

# Nations, Conglomerates, and Empires

## The Tradeoff between Income and Sovereignty

*Branko Milanovic*

Why after the breakup of such multinational states as the Soviet Union, Czechoslovakia, and Yugoslavia — whose republics justified their decision by claiming that they wanted to regain their sovereignty — did the new states express strong desire to join the European Union, thus dissipating the very sovereignty they had sought?



## Summary findings

One of the apparent inconsistencies in the breakup of such multinational states as the Soviet Union, Czechoslovakia, and Yugoslavia is that while the republics justified their decision by claiming that they wanted to increase ("regain") their sovereignty, the new states' strong desire to join the European Union shows their intention to dissipate the very same newly acquired sovereignty. How can the two desires be reconciled? Why would someone go through the ordeal of secession in order to quickly get rid of the very sovereignty that justified the secession? Or was sovereignty not the real (or sole) goal behind the secessionist drive?

Milanovic explains that full sovereignty (like the individual's "full freedom") is neither reachable for most countries nor desirable — because greater sovereignty is often traded for reduced income. Economic sovereignty is normally limited in key areas: exchange rate policy (by rules stemming from IMF membership, for example, or participation in regional currency systems), trade policy (by GATT rules, for example), labor and banking regulations, accounting practices, and so on.

There is a tradeoff curve between sovereignty and income. Countries do not choose maximum sovereignty, but an optimal one. They choose a combination of income and sovereignty that allows them to maximize welfare. But that combination is not the same for all countries.

- Larger countries (measured by their GDP) have the "luxury" of choosing more sovereignty per unit of income, simply because for them domestic markets are more important than for small countries.

- Countries with abundant natural resources or very skilled labor (that is, with high per capita human and

natural wealth) tend to be more integrated internationally. For them, economic sovereignty is less important because they need to export their resources and the returns to their labor increase with international integration.

- More democratic countries also tend to be better integrated because in democracies the power of the political elite — who may often prefer not to be bound by international rules — is lessened.

Testing these hypotheses on the 1993–94 data for 165 countries, Milanovic finds a statistically strong impact of per capita wealth and democracy on international integration. The effect of country size is weaker.

Milanovic discusses why different countries may wish to form conglomerates, defined as looser or tighter unions that imply shared sovereignty and redistribution from richer to poorer members. He finds that the willingness to join conglomerates (free trade associations) is greater for countries that are relatively poor (compared with the average income of the "target" conglomerate), and for democracies. The country size effect is U-shaped: the willingness to join conglomerates is high for small countries (whose sovereignty might actually increase in a conglomerate because of the conglomerate's sovereignty-sharing features) and for very large countries that may expect to play the role of "core" states.

The key gain from independence for the relatively rich republics that were former members of the Communist conglomerates was not economic sovereignty in itself but the ability to switch from a poor to a rich conglomerate.

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**NATIONS, CONGLOMERATES AND EMPIRES:  
TRADE-OFF BETWEEN INCOME AND SOVEREIGNTY**

Branko Milanovic <sup>1</sup>

[There are three ways in which countries grow. First, by] "forming a league consisting of several republics in which no one of them had preference, authority or rank above the others; and in which, when other cities were acquired, they made them constituent members in the same way as the Swiss act in our time, and as in Greece the Achaeans and the Aetolians acted in olden times....The reason why such a republic cannot expand is that its members are distinct...which makes it difficult for them to consult and to make decisions. It means that they are less keen on acquiring dominion, for, since many communities share in that dominion, they do not appreciate further acquisition in the same way as does a single republic which hopes to enjoy the whole. Furthermore, a league is governed by a council, which must needs be slower in arriving at any decision....The second method consists in forming alliances in which you reserve to yourself the headship, the seat in which the central authority resides, and the right of initiative. This was the method adopted by the Romans. The third method is to make other states subjects instead of allies, as the Spartans and the Athenians did...[This method] is quite useless, as can be seen in the case of the two republics just mentioned. For they came to disaster for the simple reason that they had acquired a dominion they could not hold. For to undertake the responsibility of governing cities by force...is a difficult and tiresome business".

Niccolo Machiavelli, *The Discourses*..., Chapter II.4, pp. 283-6; Pinguins edition.

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### 1. Introduction

One of the apparent inconsistencies in the break-up of the multinational states like the Soviet Union, Czechoslovakia, and Yugoslavia is that while secessionist republics justified their decision by claiming that they wanted to increase ("regain") their sovereignty, the new states' strong desire to join the European Union shows the intention to dissipate the very same newly acquired sovereignty.<sup>2</sup> How are the two things to be reconciled? Why would someone go through the ordeal of secession in order to quickly get rid of the very object that justified the secession? Or was not sovereignty the real or the sole goal behind the secessionist drive?

The objective of the paper is to explain this apparent inconsistency. In order to do so, we start with some general observations on the relationship between income and sovereignty that are supposed to apply to all countries.

We start by defining "income" and "sovereignty". "Income" is easy to define: it is GDP per capita.<sup>3</sup> "Sovereignty" requires some explanation. One can visualize sovereignty as varying on a scale from 0 to 1. Zero would mean that the country can take no decision of its own. This is the example, relatively rare nowadays, of colonies where all economic decisions are taken by the metropolis. 1 represents full, unrestricted sovereignty where a country can pursue any policy it likes. It is not held in check by any international agreements, rules, or interests of other states. It is the state of full freedom for domestic policy makers. It is important to emphasize that full sovereignty —not unlike the individual's "full freedom"— is neither a reachable position for most countries, nor a desirable one (because, as will be argued below, greater sovereignty is often traded for smaller income). In addition, the world populated by states that would enjoy unrestricted sovereignty would not be necessarily a good place. But the point of full sovereignty is a useful methodological device.

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<sup>2</sup>The simultaneity of national break-up and international integration has attracted the attention of economists. Alesina, Perotti and Spolaore (1995) and Alesina and Spolaore (1995) address the issue of optimal country size as the trade-off between lower cost of public good provision and loss of "preference homogeneity." Bolton and Roland (1995) regard the decision to secede to result from balance between the gains from the ability to select an optimal tax rate (closer to the regional, vs. federal, preferences) and costs due to loss of free trade.

<sup>3</sup>In the rest of the analysis, the term income, unless otherwise specified, will always mean "income per capita."

Normally, however, country's sovereignty in economic decision-making is limited. This is the case for almost all countries in the world. These constraints may take many forms. Most common constraints are international agreements through memberships in various organizations. Others are bilateral arrangements, like voluntary export restraints. But the important point is that economic sovereignty is normally limited in a number of key areas: exchange rate policy, trade policy, labor and banking regulations, accounting practices etc. To give a few examples. Country's exchange rate policy will follow the rules stemming from the IMF membership or participation in regional currency systems, like EMS or CFA. Some countries entirely lack sovereignty over the exchange rate policy if they use other country's currency (Panama) or have their own currency pegged to the DM or the dollar.<sup>4</sup> In trade policies, rules that GATT and now WTO members must follow are also limiting factors (agricultural subsidies, intellectual property rights, most favored nation status etc). Memberships in various organizations further limit national economic sovereignty: the countries are obliged to permit free trade unions, to ban child or slave labor, to follow minimum health and safety standards, even to observe limits on working hours.<sup>5</sup> In banking, they are constrained through (e.g.) the Basel agreement on capital adequacy ratios, in environmental matters by international environmental convention. Another recent example is Energy Charter Treaty signed in December 1994 by some 50 countries. According to Ruud Lubbers, "[it] lays down binding rules on the fair treatment of foreign trade, investment and transit; and clear obligations in the field of competition and the environment. It provides for binding international arbitration to settle disputes between governments and, on investments matters, between governments and foreign investors."<sup>6</sup>

Members of regional economic organization have, of course, even more stringent restrictions on economic decision-making. Membership in the European Union imposes a number of restrictions on its members: from limits to state subsidies to exact working hours of retail stores and common classification of goods. As Krugman (1991, p.19) opines: "Europe's 1992

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<sup>4</sup>European single currency is opposed (e.g. in the UK and Germany) on the grounds of loss of sovereignty.

