Of course, there remains the question when and why it would be preferable to move to tiered implementation. In a first-best setting, tiered implementation (let us call it "decentralized financing") does not do better than the one-stage ("federal") approach. In a second best-setting the decentralized financing approach may do better, as it would permit to adapt policies, region by region, to local institutions and objectives, and to provide better focused incentives to local agents and decision-makers. However, it also raises specific problems and whether it actually does better is an open question, left to case-by-case empirical research. In this respect, Drèze mentions two important issues. First, with regions pursuing independent policies there may be a problem of moral hazard at the level of the public authorities. Why would a government take hard measures to stimulate real income growth if other regions will come to the rescue if things go wrong? Second, with mobile labour and capital the public policies adopted in one region will restrict the feasible sets of the other regions.

I would add two other issues to be investigated. Even if we agree (I think that everybody does), that some decentralization is useful or even necessary, it is not obvious that the relevant tiers to be considered should always be the regions and the federation respectively. The Belgian system of health insurance offers a good example: if we want to give more regulatory power to the sickness funds (a policy direction I would strongly advocate), we are faced with the issue that these sickness funds are organized beyond the regional boundaries. Second, in some cases it is possible to create room for separate policies and to introduce incentives that are more adequate without breaking the federal financing structure. This point is well illustrated by Bruno Van der Linden (2008)'s reflections on labour market policies. Like Jacques Drèze, I do not want to submit these examples as specific policy recommendations. What I suggest is that considerations like these should be taken up in the case-by-case empirical research that he is advocating.

I am more concerned about a broader (possibly non-economic) issue. While I fully agree that the interpretational move from "solidarity" to "insurance" is of essential importance, it does not remove the challenge of fostering sufficient social support for the welfare state. To set up a system of social insurance in a second-best world, trust is needed. This is true both within a one-stage and within a tiered implementation approach. People have to be confident that there will be sufficiently strong institutions to solve the commitment problem and to fight moral hazard. Moreover, perhaps even more fundamentally, they need to agree about what is moral hazard. While this may seem straightforward from the point of view of economic theory, it is much less straightforward in specific policy applications and in the eyes of the public. The examples abound. Opinions differ about whether poverty is due to circumstances beyond individual control, or whether it is due to moral hazard and laziness (Fong, Bowles and Gintis, 2006). Opinions differ about what degree of job search should be expected from the long term-unemployed. Opinions widely differ about what is moral hazard in health care, in a situation where even the medical professionals do not always (or almost never) agree about what is adequate care and what is "overconsumption" in specific cases. My point is not that these questions cannot be answered; my point is that setting up a social insurance system requires a degree of shared understanding of these issues by the citizens.

Building up such a shared understanding will most probably not be made easier by moving into the direction of tiered implementation. Let us look at the facts. As emphasized by Drèze, in the world today there are social insurance (and redistributive) systems within nation states, but at the same time the sharing of global risks among states is altogether missing, even in the EU. Why is this the case, if we know that it would be efficient to pool and share risks worldwide and over the infinite future? The answer to this question is multi-faceted, but I suggest that part of the explanation lies in the difficulty of creating a shared understanding across national boundaries. Even in an insurance setting, it is necessary that people have the feeling to participate in one overall community confronted with a shared fate. After all, some nationalistic groups would hold that a restricted definition of what is the "relevant" community is not only unavoidable, but even desirable: if they were familiar with Drèze's argumentation, they certainly would accept a loss of "long term insurance efficiency" to safeguard their own (narrowly defined) national identity.

Back to Belgium. In the context of rethinking Belgium's foundations, we should not forget that, contrary to the EU (or the world), Belgium now has a federal financing structure in place. Moving in the direction of tiered implementation means breaking up (or at least, strongly reforming) the existing federal system. Incentive problems obviously make the present institutions far from perfect, but would the move to (an also imperfect) tiered implementation system keep us at the same overall level of insurance? I have my doubts.

The institutional reform advocated (or, better, described) by Drèze is only possible with a strong degree of social support by the population (or by the populations in all the regions). At this stage, Belgians at both sides of the linguistic border generally have a large degree of trust in the existing social security system and in the welfare state, institutions that are still organized at the federal level. At the same time, at least at the Flemish side, there is a deep lack of confidence in the French-speaking politicians. (I do no want to venture any hypothesis about the level of trust in Flemish politicians among French-speaking Belgians, but I have the strong impression that the situation is symmetric). In my view, the political debate is coloured more by concern about moral hazard at the level of public policies than by concern about the inefficiencies within the existing social security system. At the same time, strong (and credible) institutions to tackle the moral hazard and the commitment problems would be needed. While clever financial innovations may help a lot, the electorate will not necessarily understand them – and, if not, where are we going to find the politicians who will defend them? In the short run, i.e. in the present political context, I wonder what would be the outcome of negotiations on a long-run agreement between the regions.

I am afraid that the problem would only get worse in the long run. The present federal structure of social insurance leads to transparent transfers from the healthy to the sick, the rich to the poor, the young to the elderly, whatever the language they speak. Transfers between regions are a by-product. On the contrary, thinking explicitly about interregional solidarity, focuses attention on regional identities. Would this help in keeping the interregional solidarity intact? Note that in the long run, causality probably goes in both directions. Feelings of a shared fate are not only necessary for creating strong social insurance institutions, they are also influenced by the existing institutions. The remaining feelings of a common understanding in Belgium are certainly influenced by the mere fact that we now have federal social insurance institutions in place. Breaking up these institutions would bring us in the longer run in the EU or in the world situation. Are we then not (deliberately) undermining the (now still existing) common understanding of what are social risks?

As Jacques Drèze emphasizes, his purpose was to clarify some basic issues, not to voice recommendations. In my view, he fully succeeded in introducing an attractive framework to think about the interaction between subsidiarity and interpersonal solidarity. Without that framework, I could not even have formulated my concerns in the way I did. From an academic point of view, Drèze's framework suggests a rich research agenda. I mentioned already the many open empirical questions that are well in the domain of traditional second-best public economics. I suggested that there is also a host of fascinating questions on institutions, intercultural diversity and identity, a research domain that is rapidly gaining popularity within economics.

Impatient policy-makers and citizens usually hate the conclusion that there is an interesting research agenda for academics. They want to move forwards. So: should we now, given the present state of our knowledge, move in the direction of tiered implementation? This move is risky and the jury is still out on crucial empirical issues. My preference therefore would be to keep the financing structure as it stands but to look for arrangements to introduce better-focused incentives for all players, including the regional governments, within that broad structure. This search for better incentives should be taken seriously, and should not be blocked by short-sighted defence of vested interests. Even for these more limited approaches, the coherent theoretical framework offered by Drèze is extremely helpful. Moreover, in the present Belgian context, it has strategic advantages. The crucial insight that, even for the presently wealthier regions, it is optimal to have a long run insurance system in place, is an essential element, which could perhaps help to have a more detached and open discussion on subsidiarity and interpersonal solidarity. Without such an open discussion, there is a real danger that Belgium will move into the direction of decentralized implementation, but without an adequate sharing of the risks between the regions. I fully agree that this would lead to a welfare loss for all regions.

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The role of commitment

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Like two workers gain from insuring each other against the risk of losing their income, two regions gain from insuring each other against shocks in their revenues or expenditures. The cost of transferring resources to the other region when times are good is offset by the benefit from receiving transfers from the other region when times are bad. If the future prospects for one region are generally better than for the other region, this could be incorporated in the insurance agreement, but the agreement can generally make both regions better off. Professor Drèze's exposition clearly underlines the value of future risk sharing and distinguishes this 'dynamic solidarity' from 'static solidarity'. The value for both regions from future risk sharing does not depend on the imbalance between the two regions today. This is an important observation. Unfortunately, the opposite argument is often heard.

Professor Drèze's proposal assumes strong commitment between Flanders and Wallonia to follow up on their initial agreement. I am convinced that Flanders and Wallonia are not in an uncommitted relationship and I hope that the commitments remain strong. However, it is important to understand the value of commitment and the impact policy proposals may have on this. If two regions cannot fully commit to an agreement made today, 'static solidarity' and 'dynamic solidarity' become interdependent. Even if an agreement of 'dynamical solidarity' is mutually beneficial, it can only survive depending on how much 'static solidarity' the agreement implies in the future. Let me elaborate on this point and analyze the role of subsidiarity in this particular context.

Assume two regions agree today to organize unemployment insurance at the federal level and thus pool all income risks deriving from unemployment. When in the next year unemployment in the one region is higher than in the other region, the interregional structure of the unemployment scheme implies that the second region is paying some of the benefits to the unemployed in the first region.[22] The ex-ante value of the insurance agreement for both regions -receiving help when experiencing relatively bad times- necessarily implies a cost for one of the two regions ex-post, namely helping out when experiencing relatively good times. The question arises what keeps the region with low unemployment from reneging on its earlier commitment to pay the other region's unemployed workers? The region could indeed decide not to pay. However, by doing so, the region will put the future solidarity at stake and hurt itself as well. Once one region has decided not to fulfil its promise, it is likely that the other region won't do so either in the future. Only if the promised transfer is smaller than the value of future risk sharing, a region will keep her promises. An agreement is thus *self-enforcing* if none of the contingent transfers specified in the agreement exceeds the value of future risk sharing. In Drèze's words, if the 'static solidarity' that the agreement potentially entails in the future is too large relative to the value of future risk sharing, the 'dynamic solidarity' will not survive in the long run, even though 'dynamic solidarity' is beneficial for both regions. The value of future risk sharing thus puts an upper bound on the static solidarity that the two regions can credibly expect from each other.

Anything that increases this upper bound increases the extent to which two regions can insure each other and is therefore valuable for both regions. A first factor is the regions' preferences for the future. The more a region discounts the future, the faster it will be tempted to renege on promised payments. For obvious reasons such as the danger of not being re-elected, politicians often have a stronger focus for the present and this will limit the scope for

[22] If the two regions expect different unemployment rates on average, the realized unemployment rates could be compared with the expected unemployment rates to determine the transfers, as Drèze suggests.

interregional insurance. A second factor is the commitment devices that help regions to keep their promises. Ex ante both regions like to tie their hands and benefit from delegating the power to enforce the agreement to some external (or super-regional) entity. Every institution that increases the cost of leaving the interregional insurance scheme, reduces the temptation to renege on the contract and increases the interregional insurance possibilities. Of course, a strong interregional identity and culture helps as well. Recognizing the role of commitment brings forward an argument against subsidiarity and the tiered implementation that Drèze suggests in his proposal. Setting up regional unemployment insurance arguably comes at a cost. When unemployment insurance is organized at the interregional level, this cost will be taken into account by the region that considers to renege on its commitment. When each region already organizes the unemployment insurance among its own members, this cost will be sunk and the temptation not to pay interregional transfers is stronger. Decentralization increases the temptation for regions to renege on interregional promises and makes further decentralization more likely. This mechanism thus predicts that subsidiarity may initiate a *cascade* of decentralizing initiatives.

Professor Drèze has analyzed many dimensions of the interaction between subsidiarity and interpersonal solidarity. In the end, empirical research should shed light on the relative importance of these dimensions. Related to the one issue that I have raised, empirical research could shed light on the extent to which (1) static imbalance reduces interregional insurance and (2) commitments between regions increase the scope for interregional insurance.

Genuine solidarity: coffee pot or cappuccino?

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Talking across the boundaries of academic communities is not that different from talking across the boundaries of linguistic communities. You need to find a common language, identify the really controversial points, listen carefully to some unfamiliar arguments and then determine whether you need to change the prejudices with which you entered the dialogue.

In discussing as a non-economist this characteristically lucid and enlightening piece by Jacques Drèze, I shall therefore start with a little bit of conceptual clarification, then reformulate in this light the central question raised in the piece and then concentrate on an aspect of that question which is — but, I shall argue, should not have been — set aside in the bulk of Jacques Drèze's contribution.

Three distinctions rather than two

Three distinctions play a crucial role in the framing of Jacques Drèze's paper. First, there is the distinction between static and dynamic solidarity. As I understand it, *static solidarity* is backward-looking. It reflects current entitlements and obligations and the derived pattern of transfers, as defined by past agreements, for example those incorporated in the Belgian federal state's social security and taxation systems. *Dynamic solidarity*, instead, is forward-looking. It is defined by a new deal that will define future entitlements and obligations, possibly entirely devolved to a more decentralized level of government, and the corresponding pattern of transfers.

Secondly, there is the distinction between single-tier and two-tier solidarity. Under a *single-tier* (or single-stage) regime, interpersonal solidarity crosses the borders of regional entities and is organized entirely at the federal level. Under a *two-tier* (or two-stage) regime, interpersonal solidarity is confined to the borders of each region, while inter-regional solidarity operates at the higher level level. The regionalization of solidarity can therefore be understood as a shift from single-tier to two-tier solidarity. Mixed regimes, in which part of the solidarity system remains single-tiered and part of it becomes two-tiered are also conceivable.

Thirdly and most fundamentally, there is the distinction between *ex-ante* (or genuine) *solidarity* and sheer *ex-post solidarity*. While the former redistributes, the latter only insures. While the former needs to rely on a "luck-egalitarian" conception of fairness, the latter need not appeal to more than self-interested efficient risk sharing. In our social security systems, genuinely redistributive social solidarity and compulsory social insurance are inextricably mixed, for example in the shape of earnings-related retirement pensions or unemployment benefits that involve both a floor and a ceiling while being funded in proportion to earnings. There may be good reasons for not separating them institutionally (see Baldwin 1990, Schokkaert & Van Parijs 2003). It is nonetheless crucially important to distinguish them conceptually (see Van Parijs 1996).

All three distinctions are present in Jacques Drèze's papers, but the third one, it seems is being collapsed into the first one. Dynamic efficiency, he writes (2.), "concerns specific arrangements regarding future risk-sharing", and arrangements regarding future risk sharing are "a matter of efficiency, not of redistribution" and hence raise no "issue of 'fairness'". But surely, there can and (in my view) must also be arrangements concerning the future, and hence "dynamic solidarity" as I understand it, that reach beyond sheer insurance. Consequently, it cannot be asserted that "the issue of 'fairness' under regionalization is entirely contained in the static definition of the initial conditions", at least if these are understood, as they clearly are in the example of a shift from a federal to a regional pension system (2.), by reference to a system of entitlements and responsibilities that will gradually whither away as the new system takes over.