<sup>5</sup>Wallace (1993, p.375), for example, writes: "Few would have appreciated...on [the UK] entering the [European] Community that the whole context of domestic legislation on women's working hours, conditions, even ages of retirement would be progressively transformed by the spread of Community jurisdiction."

<sup>6</sup>See *The Economist*, May 27, 1995, p.8.

is not so much a trade agreement as an agreement to coordinate policies that have historically been regarded as domestic." By 1999, if a EU country wants to participate in a single-currency area, it would have to meet targets on inflation, budget deficit, public debt-to-GDP ratio, interest rate and currency stability. The European Union recently threatened Spain, Portugal and Greece with cuts in funding unless they reduce their budget deficits.<sup>7</sup>

The rest of the paper is organized as follows. In Section 2, I derive the equilibrium ratio between sovereignty and income for a single country. The derivation proceeds by two steps. First, I derive the trade-off curve between sovereignty and income. It gives all the combinations of sovereignty and income that a country can theoretically choose. Second, I derive country's indifference curve showing what combinations of income and sovereignty are of equal value to a country. Country's actual sovereignty and income will then obtain at the point of where the trade-off curve touches the highest indifference curve. In Section 3, I discuss why different countries may wish to form conglomerates (i.e. looser or tighter unions), and what it would imply for their choice of equilibrium sovereignty and income. In Section 4, I discuss the conditions under which such conglomerates might become unstable. This point leads us thus straight back to the initial question posed in the opening sentence of the paper. Section 5 lists some implications of the hypothesis considered here. Section 6 concludes the paper.

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<sup>7</sup>See Reuters, July 10, 1995. Cut in funding is acceptable under the Maastricht treaty provisions.

## 2. Equilibrium of a single country

### Deriving the trade-off between income and sovereignty

Country's per capita income ( $y$ ) can be, in a standard fashion, viewed as the outcome of its physical and human capital stock per capita ( $k$ ), natural resources per capita ( $r$ ), and —less often used— openness of the economy ( $o$ ).<sup>8</sup> The idea is that a more open economy allows the country to enjoy economies of scale, to specialize in the production of goods where it enjoys comparative advantage, and thus, by better specialization to use more efficiently its capital and natural resources.<sup>9</sup> In addition, and sometimes as a substitute to openness, a large domestic market can have a similar impact on the efficiency of use of capital. *Given* the level of openness, a country with a large domestic market ( $D$ ) will have an advantage: larger  $D$  will enable it to take advantage of economies of scale. We can thus write:

$$y = f(k, r, o, D) = f[k(o, D), r(o, D)] \quad (1)$$

where we show that the value of capital and natural resources depends on the openness of the economy and the size of the domestic market.

Combining for simplicity both types of capital (physical and human) and natural resources under a single term endowments or "capital" ( $k$ ) we obtain:

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<sup>8</sup>See, however, Sachs and Warner (1995). There may be different definitions of openness (e.g. exports and imports divided by GDP). Following Sachs and Warner (1995, p.22-4), we may define as open an economy where the five following conditions hold: (1) non-tariff barriers cover less than 40 percent of trade, (2) average tariff rate is less than 40 percent, (3) black market exchange rate deviates from the official by less than 20 percent, (4) country is non-socialist, (5) there is no state monopoly on exports.

<sup>9</sup>Krugman (1991, p.8) writes: "A...gain from regional free trade, which is very important in practice, comes from the increased size and hence both productive efficiency and competitiveness of oligopolistic markets subject to economies of scale." Pissarides (1995) argues that trade liberalization raises the returns to human capital.



$$y = f [k(o,D)] \quad (2)$$

where  $f_k > 0$  (positive marginal product of "capital"),<sup>10</sup>  $k_o > 0$  (rising value of capital as openness increases), and  $k_D > 0$  (rising value of capital as the domestic market expands).<sup>11</sup>

Let now sovereignty ( $s$ ) be defined as a decreasing function of the country's openness (equation 3), on the assumption that greater openness, i.e. integration in world economy, requires that the country give up some of its national policy and legal prerogatives and substitute international rules to domestic regulations. For example, if a country decides to have full sovereignty, this means that it must opt out of all (or most of) binding international arrangements. Its domestic economic policy will indeed be entirely free: it may subsidize domestic produces freely; conduct any exchange or interest rate policy it likes; impose any level of tariffs or quantitative barriers; suppress trade unions; not care about environmental regulations etc. Every movement toward greater integration will be, generally, accompanied by some loss of country's policy-making, regulatory or legal sovereignty (this point is discussed in more detail below).

$$s = \gamma (o) \quad (3)$$

where  $\gamma < 0$ .

Substituting (3) in (2), we obtain:

$$y - f [k (\gamma^{-1}(s), D)] = 0 \quad (4)$$

By total differentiation of (4) with respect to  $y$  and  $s$ , we obtain

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<sup>10</sup>In the rest of the text, "capital" will be written without inverted commas. Unless specified differently, terms capital and endowments are used interchangeably.

<sup>11</sup>However, as openness increases, the importance of the domestic market for the value of capital declines. Thus  $k_{Do} < 0$  with  $k_D = 0$  at the maximum openness ( $o = o_{max}$ ). In other words, if a country is fully open, the size of its domestic market does not matter (*vide* Hong Kong).

$$dy = f_k k_s ds$$

where  $k_s < 0$  is the derivative of the value of "capital" with respect to  $s$ . Then

$$\frac{dy}{ds} = f_k k_s < 0 \quad (5)$$

We thus establish that the relationship between sovereignty and per capita income is negative. There is a trade-off between the two: increased sovereignty equals less "openness" which in turn implies lower value of "capital" and lower per capita income.