One could of course decide — as a matter of policy, not of semantics — that dynamic efficiency should go no further than ex-post solidarity. Once this is decided, regionalization entails that inter-regional solidarity transfers can only be triggered by deviation from "expected paths of real regional income per capita" (8.), and not by differences in the current level of per capita regional income or in what the latter can be expected to be in the future in the light of each region's current assets and handicaps. I am sure that Jacques Drèze does not believe that, in case of regionalization, inter-regional solidarity should be so confined, and I therefore suspect that my imputing this view to his paper rests on my misunderstanding his first distinction. Whatever the terminology adopted, however, my key point that when talking about forward-looking solidarity economists cannot cosily barricade themselves in the discussion of efficient risk sharing. They cannot escape the issue of ex ante redistribution, and hence of distributive fairness. As a philosopher, I shall not complain. What I shall try to do in the following pages is supplement his discussion by exploring the crucial ex ante redistributive side of forward-looking solidarity, which he chose to bracket out.

The question widened: subsidiarity and ex ante solidarity

After this conceptual gymnastics by way of warming up, I can now state as follows what is or rather (in my view) should be the paper's central question: in a country like ours, must forward-looking solidarity (*both* ex-post and ex-ante) be single-tiered or two-tiered?

If average risk aversion is the same in the various regions, single-tier and two-tier solidarity could, under some assumptions such as the absence of inter-regional externalities (7.b), generate the same distribution of post-transfer income (4.). For various reasons hinted at by Jacques Drèze, the principle of subsidiarity pulls in the direction of two-tiered (or indeed multi-tiered) solidarity: a more decentralized set up can better track local features (among them different average degrees of risk tolerance) and make both public officials and the population more accountable. But the *subsidiarity principle* is simply a presumption in favour of the lowest level of government compatible with the efficient discharging of a particular public responsibility. It can be reversed by the weight of countervailing factors such as significant economies of scale or externalities. If such weighty factors exist in matters of (ex post or ex ante) solidarity, then there is a case for maintaining the institutions of solidarity, or some of them, at the federal level in Belgium, and for lifting them to the supra-national level in Europe.

As Jacques Drèze repeatedly emphasizes (1.,7.), which of the two opposing sets of considerations carries a greater weight, and hence whether a single-tier or a two-tier regime is to be preferred once subsidiarity is taken on board, depends on empirical facts, some of which are simply not known. But granted that the "dynamic solidarity" to be conceived and implemented must cover genuine or ex-ante solidarity no less than sheer ex-post solidarity, the answer also hinges on value judgements less trivial than what is encapsulated in the desirability of Pareto improvements. More specifically, one needs to specify, be it roughly, a criterion of distributive justice and the scale at which it is supposed to operate.

Justice between peoples versus justice across peoples

For some, from Michael Walzer (1982) or John Rawls (1999) to Bart De Wever (2008), there is a fundamental difference between what social justice requires by way of transfers between individual people within a particular national community and what justice requires by way of transfers between distinct national communities. For example, whereas Rawls's conception of social justice, more specifically his *difference principle*, requires that the worst off class of a society should be made as well off as is sustainable, his conception of international justice requires no more than (1) fair cooperation for mutual advantage and (2) residual assistance by affluent societies to "burdened" societies, i.e. societies so destitute that they cannot sustain just domestic institutions.

In such a perspective, a two-tier regime is self-evident and is by no means supposed to yield an outcome approximately equivalent to a single-tier solidarity regime. Whereas domestic distributive justice, as specified for example by the difference principle, demands far more than mutually beneficial insurance, international distributive justice hardly reaches beyond efficient risk sharing, indeed stops precisely there among societies that are as far from being "burdened" as are most member-states of the Europe Union and as are no doubt Flanders and Wallonia too.

According to others, however, this dualistic conception of justice no longer makes sense in today's world. Distributive justice must now be thought about straight away at the global level, between all individual members, present and future, of the human species. The states and the national communities they shelter and help create may be valuable in all sorts of ways, but they have no fundamental ethical status. They do not form an intangible moral landscape within which the issue of justice needs to be framed. They are merely modifiable instruments to be shaped and empowered as best fits the ideal of global justice. In a world that is ever more characterized by transnational migration and communication, by global economic interdependence and local cultural diversity, this second approach makes far more sense than the first one. If we want to think about solidarity for the 21st century rather than the 20th or the 19th, the question of global justice, in a sense no longer reducible to justice between nations, must be our starting point. I happen to share this second perspective. This is not the place to motivate it more than I just did. Here, I shall simply take it for granted. (See Rawls & Van Parijs 2004 and Van Parijs 2007 for a less sketchy discussion.)

Why genuine solidarity should be two-tiered

Does the adoption of this second perspective, and hence the rejection of a dualistic conception of justice, entail that one should also resolutely reject moving from a single-tier to a two-tier organization of solidarity? Not necessarily. It is of course true that for the sake of ex-ante-redistributive solidarity (in the perspective adopted here, in contrast to the dualistic perspective rejected above) just as for solidarity as sheer insurance, there is a strong presumption in favour of making the population covered as large as possible. If all that is at stake is insurance without ex ante redistribution, the larger the pool of people insured, the better insured we can be. And if justice requires equalizing people's opportunities worldwide, the less remote we are from including the whole of mankind in our solidarity institutions, the less unjust our world will be. But the question is not about the size of the population to be covered, but about whether solidarity between all members of this population should ideally be organized in a single tier or rather in two (or several nested) tiers, say through international and/or inter-regional transfers coupled with inter-individual solidarity organized at a more decentralized level.

Some considerations adduced by Jacques Drèze in connection with efficient risk-sharing happily extend to ex-ante solidarity. It is not only the degree of risk tolerance that may differ, on average, from one region or country to another, but also the views about how the risks to be covered should be characterized and about the way in which and extent to which they should be covered. Between the majority views in Flanders and Wallonia, for example, there may be some disagreements about whether, under what conditions and to what extent social solidarity should cover infertility treatment, so-called therapeutic harassment or organ transplant to the elderly. If this is the case, it will not be because of deep cultural difference rooted in some features of their respective languages, but simply because distinct native languages tend to be associated with exposure to distinct medias and hence to distinct patterns of information and argument. While being in principle fully consistent with the same level of country-wide solidarity, two-tier solidarity in health care would make it possible to track such differences in solidarity-relevant "tastes" more finely than a one-tier regime could (see Van Parijs 2004).

Moreover, two-tier solidarity offers a way of tracking collective moral hazard unavailable to single-track solidarity. This is far from being trivial in a context in which decentralized entities have been endowed with powers whose exercise affects the risks to be covered by solidarity on a scale comprising several of them. For example, with a given level of GDP per capita, one regional government may exercises its educational competences in such a way that the incidence of poverty is lower, or it may manage town planning and housing policies in such a way that people are less isolated and hence mental illness less frequent, or it may develop public transport and road safety policies that result in less injuries from car accidents. Whereas single-tear solidarity would automatically "reward" the regions that settle for lousy policies with increased net transfers, two-tear solidarity would make it possible for the more virtuous or clever governments to reap the benefits of their policies, thereby providing better incentives.

This provides a strong incentive-based case for a two-tier (or multi-tier) solidarity regime in those cases in which a legitimate concern for subsidiarity has led to shifting to regional authorities — as is the case in Belgium — or to maintaining at the level of national authorities — as is the case in the EU — competences with a great potential impact on the incidence of risks. Of course, at the collective no less than the individual level, we face the standard question of whether higher risks and lower incomes can really be ascribed, whether directly or indirectly, to the policies adopted rather than to exogenous factors. In addition, even in those cases in which there is no doubt about the divergence between regional performances being caused by divergence between regional policies, it is not obviously fair to make the whole population of the region, let alone a particularly vulnerable subset of it, pay for sloppy policies which they had no role in choosing. Some of them may have voted systematically at every single election against the government that implemented them. One must therefore be particularly weary of blaming the population of a particular region for the latter's inferior performance or of asserting self-righteously that it "deserves" only a lower level of social benefits. Yet, it remains the case that a two-tier regime offers ways of "responsabilizing" autonomous regional authorities which are not available under a single-tier regime.

Why genuine solidarity should not be two-tiered

Greater sensitiveness to local preferences and circumstances and better incentives for decision-makers: the case for a two-tier regime seems overwhelming. And yet it is far from decisive because of a number of considerations that support a unified regime, some of which hold very generally while some hold with particular force in the Belgian case. Among the former, there is, most obviously, the possibility of significant economies of scale in the organization of a solidarity regime. To run an efficient health care system, in particular, the indispensable constant reassessment and readjustment of what needs to be covered and how requires a considerable level of expensive expertise whose duplication or triplication would be wasteful (see, for example, Closon, Marchand & Van Parijs 1997).

A more subtle general argument against a two-tier regime is that it encourages a perception of social transfers that fits most easily into the dualistic conception of justice which I rejected above. The frequently uttered claim that shifting to such a two-tier regime for all aspects of Belgium's social security would enhance the "transparency" of the transfers only makes sense on the dualistic assumption that transfers across peoples and transfers within a particular people are of a fundamentally different ethical nature. If they are not, as I have sketchily argued is the case, a two-tier regime is not more but less "transparent" and can only be justified instrumentally as a way of achieving finer calibration or of creating more efficient incentives. Hence, precisely because of the misleading "transparency" it involves, a two-tier regime can hinder the political sustainability of generous trans-regional solidarity, which can too easily be assimilated to charity dispensed at the discretion of the "donor" government and under the conditions it fancies imposing, in sharp contrast to the distributive fairness that governs inter-personal transfers.

The main impediment to Belgium's solidarity system moving significantly in a two-tier direction, however, is independent of these two general arguments. It relates specifically to situations such as the Belgian one where the second tier is pitched at the level of entities between which there is considerable level of actual and potential mobility, whether in the form of migration or of commuting. A tiny central area comprising less than 2% of Belgium's territory produces about one third of the country's wealth and is shared by the three regions. It consists in the region of Brussels-Capital and the immediately adjacent richest part of the richest province of each of the other two regions. If mobility in and out of this tiny territory and between its three regional components could be ignored, inter-regional mobility would provide no major obstacle to the regional devolution of inter-personal solidarity. But given the weight of this tiny area in the country's economy, it obviously cannot. Indeed, it provides the most formidable obstacle to a significant move to a two-tier regime. Why?

A first challenge arises from the magnitude of the commuting between Brussels and the other two regions. The close positive association between GDP per capita and primary income per capita and the close negative association between level of employment and rate or unemployment, both routinely taken for granted in the reasoning so far, no longer hold. The Belgian region which produces by far the highest GDP per capita is also the region whose taxable income per capita is lowest, and the only Belgian region whose jobs are too numerous for its active population is also the one whose unemployment rate is highest. As a result, the standard simple formulas for incentive-friendly inter-regional solidarity based on GDP per capita no longer make much sense.

More serious still, however, is the challenge that stems from high rates of trans-regional migration, both actual and potential. About 10% of the Brussels population leaves the region every year — mostly towards the provinces of Walloon Brabant and Flemish Brabant, in that order — and is replaced by about 11% moving in from the rest of Belgium and the rest of the word. If each such move were to mean a change in liabilities and entitlements as a result of shifting to another interpersonal solidarity regime, the level of administrative complication would obviously be greatly increased. Red tape, however, is only the more modest of two evils faced by the creation of a second tier under conditions of big actual and potential migration flows.

A two-tier regime implies fiscal autonomy for the regions, each of which can shape its redistributive regime so as to best fit local circumstances and preferences. However, as Jacques Drèze notes (7.b), redistributive systems create externalities by affecting the feasible policy space of neighbouring entities. These externalities are obviously particularly strong when a large proportion of the wealth created and of taxable income is located in a conurbation shared by three fiscally autonomous regions. If one tax base is taxed at a particularly low rate in one entity, it is difficult for the others not to follow suit. Admittedly, a two-tier regime also implies something like a GDP-linked inter-regional transfer system. The anticipation of these transfers reduces the incentive to attract or retain a mobile tax base inside the region. But it does not abolish it. Even in the extreme case in which GDP-per capita would be systematically equalized, governments would arguably retain an incentive to lower taxation on the more mobile economic agents. A fortiori, if moral hazard concerns keep inter-regional transfers far from full equalization, the fiscal autonomy of entities subjected to high mobility pressure, such as Belgium's three regions, will depress the sustainability of the high levels of intra-regional interpersonal redistribution which social justice demands. (See Roland, Vandevelde & Van Parijs 2002: §4 and appendix).

Cappuccino versus coffee pot

Bringing in ex-ante redistributive solidarity, as I have been at pains to do all along by way of a friendly complement to (more than a critical comment on) Jacques Drèze's paper, does not alter one of his central messages: whether we should go for a single-tier or a two-tier regime depends on empirical matters which deserve further investigation. The case for a two-tier regime is strengthened if it can be shown, for example, that preferences about the shape of solidarity differ significantly (for reasons other than people's place in the distribution of income), or if evidence reveals the regional policy-makers' responsiveness to the incentive instruments made possible by a two-tier regime. On the other hand, the case for maintaining essentially a one-tier regime would be affected, for example, by estimates of the economies of scale that would be foregone and of the complications that would be created in case of regionalization, or by evidence about the extent to which the inter-regional versus inter-personal framing of trans-regional transfers affects their political sustainability, or again by an assessment of the long-term impact of tax competition between regions whose economic cores are as closely knit together as are those of Belgium's three regions.

The trouble is that we cannot wait for neat and conclusive empirical work to be completed on these many issues before adopting guidelines for promising reform. Relying on incompletely informed guesses, therefore, is not irresponsible. It is wisdom itself. Based on what I have learned from many colleagues from several disciplines over many years, combined with value judgements I am prepared to assert and defend, my own guess at this stage is that the second set of considerations is strong enough for us to want to stick to a single-tier regime for the bulk of our solidarity system, while letting regions (and communes, and firms, and families, etc.) top it up with their own resources and according their own tastes.