The shape of the trade-off curve will depend on the sign of (6)

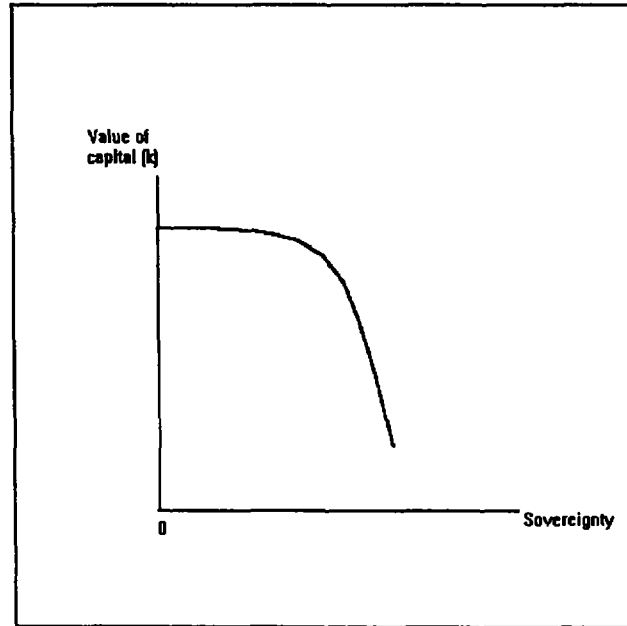
$$\frac{d^2y}{ds^2} = (f_{ks} k_s + f_k k_{ss}) \quad (6)$$

which will depend on the signs of  $f_{ks}$  and  $k_{ss}$  (we know the signs of the other two derivatives). Consider first  $f_{ks}$ . The marginal product of capital will be a decreasing function of  $s$  (see Figure 1, panel a).  $k_{ss}$  is also likely to be negative. Figure 1 shows that the value of capital (on the vertical axis) may be unaffected by some (small) increases in  $s$ ; after a certain point, however, it begins to decline fast. The relationship is concave and  $k_{ss} < 0$ . Under this assumption small increases in  $s$ , from the position of full openness, may not matter much, but later movements toward autarky become more and more expensive in terms of loss of value of capital and income.<sup>12</sup> Since in the absolute value  $f_k$  is likely to be the largest term in (6), the relation would most likely be negative.

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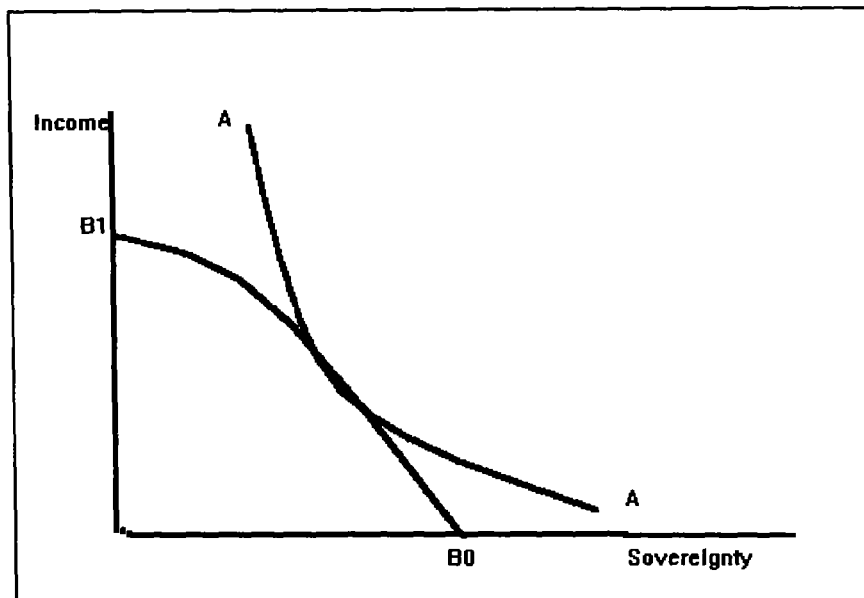
<sup>12</sup>This scenario is also consistent with a view that movements away from a very high level of autarky should result in relatively large initial gains in output.

Figure 1  
Changes in the value of capital as function of sovereignty



The negative sign of (6) implies a concave transformation curve of sovereignty into income (curve  $B_0B_1$  curve in Figure 2) and thus decreasing returns to openness. As the country moves away from the point autarky  $B_0$  in Figure 2, where  $y=0$  can be thought of as the subsistence income, marginal income gains due to integration into the world will, at first, be very high. The marginal gains will gradually decrease as the country selects lower  $s$ 's.

Figure 2  
Income and sovereignty: trade-off and indifference curves



We have derived the trade-off curve on the assumption that  $D$  is given. Consider now how the trade-off curve will be affected by an increase in  $D$ . The equation (4) becomes

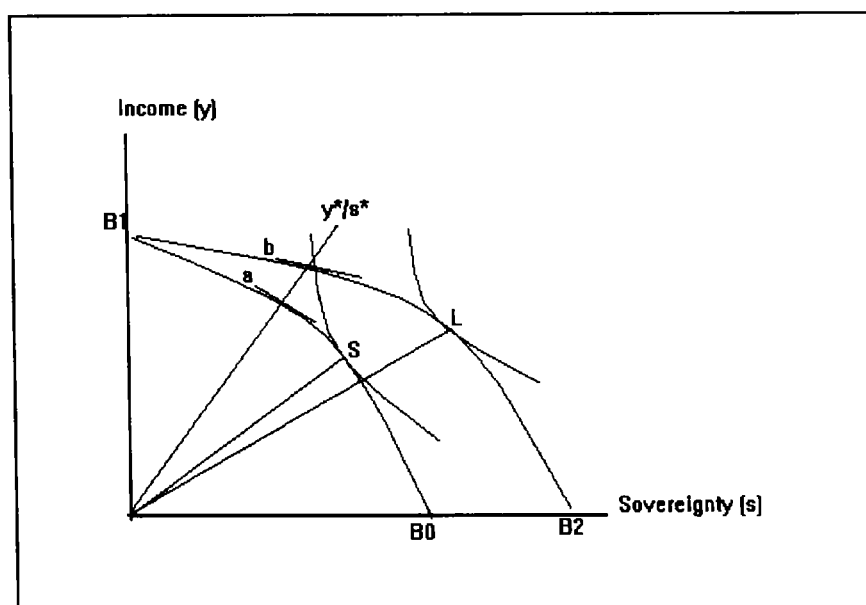
$$y - f[\bar{k}(\gamma^{-1}(\bar{s}), D)] = 0$$

where bars over  $s$  and  $k$  denote that they are given. Since  $k_D > 0$  and  $f_k > 0$ , an increase in  $D$  will increase  $y$ , i.e. expand the trade-off curve outwards for a given  $s$ . This means that, for a given  $s$ , a country with a larger domestic market (e.g. the US) will be able to achieve a higher level of income per capita than a country with a smaller domestic market (e.g. Canada). The outward shift is not uniform though. Since  $k_{Ds} > 0$  (in virtue of  $k_{D0} < 0$ ; see footnote 10) the curve expands more for higher values of  $s$ : the trade-off curve shifts from  $B_0B_1$  to  $B_2B_1$  as in Figure 3. This means that at low levels of openness the domestic market is more important than when openness is high. A relatively autarkic large economy will be better off than an equally autarkic small economy. This is why socialism in one country made some sense for the Soviet Union, but not for Albania. In the other polar case, of full integration in the world system, there is no reason to expect that per capita incomes of a larger and a smaller country will be different (given

the same endowments). Thus both curves will intersect the vertical axis at  $B_1$  (see Figure 3).

Now, this type of outward shift implies that the *slope* of the trade-off curve for a given  $y/s$  ratio is less for a larger country (compare the slopes  $a$  and  $b$  at  $y^*/s^*$ ). In other words, marginal income gains from integration (or marginal income losses from greater sovereignty) will be smaller for a larger country.