This is not a two-tier or two-stage regime, where transfers operate across regions while regions take full responsibility for interpersonal solidarity. Under a two-tier regime, each region prepares its own coffee with its own machine and collects it in its own coffee pot, and before the cups start being filled, the region with the biggest coffee pot (per capita) has to pour some coffee into the pots of the less lucky regions, so that all the cups in all the regions can get filled to a fair extent. The model I propose does involve two (or more) stages, but it contains two (or more) layers. It is rather like a cappuccino. One big machine makes everyone's coffee and pours it in all the cups. But regions can use their own little machines or additional equipment to produce cream and add it on top of the coffee base, and they can of course add sugar, cacao and cinnamon as they please, all with their own money.

Such a cappuccino regime can perform the risk-sharing or pure insurance function on which Jacques Drèze's paper concentrates. But I cannot see any strong reason for believing that it could perform that function any better than the two-tier regime the paper explores. On the other hand, if the need to durably secure genuine or ex ante redistributive solidarity is brought into the picture, as I believe it must, then a new set of arguments comes into play, and something like the cappuccino model I gestured at becomes the front-runner. So at least I would argue had I not been too long already.

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Reply

by Jacques H. Drèze

Comments on the texts of my discussants

Jacques H. Drèze, CORE

1. First of all, I feel deeply gratified and grateful that a number of distinguished scientists have taken the trouble to read and complement my modest note, and this in spite of being given a very short notice. Beyond the response to a challenging topic, there are expressions of friendship, which I duly appreciate. Also, I wish to thank and congratulate the "moderator" André Decoster who did a perfect job of arranging this varied and constructive discussion.

A major benefit of the discussion is that it has brought in specialists of public choice, federalism or justice, who are much better equipped than myself to deal with some of the complexities of our subject. As mentioned at the outset, my own contribution is limited to spelling out the implications of risk-sharing theory for our topic. My comments on further issues are mostly meant to bring out the *limitations* of the risk-sharing approach. Thanks to the discussants, these limitations have received more, well-deserved attention.

Rather than reacting to each discussant in turn, I shall limit myself to a few comments on *issues* under discussion, without giving each discussant explicit credit for every issue raised. There is indeed much convergence in the independent contributions – a positive feature in its own rights – and separate reactions would be repetitive. Also, reacting to issues provides an opportunity to *clarify* some points treated too concisely in my note. My global reactions will be followed by natural conclusions about where to go from here.

2. Bringing in the risk-sharing viewpoint automatically raises the difficult problem of **disentangling risk-sharing from redistribution**, a problem recognised by most commentators and discussed by Philippe, Pierre, Robin, Jean, Christian… In my view, *a clear distinction is possible when looking forward* – though not when assessing the current situation. Indeed, when looking forward, one can *separate logically expectations of a variable and its deviations from expectations*. (Easier said than done – but the logical distinction is clear). One then regards mutualisation of the deviations from expectations as a pure risk-sharing operation; this automatically relegates to expectations any redistributive consideration. And the expectations are related to *initial conditions*, which offer scope for redistributive transfers. In contrast, when assessing the current situation, the risk-sharing aspect is *implicit* in the observed allocation. To "disentangle" it from redistributive transfers, one is led to bring in the "veil of ignorance". Philippe and Pierre remind us meaningfully of the limits of that concept.

Thus, I do not plead guilty to "collapsing" the distinction between redistribution and insurance into the distinction between static and dynamic solidarity, as suggested by Philippe. It is *only when looking forward* that the two distinctions coincide; when assessing the current situation, the distinction between static and dynamic solidarity looses its edge, and only remains helpful if it helps to disentangle redistribution from the impact of *earlier insurance*. Also, the framework within which I have separated the static/dynamic dimensions is unidimensional: "real disposable incomes per capita". I would not claim that the distinction remains clear-cut in higher-dimensional frameworks.

I have used as an illustration the possible regionalisation of Belgium's public pensions, pointing to the need for initial transfers corresponding to the present value of entitlements linked to past contributions. *Looking forward*, the different regions would face different evolutions, linked both to demography and to revenues. *For given levels of working-life* *contributions*, *retirement ages and post-retirement incomes*, one can attempt to define expected values of net financial balances. These expected values are apt to differ across regions. *Solidarity among all Belgian citizens* would militate in favour of additional initial transfers correcting the unequal burden of pensions across the regions. These additional transfers would be *redistributive*; what is more, they would permit any degree of redistribution across the regions. At the same time, an efficient risk-sharing arrangement calls for mutualising the deviations of actual net balances from expectations. I maintain that *the logical distinction is clear-cut* – while fully recognising that implementing this two-tiered approach is overloaded with practical difficulties.

My illustration invites three further comments. First, the previous paragraph singles out the *interregional dimension*. It fails to bring in, for instance, the *intergenerational dimension*, which is at the heart of today's ageing problem. Taking that other dimension into account, as suggested more generally by Erik, reveals that mixing interregional with intergenerational solidarity opens prospects that the two-tier approach eliminates (Philippe should like this…).

Second, regionalising pensions opens the way to different regimes in the different regions. As Robin and others note, this violates "equal treatment of citizens independent of their region of residence". I have labelled that violation "a natural implication of subsidiarity", while acknowledging the scope for differences of opinion… The differences are indeed with us!

Third, Philippe raises the issue of a possible difference between concepts of justice applied to interpersonal redistribution versus concepts of justice applied to interregional or international redistribution. I side with him in longing for a global approach to justice. More modestly, I note (under **5.**) that we are about as far from global risk-sharing as we are from global justice…

3. The other contribution of risk-sharing analysis consists in bringing out the long-run nature of our problem. There seems to be general agreement on this point. It brings in the issue of **long-run commitment**, which receives a lot of attention from Johannes, Christian, Jean... I was thereby led to formulate (more explicitly than in a preliminary draft) my *illustrative scheme* of debt exchange. This area is wide open for further exploration. All the more so that several discussants contrast this long run with the short-run horizon of politicians – or even, as Robin notes, with the lifetime of citizens…

Regarding more general problems of implementation, there is again much agreement, and several additional themes are introduced. For instance, Philippe mentions explicitly the potential role of *economies of scale* (which I have left implicit under the broad umbrella of "externalities"). He is also right in spelling out that "mobility" includes *commuting as well as migrating*. Referring to Brussels and its periphery, he concludes that migration and commuting rule out regionalisation of social security. The experience elsewhere (Washington, Monaco…) might suggest otherwise – but these areas are unilingual!

There are some interesting variations on the theme of *incentives versus moral hazard*, with Philippe seeing in local incentives "a way of tracking collective moral hazard" not available under centralisation.

The issue of *trust*, aptly brought in by Erik, is important. Erik writes: "..at the Flemish side, there is a deep lack of confidence in the French-speaking politicians". I am not surprised! He contrasts this with "..a large degree of trust in the existing social security system" – and concludes with a preference to "keep the financing structure as it stands". Definitely instructive – also for someone like me who thought that "trust in autonomous Flemish institutions *alone*" was the underpinning of separatist tendencies…

4. To conclude, the need for **case-by-case empirical investigation** of the many issues raised in the discussion is largely confirmed – all the more so that few if any references to such investigation with Belgian data are offered here.

But there also remain **theoretical issues** deserving continued attention. The list includes the distinction between risk-sharing and redistribution or the role of local incentives in containing public moral hazard.

On both fronts, the Re-Bel initiative stands positively encouraged!

At this stage, some of us (including Erik and Philippe, two Re-Bel founding fathers...) conclude that regionalisation of social security in Belgium would be premature, to say the least. While others stress that pressures in that direction will not abate. Listing interregional risk-sharing as a prerequisite of efficient regionalisation may or may not prove convincing. But failure to stress the point would be irresponsible.

Appendix

Solidarity: regions or persons? Some calculations to illustrate the "by-product" status of interregional transfers

André Decoster and Dirk Verwerft, KULeuven

Jacques Drèze's paper on the interaction between subsidiarity and interpersonal solidarity raises, among others, the interesting empirical question how much of the transfers in the Belgian taxation and social security system can be interpreted as resulting from an efficient risk sharing insurance contract, and how much as the expression of ex ante solidarity. Jacques shows that it is conceptually possible to implement this "redistribution" following from the insurance perspective in two steps: first by designing - after initial conditions have been suitably taken into account -an insurance for deviation of regional GDP's per capita from their expected trend, leading to interregional compensating transfers; second by designing interpersonal redistribution within each region.

Jacques Drèze emphasizes that his text has to be read in a forward looking way, where the past is taken up in the "initial conditions" when the contract is set up. Yet, we could try to interpret the current Belgian interregional transfers in these terms. In that case, the choice of the exact time when the implicit contract was agreed upon plays a decisive role. It determines both the initial relative position of the regional GDP's (and all other aspects deemed relevant for the initial conditions) and the region's expectations about future growth paths. Which moment should one choose? The last reform in the tax or the social security system, or the last reform that significantly changed transfers across regions? The question could even be turned around: has there ever been a moment in history with a reasonable set of beliefs that could be considered as the point where an implicit contract was closed which can explain the later transfer directions and magnitudes (assuming that later reforms had only a minor influence on the transfers)? The goal of the illustrative calculations we present below is therefore *not* to provide an empirically quantified implementation of the framework proposed in Jacques' text, nor in a backward – and even less in a forward looking way. As a mere static and descriptive analysis, they only serve to illustrate two things.

First, in current practice, a balanced and nuanced approach to the interregional transfer debate, embedded in a sound and explicit conceptual framework is altogether missing and more than ever necessary. It does not seem likely that the current, often hotly debated interregional transfers correspond to interregional transfers that would follow from the two tiered set-up described in Jacques Drèze's text. And as we will show below, the detailed data can be interpreted (and manipulated) in very different ways according to the theoretical and – necessary - ideological perspective that one wants to take. We want to further qualify this contentious topic, by showing how the current transfers are a relatively **small by-product of an interpersonal redistributive tax and transfer system** which did not intend to take up "region" as a crucial characteristic (see the comment of Erik Schokkaert above). Looked at it from this perspective, the repeated call for more figures, refined methodology and updated figures in the debate on (current) interregional transfers seems to be beside the point, because they do not make the tax and transfer system more transparent. Quite the contrary.

Second, we will show that microsimulation models can help in reframing the debate. These models simulate tax and social security systems for all individuals on a representative sample of the population, often an income survey as the EU-SILC.[23] Since the sample is meant to be representative for the Belgian population, ànd we also know in which region the individual or household lives, these micro-calculations offer the possibility of having a much more detailed look at the direction and explanation of transfers. To the extent that one judges the regional perspective to be sensible and justified, these micro-calculations can be considered as valuable complements for the mainly macro-based calculations of interregional transfers. But because the surveys also contain variables as individual or household income, professional status, age and educational status, microsimulation also allows to leave the "univariate" presentation which dominates the public debate (where the univariate analysis is along the regional axis), and to switch to a multivariate analysis which might quantify the role of "region" as an explanatory variable in interpersonal transfers[24]. In this sense one could even consider our calculations as illustrative for the thought of Christian Gollier in his comment when stating "The uncertainty faced by a community is nothing else than the sum of individual risks faced by its members". Adding in these individual factors, we will show, changes the picture considerably and actually relativizes the importance of current interregional transfers.

Data, model and benchmark results

The data used here come from the EU-SILC 2004 income survey. The simulation of personal income taxes and social security benefits and contributions was carried out with the MISIM program of the University of Antwerp[25]. The model calculates personal income taxes, employee social security contributions and social benefits received at the household level for the year 2003. We have added the employer social security contributions as calculated by the EUROMOD microsimulation program running on the same database.[26]

We follow the methodology used in the report of the National Bank (see Dury et al. 2008) by calculating the transfers as the difference between the net tax per capita in the region and the national average, multiplied by the number of inhabitants in the region. A positive number indicates that the region contributes more to government revenue than could be expected on the basis of its population share. A negative figure reveals that the region is a net recipient. Table 1 shows the results for the different components of taxes, social contributions and benefits.

Table 1: Transfers across regions in 2003, per capita in euros per year

	Flanders	Wallonia	Brussels
Population	6034015	3384034	1009806
Population share	57,9	32,4	9,7
Personal income tax	202	-384	79
Social security Benefits	104	-89	-327
Employee Social Contributions	102	-146	-119
Employer Social Contributions	284	-418	-298
Total	693	-1036	-666

23 EU-SILC is the Eurostat Survey on Income and Living Conditions
24 See Cantillon en De Maesschalck (2008) for an earlier contribution.
25 We are grateful to Gerre Verbist for performing the simulations.
26 See http://www.iser.essex.ac.uk/research/euromod for the European-wide publicly available microsimulation model EUROMOD.

Table 1 shows the familiar univariate story, often produced by means of macro-figures.[27] Flanders is overall a net donor for all types of government revenue and transfers, while Wallonia and Brussels are net receivers, with the exception of personal income taxes for Brussels. On average a Flemish resident pays €693 per year to the other two regions. Not unexpectedly, personal income tax and social security contributions of the employers exhibit the most important transfers. Of course, this is on a per capita basis and does not take into account differences in the labour population.

Indeed a by-product

Is the transfer of €693 per year paid by a Fleming high? The top row of table 2 repeats the three figures of the bottom row of table 1, and compares them with other, still univariate, groupings of the Belgian population. Indeed, why not look at the variation in the net tax rate between home owners and non home owners, or according to age groups or educational level?