Figure 3  
Trade-off curves for large and small countries



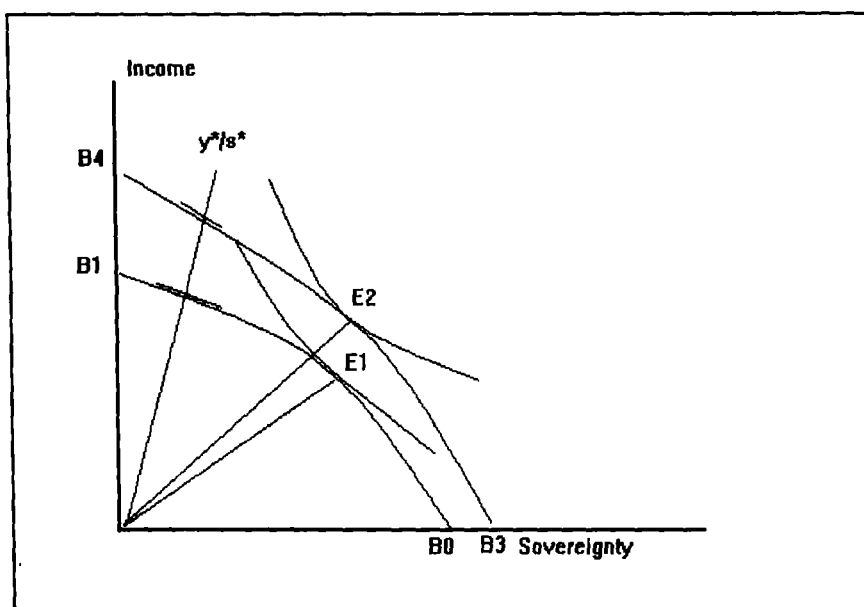
Finally, consider changing endowments per person (while keeping  $D$  and  $s$  constant). From equation (4), it directly follows that an increase in  $k$  will raise income per person, and the curve will expand outwardly (see Figure 4). But again the expansion of the trade-off curve will not be uniform. As openness increases, the marginal product of capital not only rises,<sup>13</sup> but rises faster. This can be explained by the complementarity that exists between integration and endowments (in particular, between the integration, and technical progress and human capital which form the key components of  $k$ ). For example, if a country has abundant natural resources or educated labor, it will be better-off than a country without natural resources or with low

<sup>13</sup>We saw this before:  $f_{kz} < 0$ .

education level, even if both choose full sovereignty. But the difference in income will increase as they integrate into the world economy: a country with good endowments will gain much more from integration than a country with poor endowments.<sup>14</sup> Thus,  $B_3 - B_0$  will be less than  $B_4 - B_1$  (see Figure 4).

The implication of the uneven expansion of the curve is that the slope of the endowment-rich country's trade-off curve will be, for a given  $y/s$  ratio, greater than the slope of the endowment-poor country. This means that the marginal income gains of integration (or the marginal costs of sovereignty) are greater for a country with greater endowments.

Figure 4  
Trade-off curve as endowments increase



We have thus completed the derivation of the trade-off curve between sovereignty and income. It shows the combinations of  $s$  and  $y$  that are available to a country given its domestic market size and endowments. But the issue is: What point on this curve will a country choose? We move to the political process that guides this choice, i.e. to the derivation of the indifference curves in the  $s$ - $y$  space.

<sup>14</sup>The oil-rich Iraq may be worse-off under compulsory autarky than Serbia, but, once sanctions are lifted, its gain from integration will be much greater.

### Deriving the indifference curve

Both sovereignty and income can be thought of "goods", in the sense that citizens and politicians desire both of more. That sovereignty and income are both "goods" can be justified in two ways, depending on whether we take the perspective of politicians or of a representative citizen. From the point of view of economic decision-makers or politicians, sovereignty is a "good" because it gives them greater freedom of decision-making, that is greater influence and power. It gives policy-makers scope for self-aggrandizement as well as for rent-seeking and bribery.<sup>15</sup> Increased GDP per capita is an objective for policy-makers only in so far as it enhances their chances to remain in power. This is true for both democratic or non-democratic regimes. Now, from an ordinary individual's point of view, the justification is different. That his welfare would be greater if average income per capita is higher, is plausible. But the question can be asked: Why would an individual's utility depend on his/her country's economic sovereignty? Sovereignty may be regarded as a "good" by the population because of the value attached to national pride.<sup>16</sup> However, as before, we can expect that the politicians' preference for sovereignty will be greater (at a given level of income) than the population's.

People's welfare is greater if their country is more sovereign (for a given level of income), and they have a greater income (for a given level of sovereignty). Also, the less the population has of either sovereignty ( $s$ ) or income ( $y$ ), the more will it value it at the margin.

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<sup>15</sup>This, I think, is true regardless of how corrupt or "honest" civil servants are. Surely, incorruptible civil servants will not accept direct bribes. But the absence of externally binding rules will give them greater power than they would have otherwise. For example, if tariff rates are not set through some international agreement, different interest groups will vie with each other over them, as they did ferociously during the inter-War years in Europe and the US. This will, by definition, increase the power of policy makers—even if we assume that they thereby gain nothing in terms of income (i.e. corruption is excluded). Setting external rules is a way to limit the power of bureaucracy: witness the balanced budget amendment in the US, and monetarists' insistence on monetary policy rules.

<sup>16</sup>A friend once told me what a great boost to national pride of the Chinese was the nationalization effected by the Communists in 1949. Many people indeed gained as foreign technicians departed and the Chinese took their positions. But even those who did not gain directly, felt proud that the Chinese were able to run the factories as well as foreigners—after a long period of national feeling of inferiority. A similar feeling was present in other countries: Egypt and India in the 1950's, Cuba in the 1960's etc. In a poll, a week before the referendum on independence in Quebec, 77 percent of pro-independence respondents said that "'pride in being a Quebecker' influenced their decision" (*The Financial Times*, October 23, 1995, p. 5).

Thus we get a standard indifference curve (curve AA in Figure 2) showing different combinations of sovereignty and income which yield an equal welfare.

However, the rates of substitution between income and sovereignty for policy-makers and the population, as the above discussion makes clear, differ. Since the likelihood to benefit from sovereignty is greater for the people who hold power than for those who have none, we posit that, at every  $y/s$  ratio along the indifference curve AA, the rate of substitution of income for sovereignty is greater (the curve is steeper) the higher the level of political power one has. For those with no political power and presumably with nothing to gain from greater sovereignty, the AA curve would become a straight line: only per capita income matters.<sup>17</sup> For the top level politicians, average per capita welfare of the population is a constraint that they cannot ignore if they want to stay in power, but the real objective is maximization of their own power and welfare which goes hand in hand with increased economic sovereignty, that is economic policy autonomy.

Now, if we rank all individuals according to their political importance, in the same way that we rank them according to income in income distribution curves, and let them vote on sovereignty, the more concentrated the political power, the more to the left will be the median voter,<sup>18</sup> and the flatter the selected indifference curve.<sup>19</sup> But, in authoritarian and dictatorial regimes, those with low political power will, by definition, be excluded from "voting." Thus, despite the skewness of political power, the selected indifference curve will be—because of the truncation of the voting population—relatively steep. That is, the median "voter" in authoritarian regimes will want a relatively high sovereignty compared with democracies. We would therefore expect that authoritarianism and sovereignty will be positively related.<sup>20</sup>

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<sup>17</sup>Obviously, under the assumption that the individual shares in that higher average per capita income.

<sup>18</sup>Since preference for sovereignty increases uniformly with the level of power, the preferences are single-peaked, and the median voter determines the outcome; or said differently, individual preferences for sovereignty can be ranked by their political power.

<sup>19</sup>Obviously, the mechanism is similar to the choice of lower tax rate in more income unequal distribution with full franchise (see, among others, Alesina and Rodrik 1991, Persson and Tabellini 1994, Perotti 1992).

<sup>20</sup>Thus Stalin, Hitler or Mao could afford to select high  $s$ , but not so Mitterrand or Major.



Full-franchise democratic regimes will display flatter indifference curve, which with a given trade-off curve, implies that they would choose a higher equilibrium  $y/s$  ratio. However, the distribution of political power among the full-franchise regimes is not always the same. We can expect that in regimes where more political power belongs to different pressure groups that vie for various policies, and where more people are involved in the political process,<sup>21</sup> (i.e. where the representative rather than direct democracy provides a better approximation of the actual political process), the median voter's indifference curve would be steeper: he/she has more to gain from sovereignty than an ordinary voter with no political power. We can conclude that —with a given trade-off curve— the highest  $y/s$  will be selected by full-franchise democratic regimes with little lobbying or corporatist elements; as power of different organized groups increases, the optimal  $y/s$  ratio will decrease. Finally, authoritarian regimes or dictatorships will select an even lower  $y/s$  ratio.

Formalizing the discussion so far, we can write:

- At a given point in time, a country does a constrained maximization

$$\max_{y,s} U(y,s) + \lambda [y - f(s, \bar{k}, \bar{D})]$$

where  $U = U(y,s)$  is a welfare function,  $y = f(s, \bar{k}, \bar{D})$  depicts the trade-off curve with given  $\bar{k}$  and  $\bar{D}$ , and  $\lambda$  gives the marginal welfare gain from the relaxation of the constraint (via growth of the domestic market, or via technological progress which increases  $\bar{k}$ ).

At the equilibrium, the relation (7) will hold:

$$R\left(\frac{y}{s}, \bar{D}, \bar{k}\right) = \frac{U_s}{U_y} \quad (7)$$

i.e. the slope of the trade-off curve will be equal to the marginal rate of substitution between sovereignty and income (and  $U_s = \delta U / \delta s$  and  $U_y = \delta U / \delta y$ ).

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<sup>21</sup>I assume that for a person to become involved in the political process, he/she must become a member of an organized group.

● Assuming that preferences are homothetic and taking  $k$  as given, a larger country's equilibrium will obtain for a lower  $y/s$  ratio (see Figure 3). A larger country's equilibrium will always take place at a greater  $s$ , but not necessarily lower  $y$  because its trade-off curve expands outwards (compare points L for a large, and S for a small country in Figure 3). In other words, a larger country can achieve a higher income *and* greater sovereignty.

● As  $k$  increases (with a given  $D$ ) and preferences are homothetic, the equilibrium takes place for a higher  $y/s$  ratio (compare points  $E_2$  and  $E_1$  in Figure 4). While income must necessarily be greater in the new equilibrium, sovereignty may go either way, depending on how the trade-off curve expands.

The discussion so far can be encapsulated in the four following propositions.

Proposition 1: Negatively sloped and concave trade-off between income and sovereignty.

With technological and capital endowments, and the size of the domestic market given, sovereignty and per capita income are negatively related. A country will experience diminishing income gains from integration (or increasing income costs of sovereignty).

Proposition 2: The size-effect. Larger countries (=larger domestic market) can reach a higher per capita income for a given level of sovereignty and endowment (outward shift of the trade-off curve). Their marginal income gains from integration will be smaller (less steep trade-off curve). If preferences are homothetic, larger countries' equilibrium must obtain for a higher level of sovereignty.

Proposition 3: Increasing interdependency. As endowments increase, marginal income gains from integration increase. In other words, costs of sovereignty become greater as countries develop technologically. Countries with a higher  $k$  will select, holding everything else the same, higher  $y/s$  ratios.

Proposition 4: Democracy and sovereignty. More democratic countries will tend to choose lower levels of sovereignty because the population generally values sovereignty less than policy-makers. Conversely, if politicians are more autonomous, they would be able to choose (impose?) higher sovereignty.

In order to test empirically the relationship, we can write the ratio between the equilibrium sovereignty ( $s^*$ ) and equilibrium income ( $y^*$ ) as a decreasing function of endowments ( $k$ ) and democracy ( $DEM$ ) and an increasing function of country's domestic market ( $D$ ).  $D$  and  $k$  determine the place and the shape of the trade-off curve;  $DEM$ , the shape of the indifference curve.

$$\frac{s^*}{y^*} = B_0 + B_1 k + B_2 D + B_3 DEM \quad (8)$$

where  $B_1 < 0$ ,  $B_2 > 0$  and  $B_3 < 0$ . We directly estimate relation (8) on the 1993-94 cross-section of 165 countries which is practically all the countries in the world except those that were affected by civil wars and were not functioning as "normal" states (all the republics of the former Yugoslavia, Lebanon, Burundi, Afghanistan, Liberia, and Somalia). The variables (whose unweighted means, medians, and standard deviations are shown in Table 1) are defined as follows.<sup>22</sup>  $y$  is GDP per capita in 1990 international prices (the latest year for which the International comparison project data are available).  $k$  is the World Bank estimate of countries' per capita wealth in 1990 US\$, taking into account the value of human capital, produced assets, and natural capital. This is the first ever estimate of this kind. It attempts to take into accounts all forms of produced and non-produced wealth.<sup>23</sup> To give the reader an idea of the range of estimates, the unweighted mean per capita stock of wealth is estimated at \$86,000 and is composed of 64 percent of human capital, 16 percent of produced capital and 20 percent of natural capital.<sup>24</sup> The richest (per capita) countries are Australia and Canada with respectively \$835,000 and \$704,000; the poorest Ethiopia and Nepal with respectively \$1400 and \$1600.  $DEM$  is an estimate of political freedom as calculated by *Freedom House*.<sup>25</sup> Its values range from 1 (fully observed political rights) to 7 (entire absence of political rights). Domestic market,  $D$ , is obtained as total GDP expressed in 1990 international prices minus net exports of

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<sup>22</sup>All data are available from the author on request.

<sup>23</sup>The results are reported in Serageldin (1995, Annex 1).

<sup>24</sup>The mean per capita wealth in our sample is somewhat higher: \$ 103,000.

<sup>25</sup>Reported in Freedom House (1994).

merchandise and non-factor services.<sup>26</sup>

Sovereignty ( $s$ ) is, of course, the most difficult variable to measure. I measure it as its reverse: the extent to which domestic economic policy is constrained due to membership in various international organizations and arrangements. The memberships are mostly memberships in trade organizations and pacts (e.g. WTO, Mercosur, CEFTA); agreements are to follow exchange rate rules: to maintain a convertible currency, or to peg it to a foreign currency etc.

If constraints stemming from membership in an international organization or arrangement cover a wide array of policies or are very binding on a key economic variable like the exchange rate, the membership constraint is assigned the value of 3. The only such organization is the European Union; the only foreign exchange arrangements are memberships in the CFA zone and Eastern Caribbean central bank. In the two latter cases, a country does not have an independent monetary policy because it lacks national currency.<sup>27</sup> If constraints are less binding or affect a single area like trade but no other areas, the membership is assigned the value of 2. Examples are membership in WTO or Mercosur, or maintenance of a pegged or currency board exchange rate system. Finally, being part of an organization that either has little "bite" over members' economic policies, or deals with very limited economic issues results in constraints being valued at 1. Examples include ASEAN membership or Gulf cooperation council. Of course, membership of most international organizations places hardly any real constraint on economic policy-making: viz. the UN, ILO etc. Membership in these organization therefore does not matter for economic sovereignty.