Table 2: Transfers between different socio-economic groups (€ per capita per year)

Region	Flanders	Wallonia	Brussels		
	693	-1 036	-666		
Education	Low	Secondary	High		
	-5 085	468	4 849		
Employment	Self-employed	Employed	Unemployed	Retired	Other
	2 504	5 592	-7 196	-12 108	-8 557
Home owner	No	Yes			
	-1 740	616			
Income [28]	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
	-7 897	-6 908	-2 562	2 414	10 936
Age	< 30	>=30 & <50	>=50 & <65	>=65	
	2 410	3 132	-232	-13 448	

Note: *blue indicates positive net tax (paying); red: negative net tax (receiving)*

The results in Table 2 which are expressed in yearly euro amounts per capita (where the number of people is counted in the respective cells), are revealing.[29] The Flemish transfer is approximately the same size as the one home owners pay to non home owners. The transfer which highly educated people pay to low educated ones is about seven times as large as the

[27] One could easily multiply the per capita figure in the bottom row of table I to obtain the figure comparable with the macro figures as e.g. produced by the National Bank or the "Transfer Commissie". We obtain a transfer of 4,180 billion € of Flanders to the other two regions (3,507 to Wallonia and 0,673 to Brussels). It is tempting to consider this as a validation of either our own model and data, or of the macro methodology, but we abstain from this for at least two reasons. First, we do not cover all government revenues that are taken up in the reference studies (e.g. indirect taxes), and the similarity of the total transfer conceals important divergent figures in some categories. E.g. for personal income taxes the National Bank reports Brussels as receiving 455 million €, whereas we obtain a positive net tax for the Brussels region of 79 million €. Second, our aim is explicitly *not* to produce a reliable interregional transfer but to produce a benchmark figure for the next sections.

[28] Income is measured here as 'equivalised disposable income', where 'equivalised' refers to the fact that we divide nominal household income by a so-called equivalence scale to take into account economies of scale w.r.t. household size. The quintiles are constructed as to contain 20% of the individuals in the population.

[29] The classification of individuals is done by looking at the characteristic of the household head. Hence all individuals belonging to a household where the head is unemployed, are counted in the cell "unemployed". This has to be taken into account when interpreting the per capita figures.

interregional transfer.[30] And, not surprisingly, the most important transfer is the one from rich people to the bottom three quintiles of the distribution (€10936 per year).

Table 2 clearly illustrates that interregional transfers in the current Belgian set-up of a tax and transfer system are a *by-product* of demographic and economic differences. Differences between households along dimensions that every welfare state wants to compensate for, e.g. employment status, (although there are of course debates about the levels) result in substantial transfers along dimensions which one does not want to compensate for explicitly (e.g. region) because of correlation between the dimensions. It also implies that a relatively small transfer in one dimension can be unjustified while a large one in another dimension might be justified.

Interregional transfers: certainly not 'WYSIWYG'...

The home owner transfer in table 2 may have led some readers to the conclusion that this is an inappropriate way of presenting the results, since the transfer probably has to do with the fact that home owners are richer than renters. We agree. And we therefore step from the univariate to a bivariate one, where we cross two variables and take region as one of them. In tables 3a-3c we cross region with equivalised disposable income quintiles, and show the transfers for three different reference points. We have defined the quintiles at the national Belgian level, in order to compare people living in more or less the same objective conditions.

Table 3a shows the transfers per capita relative to *the national average* (and hence the population weighted sum over all cells equals zero). The simple questions "does the Flemish resident pay?" and "does the Walloon resident receive?" get a nuanced answer once we no longer accept that there are only "average" Flemish and Walloon people, but take into account the heterogeneity within the different regions. The rich Flemings do pay indeed, but not that much more than the rich Walloon, and certainly less than the rich Brussels people. And the poor Fleming do receive transfers which are as outspoken as the ones for the poor living in Brussels and Wallonia. What the table reveals is that analyzing a tax transfer system along an axis or perspective for which it has not been designed does not enhance transparency. Quite the contrary. The transfers become clear when we insert a dimension for which the system has been explicitly designed.

Table 3a: Yearly per capita transfer in € with respect to national average

Income Quintile	Flanders	Wallonia	Brussels
1	-7 920	-8 217	-7 104
2	-7 129	-6 589	-6 791
3	-2 693	-2 268	-2 864
4	2 559	2 139	2 348
5	10 629	10 000	16 598

Note: blue indicates positive net tax (paying); red: negative net tax (receiving)

Table 3b depicts the transfers *within* each region. This means that average per capita taxes are calculated per region and that the figures in each cell represent the deviation of the cell with respect to this column average. Since per capita taxes in Flanders are higher than in Belgium, Flemish people in all quintiles now pay less taxes or receive more transfers than in table 1. The opposite is true for Wallonia and Brussels. This table can be used to compare the level

[30] This does of course not take into account the implicit transfer to highly educated people by means of the publicly financed educational system. We only track the explicit cash transfers of the tax benefit system.

of redistribution within the regions (accepting that the Belgian quintiles reflect objective, different welfare levels), and is in fact an indication of step two in Jacques Drèze's analysis. But it is not difficult to imagine how slippery the use of the results in table 3b might be in public debates.

Table 3b: Yearly per capita transfer in € with respect to regional (column) average

Income Quintile		Flanders	Wallonia	Brussels
	1	-8 613	-7 181	-6 437
	2	-7 822	-5 552	-6 124
	3	-3 386	-1 232	-2 198
	4	1 866	3 175	3 015
	5	9 937	11 036	17 265

Note: *blue indicates positive net tax (paying); red: negative net tax (receiving)*

A still more striking phenomenon becomes visible when one looks at transfers the other way around. In that case we take as reference group the own income quintile to which a household belongs. Table 3c presents these interregional transfers calculated as regional deviations from the average tax rate *within* each income quintile. We now answer the question: if we take a poor household, is there a different treatment between a poor Fleming, a poor Walloon, or a poor Brussels inhabitant? The same for the other quintiles.

Perhaps contrary to intuition based on the information in Table 1 (where Flanders is the net payer and Wallonia and Brussels are the net receivers), four out of the five income groups exhibit a pattern which favours Flanders. Only in the fourth quintile group the structure of Table 1 is repeated. How is this possible?

Table 3c: Yearly per capita transfer in € with respect to quintile (row) average (number of people in brackets)

Income Quintile		Flanders	Wallonia	Brussels
	1	-23 (735420)	-320 (679308)	793 (296084)
	2	-222 (984008)	318 (604999)	116 (220397)
	3	-131 (1261779)	295 (732559)	-302 (168585)
	4	145 (1490870)	-275 (756858)	-66 (139048)
	5	-307 (1561908)	-936 (610301)	5662 (185721)

Note: *blue indicates positive net tax (paying); red: negative net tax (receiving)*

Table 3c is an almost perfect example of Simpson's paradox mentioned in nearly every introductory textbook on statistics. Conditional on equivalent disposable income quintile, Flemish people on average receive transfers from the other regions combined in any but the fourth quintile. The situation is symbolically depicted in Figure 1, where the black lines connect the quintile average net taxes per capita paid by Flanders and the other regions respectively (the lowest line being the first quintile, the highest the fifth quintile). The slopes of four out of five quintiles are up, indicating higher net taxes in Wallonia and Brussels combined than in Flanders, while only the slope of the fourth decile is down. Yet when one considers overall regional averages as in table 1, so neglecting quintiles in one's analysis, the slope is down, indicated by the red line. Note that even if the slope of the fourth quintile were also positive, the overall slope could still be negative (in which case this would be a perfect illustration of Simpson's paradox).

The explanation lies in the fact that there are relatively more Flemish people in the higher quintiles, shifting the left hand point of the red line (the average net tax paid in Flanders) up, while there are relatively more people in Wallonia and Brussels in the lower quintiles, dragging the overall net average tax (the right hand side of the red line) in Brussels and Wallonia down. Put differently: the red point on each side is a population-weighted sum of the black points on the same side, and for Flanders the weight of the higher quintiles is higher while for the combination of other regions the weight of the lower quintiles is higher.