Following the just explained procedure, the estimate of how binding the membership of each organization/arrangement is for its members was made by three international trade and exchange experts, and the estimates were rounded off to the nearest integer. The sum of the membership constraints (denoted  $m$ ) is then assigned to each country in the sample. For example, the Netherlands' level of constraint is a high 9 while that of Cuba is 0. The average

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<sup>26</sup>The sources for exports and imports is mostly IMF's *International Financial Statistics*, Annual issue for 1994 and 1995; also *World Bank Atlas* 1994, 1995, 1996; World Bank's *Global Economic Prospects and Developing Countries* 1996; World Bank's *World Development Report* 1995 and 1996; World Bank's *Statistical Handbook of the Former Soviet Union* for 1994.

<sup>27</sup>Panama which uses the US dollar belongs to the same group.

level of weighted constraint is almost 4, and the standard deviation 2.3 (see Table 1). The full list of international organizations considered, and the estimates of how "tight" are their membership requirements is given in Annex 3.

Table 1. Summary statistics

	Size of domestic market ( <i>D</i> ) (\$b at 1990 international prices)	Wealth per capita ( <i>k</i> ) (\$ '000)	Political repression (reverse of <i>DEM</i> )	Constraint to economic policy making ( <i>m</i> = reverse of <i>s</i> )
Mean/median	152.2 / 17.5	103 / 33	3.6 / 3	3.88 / 4
Standard deviation	518.5	158	2.2	2.3
Simple correlation coefficients <i>a/</i>				
<i>m/y</i>	-0.07	0.32	-0.26	
Domestic market ( <i>D</i> )		0.30	-0.04	
Wealth ( <i>k</i> )			-0.46	

*a/* *y*, *D*, and *k* are expressed in natural logs.

The bottom of Table 1 shows the simple correlation coefficients between the variables. First note that the correlation coefficients between the dependent variable (membership constraints over real per capita income; *m/y*) and the RHS variables have the expected signs: *m/y* is (mildly) negatively correlated with the size of domestic market, negatively with political repression, and positively with wealth. As discussed earlier, this implies that countries with larger markets and absence of political liberties will —controlled for other factors— choose a higher sovereignty to income ratio; countries with larger wealth will, under *ceteris paribus* condition, choose a lower sovereignty to income ratio. The simple correlation coefficients between the independent variables are relatively weak, with the exception of negative correlation between per capita wealth and political repression.

The results of estimation of (8) are shown in Table 2. The dependent variable is constraints to economic policy-making over income per capita.<sup>28</sup> I experiment with two

<sup>28</sup>Note that since *m* is the reverse of *s*, the expected signs of the coefficients will be the reverse of the signs in equation (8) with the exception of *DEM* that is now also measured as its reverse.

formulations of the membership constraint. The first, given in equation 1 (Table 2), is a weighted constraint where the weight attached to each organization range from 3 to 1 as explained above. The second, in equation 2, is the unweighted sum of memberships (1=member, 0=not) in the selected organizations that do have some binding power (like the first definition it excludes organizations that have none). The coefficients in equation 1 have the predicted signs. However, lack of political freedom is not statistically significant; size of the domestic market is significant at 5 percent, and only wealth is significant at 1 percent level. The interpretation of the coefficients is as follows: doubling of e.g. per capita wealth increases the ratio between the weighted membership and (natural log of) per capita income by 0.056. More concretely, if a relatively poor country with a per capita income of \$3000 (at international prices) and binding constraints of 3, suddenly discovers oil and doubles its per capita wealth, its desired level of international integration (=constraint) will rise to 3.45 *without* any change in its per capita income or political system.<sup>29</sup> Now, since the ratio  $m/y$  will have to increase by the same amount for a given increase in wealth, it implies that counties with a higher initial per capita income will react by raising their level of  $m$  by more than the poorer countries. In other words, a given percentage windfall increase in wealth will lead to a greater loss of sovereignty for the Netherlands than for Zambia.

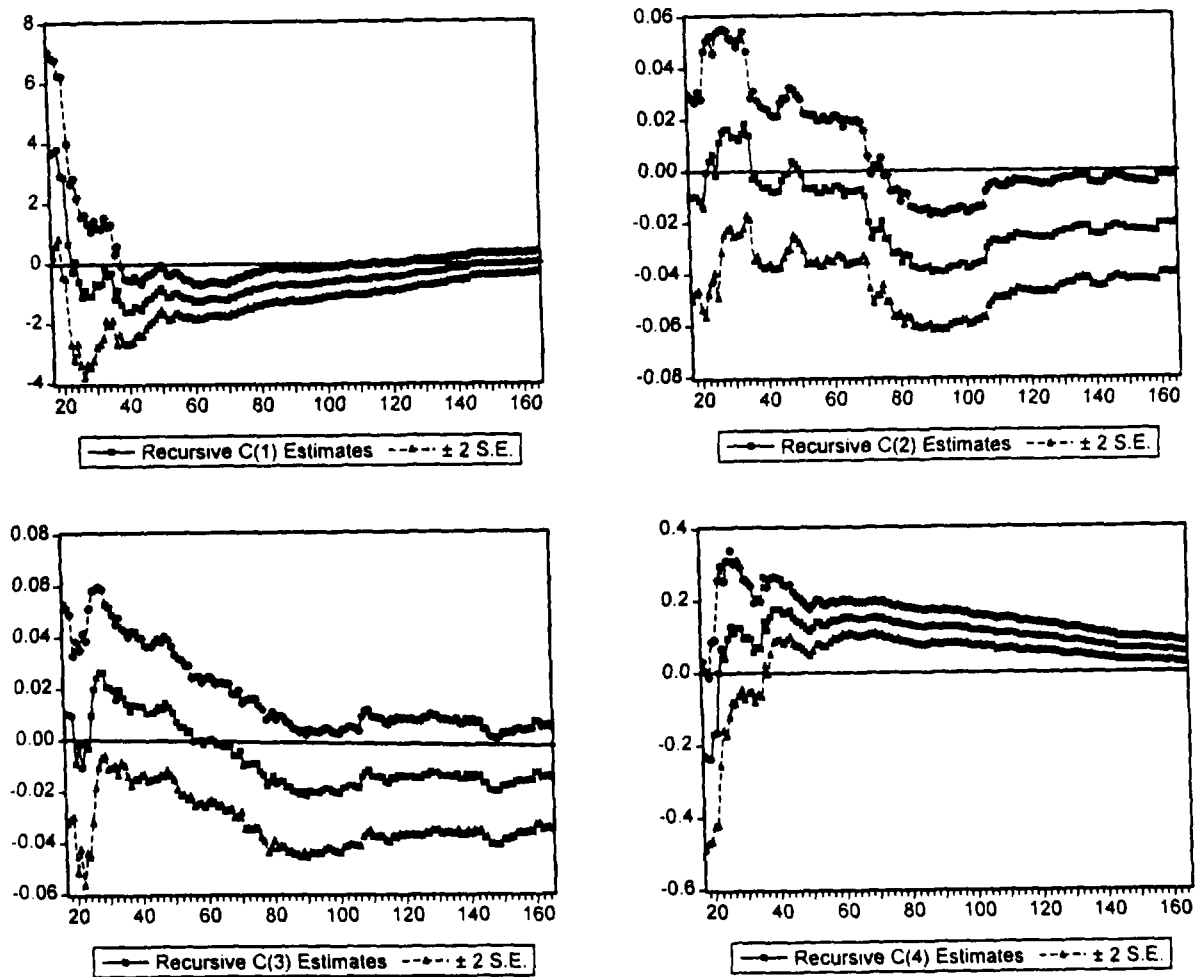
The  $R^2$  is 0.15—not a bad result given that we are estimating an equilibrium *ratio* between the cross-sectional variables. The equation is run with heteroskedasticity-corrected standard errors, and no autocorrelation between the countries, arranged in decreasing order according to their GDP per capita at 1990 international prices, is detected (results of the autocorrelation tests are thus not reported). Recursive regressions run for  $N=18$  onwards show that the coefficients are reasonably stable (see Figure 5), in particular C(4) and C(3), the coefficients associated respectively with lack of freedom and wealth.

Regression 2 has a simple sum of binding memberships on the LHS (divided by per capita income, of course). Now, wealth and lack of political freedom, with the expected sign of the coefficients, become much stronger determinants of the  $m/y$  ratio; the size of the domestic market becomes statistically insignificant.  $R^2$  more than doubles.

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<sup>29</sup>The initial  $m/\ln y$  value was 0.3747. The desired value, after doubling of wealth, will be  $0.3747 + 0.056 = 0.4307$ . This implies  $m = 3.45$  (since  $y$  is unchanged).

Figure 5  
Stability of coefficients in regression 1



**Table 2. Estimation results**

**Dependent variable:**  
**ratio of binding membership in international organizations to GDP per capita**

Regression	Constant	Size of domestic market	Political repression	Wealth per capita	R <sup>2</sup> (SE)
1	0.035 (0.202)	- 0.020 (-2.03)	-0.015 (1.40)	0.053 (3.61)	0.15 (0.25)
2	- 0.161 (-1.78)	0.004 (0.80)	-0.018 (-3.20)	0.048 (5.93)	0.36 (0.14)

*Note:* OLS regression with White's heteroskedasticity correction. t-values in parentheses.  $y$ ,  $D$ , and  $k$  in natural logs. Cross section of 165 countries; years 1993-94.

### 3. Forming conglomerates

Let us introduce now a "conglomerate". A conglomerate is defined to be a large entity composed of a number of semi-independent members. The conglomerate can be a single country, like the former Soviet Union, or the US, Canada, China or Spain, where well-defined regional entities (republics, provinces, states) have some legislative or executive power; or it can be an association of formally independent states like the European Union or the German Confederation (*Deutscher Bund* from 1815 until 1866). The conglomerate will act as a single entity when it deals with foreign states or other conglomerates. That means that it must at least be a customs union. A conglomerate will normally be also a free trade and a single currency area. The decision-making in the conglomerate can cover the span of a virtual veto power held by each member (e.g. the US under the Articles of Confederation, United Provinces of the Netherlands, German Confederation, Yugoslavia, the European Union until the mid-1980's), to different qualified majorities as in the United States<sup>30</sup> or weighted voting as currently in the European Union<sup>31</sup>, to unqualified majority, or some other formula which, of course, need not be formally

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<sup>30</sup>Three-quarters of all states and two-thirds of the Senate must agree if the constitution is to be amended. Half of the senators will have to agree to pass a law.

<sup>31</sup>Countries' voting rights range from 10 for large countries to 2 for Luxembourg. Qualified majority is about 71 percent of the voting rights. In addition, for some decisions, 10 out of 15 states must agree. Finally, for some decisions, unanimity is required. See Hosli (1990). Disputes over the qualified majority



specified. The Soviet Union, and the Soviet Union and the Eastern Europe that was within the CMEA, where many economic decisions had to be reached through some formal or informal consensus among the republican Communist party elites, are examples of the non-formalized power-sharing. The conglomerate becomes an empire when a single member of the conglomerate preponderantly determines the decisions of the conglomerate. Empires are discussed in the Annex 1.<sup>32</sup>

Two additional things define a conglomerate. Both are supposed to reduce the differences between the members. The first is the reduction in the difference in power between the members. More powerful members (measured by the size of their GDP) may have a somewhat greater power in the decision-making. However, all kinds of checks are placed that limit this power, and make it less than, if instead of a conglomerate, we dealt with a collection of independent states. In other words, a decision to enter into a conglomerate implies that a redistribution of sovereignty in favor of smaller members. This is present, for example, in the European Union where the system of weighted voting is such that the more powerful members of the conglomerate are penalized.<sup>33</sup> The U.S. Senate was "invented" (since it was indeed a novelty at the time) to give equal representation to each state and prevent the feared domination of Virginia. This was also the case in the Communist conglomerates where the party elites in lesser members states had as much or only slightly less power than the party elites of larger

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voting are currently pitting UK against Germany.

<sup>32</sup>Once a conglomerate does not imply a conglomerate forever. It can become an empire, or a nation-state. For example, the German Confederation and later the Prussia-led Northern German Confederation clearly fitted the description of a conglomerate. The creation of the Second Reich in 1870 could be viewed as a formalization of the conglomerate wherein Prussia was the core member. And, indeed, like Russia and Germany within respectively the Soviet Union and the European Union, Prussia was not the richest (per capita) member of the conglomerate (Bremen, Hanover and Oldenburg were richer). However, by now, the process of unification has probably gone far enough that it would be incorrect to describe the present-day Germany as a conglomerate despite its federal structure. It would be much more accurate to describe it as a nation-state.

<sup>33</sup>For example, Germany holds 11 percent of the vote, although its population is 22 percent, and its GDP 26 percent of European Union's; Luxembourg holds 2 percent of the vote even if its population is less than 1/10 of a percent. The elasticity of power, measured by the Shapley-Shubik index, with respect to population was 0.47 for the EU of 12 members (before the latest enlargement). The elasticity was expected to decrease to under 0.4 after the enlargement (see Widgren, 1994). In a different paper (Widgren, 1994a) Widgren argues that the smaller countries have an even greater relative impact on policy making than implied by their voting rights.

republics. After 1968, the power in Czechoslovakia was shared very equally between the Slovak and the Czech parts, although the latter had a population and income twice as large as Slovakia. Former Yugoslavia had a quota system for federal positions where each republic, regardless of its population, had an equal number of the *nomenklatura* slots.

The outcome of this process is that sovereignty of various members is "averaged out." The more powerful members dissipate some of their sovereignty in favor of the less powerful.<sup>34</sup>

The second thing that conglomerates try to equalize is the economic position of its members.<sup>35</sup> Conglomerates tend to have income-equalizing policies that transfer income from richer to poorer members. Again this is what we observe in numerous instances. The European Union transfers large amounts of resources to the poorer members. The Soviet Union and Yugoslavia had similar policies. Italy which, in some aspects, particularly now with the growth of the *Lega Norde*, resembles a conglomerate, has the same policy of transfers to the South. In the U.S., the explicit policy does not exist, but similar considerations are taken into account through the bargaining for federal funds.