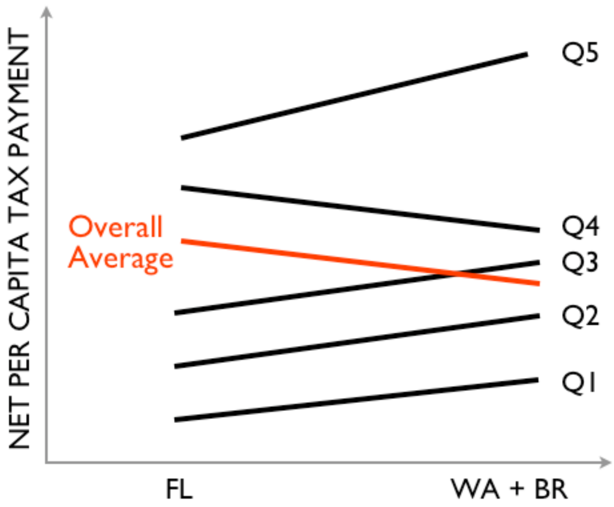

Figure 1: Simpson's paradox

The conclusion of these three tables 3a-3c as compared to the standard tale of Table 1 is that in order to choose for one perspective or the other, one needs a theory consisting of both a sound conceptual framework (e.g. the one offered by Jacques Drèze) and ideological inputs. All other calculations of interregional transfers are "ad hoc" and hence meaningless or prone to manipulative interpretation. If one believes that social justice should mean that net taxes paid are equal across regions independent of the differences in welfare levels between the regions, the marginal regional perspective can do and this shows 'injustice' towards people living in Flanders. But in the other extreme case, where one considers equivalent disposable income quintiles to reflect the welfare level of the population perfectly and one believes that people of the same welfare level should pay the same net tax, then the Belgian tax system is socially unjust by advantaging the people living in Flanders (except for the fourth quintile).

Regional aspects of Belgian inequality

Table 2 showed that the regional transfer effect is small compared to differences along other dimensions. For an overall view, it is useful to see what the effect of region is on the total inequality in Belgium. To achieve this, we used the fact that inequality measures like the Gini or the Theil's entropy coefficient can be decomposed into inequality between subgroups in a population and the inequality within these subgroups. Tables 4a and 4b summarize the results. In the first two columns we give the decomposition for the baseline incomes in 2003.

Table 4a: Gini decomposition

Gini components	Primary income	Disposable income	Disposable income Simulation 1	Disposable income Simulation 2
Total	.511	.263	.270	.272
Within regions	.226	.115	.118	.115
Between regions	.042	.024	.060	.060
Overlap (residual)	.243	.125	.092	.097

Table 4b: Theil decomposition

Theil components	Primary income	Disposable income	Disposable income Simulation 1	Disposable income Simulation 2
Total	.480	.122	.127	.129
Within regions	.477	.121	.119	.122
Between regions	.003	.001	.007	.007

The commonly used Gini coefficient (table 4a) is not simply decomposable into a 'between' and 'within regions' component but has an extra term capturing the overlapping between the regional distributions. As this is not related to between groups inequality (considered to be the difference between the group averages weighted by the groups' population) it is generally counted as part of the within groups variation. However, to account for this conceptual peculiarity, we also included a perfectly additively decomposable inequality measure, Theil's entropy index, in table 4b. As is clear from the first and second column, the influence of the between groups, regional component on inequality is only a minor fraction of the overall inequality, before (column 1) as well as after (column 2) taxation.

The third and fourth column show (purely arithmetic) simulation results on inequality if the transfers between the regions are removed and all regions adopt the average Belgian per capita tax rate. In practice: Flanders can lower its net tax rate (either by lowering taxes or increasing transfers), Wallonia and Brussels have to increase the net tax rate. There is of course ample choice in how to implement these tax changes. We show the effect of two stylized scenario's: a proportional one, where net disposable per capita incomes are changed in proportion to their net tax in the baseline (simulation 1) and one in which each individual receives or has to pay a fixed amount (simulation 2). In both cases the overall inequality in Belgium rises because of a substantial rise in between group inequality. The quite stable 'within' component (which itself is the weighted average of inequality within the regions) is the result of different trends in the three regions, which are heavily dependent on the chosen scenario. Flanders can lower taxes. If this is done by giving all Flemings the same absolute amount (Scenario 1), inequality as measured by a scale invariant inequality measure goes down. Whereas the opposite occurs in Wallonia and Brussels: taxing all inhabitants with the same additional amount increases inequality.

Finally we summarize the change in inequality and regional average disposable incomes by combining them into an 'abbreviated welfare function' which is the product of average income and one minus inequality. We used the Gini as the inequality measure. The results are displayed in table 4c. We fist show the change in average disposable incomes per capita (in euros per year). In the baseline, Flanders is 3.9% richer than the Belgian average, while Wallonia and Brussels are respectively 6.3 and 2.2 % poorer. Removing the interregional transfers of course widens this discrepancy substantially. Flanders is now nearly 10% above the Belgian average, while Wallonia falls more than 15% below the Belgian average. As explained above the changes in inequality within the regions depend on the scenario. In the bottom two rows we then combine the sharp change in average disposable income in the regions (and in Belgium) with the changes in inequality. Looking at the Belgian column, one observes that in neither of the two scenarios, the substantial loss in welfare in Wallonia and Brussels is compensated fully by the increase in welfare in Flanders. In both scenario's there is a loss of welfare for Belgium as a whole ranging from 0.9% to 1.2%, depending on the chosen scenario within the regions to compensate the removal of the interregional transfers.

Table 4c: Welfare effects of removing the interregional transfers

	Belgium	**Flanders**	**Wallonia**	**Brussels**
Baseline disposable income (€ per year)	11 479	11 925	10 758	11 321
Baseline disposable income (BE=100)	100.0	103.9	93.7	97.8
Baseline Gini	0.263	0.248	0.259	0.355
Disposable income S1 and S2 (€ per year)	11 479	12 617	9 721	10 564
Disposable income S1 and S2 (BE=100)	100.0	109.9	84.7	92.0
Gini S1	0.270	0.253	0.244	0.357
Gini S2	0.272	0.234	0.286	0.378
Welfare S1 (Baseline=100)	99.1	105.1	92.2	93.8
Welfare S2 (Baseline=100)	98.8	107.8	87.1	90.7

Note: S1 denote simulation 1 (procents), S2 denote simulation 2 (cents)

Conclusion

This Appendix had the twofold objective of (a) showing that a (nuanced) theoretical position is necessary for a meaningful interpretation of the data, and (b) to highlight the advantages and possibilities of working with micro data to address this question.

The Belgian data are an almost perfect example of Simpson's paradox: taking only region into account, there is a transfer from Flanders to the other regions. Taking equivalent disposable income into account, there is a transfer towards Flanders in every quintile but the fourth. These two extremes are merely to illustrate the need of social and economic theory in carefully interpreting and structuring the data.

Micro data and microsimulation models, when carefully implemented and checked with available macro-economic figures, can contribute to hypothesizing about explanations for the observed transfers.

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