Let us now look at the conglomerate's equilibrium. Suppose that a conglomerate consists of a large core country with a level of income approximately the same as that of the conglomerate as a whole (so that the core country does not subsidize poorer members), and of one small rich, and one small poor members.<sup>36</sup> This parallels the situation in the Soviet Union, Yugoslavia, or the European Union, where the small rich member can be thought of as respectively Estonia, Slovenia or Luxembourg; a small poor member as Kyrgyzstan, Macedonia and Greece, while the core member has an income close to the group average (Russia, Serbia

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<sup>34</sup>One possible reason why they might do so is suggested by Hirschleifer's (1991) "paradox of power". The weaker side (a state, in this case) receives a higher pay-off from engaging in conflictual or redistributive activity compared to the productive activity than the stronger side. The weaker side will therefore fight harder and more frequently than the richer side—unless the importance of the conflict is sufficiently high for the stronger side to shift the use of its resources towards conflict. If this happens, however, the basic cooperation on which a conglomerate is built is done away with and the conglomerate is doomed. But, in "normal life" of conglomerates, the weak will fight harder.

<sup>35</sup>Now it could well be that the two redistributions: of sovereignty and income must necessarily go together because income redistribution is not feasible without redistribution of political power.

<sup>36</sup>The small rich member has greater  $k$  than the small poor member.

and Germany).

The trade-off curves and the equilibrium positions of the members *before* they join the conglomerate are shown (by broken lines) in Figure 6. The equilibria obtain at points R (for rich), P (for poor) and C (for core) member. Note how the trade-off curves are drawn: the rich member has a high  $k$  reflected in the fact that for  $s=0$ , it can reach the highest income.<sup>37</sup> However, because its domestic market is small, the trade-off curve drops down more quickly than the trade-off curve of the core member.

The trade-off curve for the conglomerate as a whole is obtained as a weighted sum of the individual trade-off curves, where, for simplicity, we suppose that the total GDP of the core member is twice as large as the GDPs of the smaller members.<sup>38</sup> In addition, the trade-off curve expands because of the increased size of the "domestic" market (free trade area), and becomes flatter (see Proposition 2).<sup>39</sup> This expansion, which I will call "income gain from amalgamation", can be seen by comparing the two solid lines in Figure 6. The curve  $B_0B_0$  is a simple summation of the members' trade-off curves. The curve  $B_0B_1$  is the expanded curve where, in accordance with the discussion in Section II, the expansion is greater for higher levels of  $s$ . The conglomerate's equilibrium obtains at K. Assuming for the moment that members fully share both income and sovereignty, each member's equilibrium will be at K.

Consider first what happens to sovereignty in the new equilibrium. If sovereignty of all members is the same ( $s_1$  in Figure 6), smaller members will have gained in sovereignty and the

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<sup>37</sup>The opposite holds for the small poor member.

<sup>38</sup>That assumes that the small rich member must have lower population than the small poor member.

<sup>39</sup>As a noted analyst of European integration (Jacquemin, 1995, p.6) observed: "The establishment of the European community and its implementation of common policies are a partial response to [danger of lack of cooperation between the states]: competition can be preserved while at the same time economies of scale are possible and external benefits can be internalized. An illustration of the impact of the Union as a European regional grouping and of the resultant pooling of sovereignty is that the protectionist instruments of national trade policies have been replaced by shared competition rules." Another gain of amalgamation emphasized by Alesina, Perotti and Spolaore (1995) is lower per capita cost of providing public services and lower cost of insurance against unforeseeable income declines.

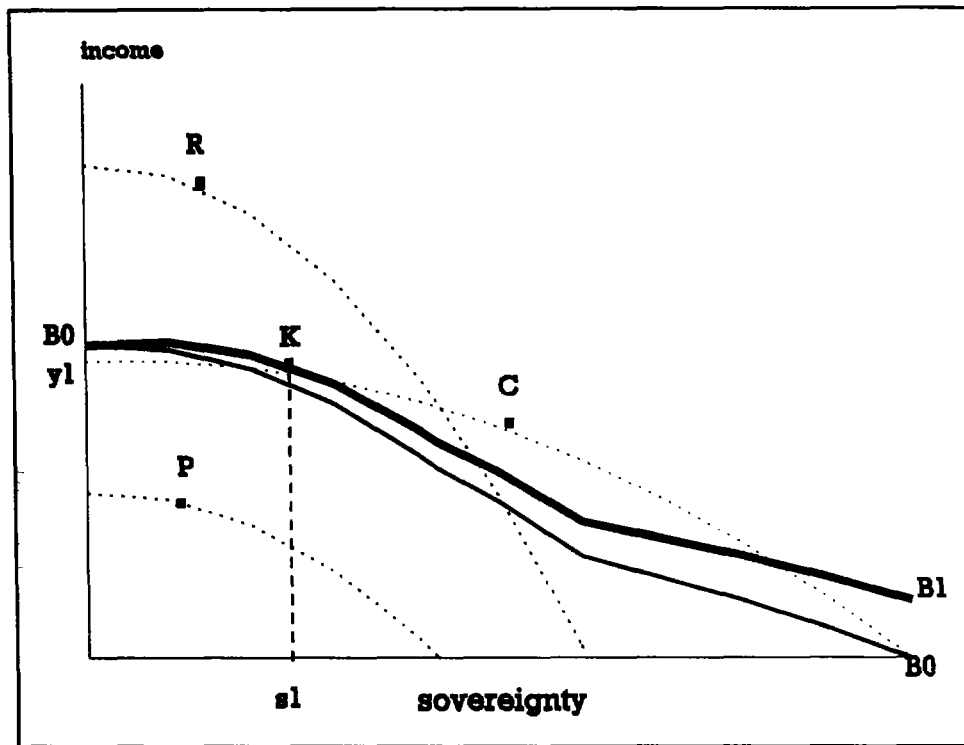
core member lost.<sup>40</sup> However, while sovereignty must be somewhat evened out, it need not be entirely equalized. It could well be that within the conglomerate there is some further redistribution of power that leaves the larger member with sovereignty  $s_1$  whereas smaller members' sovereignty is less. One can think of this in the following terms. While for all members of the conglomerate international agreements that limit sovereignty to the point  $s_1$  are binding, the conglomerate might impose additional constraints on some of its members. For instance, the conglomerate might accept some international labor legislation rules, but opt out of compulsory minimum wage legislation. Yet some members of the conglomerate might have a binding minimum wage legislation. In conclusion, no member of the conglomerate may have sovereignty greater than  $s_1$ , but some might have  $s < s_1$ . Larger members of the conglomerate, like Russia in the case of the USSR, might strongly influence economic policy of other members and reduce their  $s$ . Examples include the creation of the virtual mono-cultural economies like Uzbekistan (cotton), or "assignment" of computer-development specialization to Bulgaria within the CMEA zone.<sup>41</sup> In the extreme case, when a conglomerate "degenerates" into empire, only the core member will have sovereignty  $s_1$ , while all others' sovereignty will be close to 0 (see Annex 1).

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<sup>40</sup>The exact equilibrium will depend on the slopes of the members' trade-off curves. If rich member's slope is very steep (as shown in Figure 5), the  $B_0B_0$  curve may drop quickly. But then if the gain from amalgamation is large, the  $B_0B_1$  can substantially expand outward.

<sup>41</sup>Romania under Ceausescu selected a very high degree of sovereignty to the detriment of per capita income (going as far as letting the U.S. most-favored nation status be revoked), and refused to accept the "assignment" of food and energy producer within the CMEA. It might, however, become just that within the European Union.

Figure 6  
Equilibria of individual members and the conglomerate



As for conglomerate's equilibrium income, it will also lie somewhere between the equilibrium incomes of the individual members when they were independent (see  $y_1$  Figure 6).<sup>42</sup> Because the conglomerate, through redistribution, selects the same income for all its members, chances are that the rich small member might lose in terms of income while the poor small member will definitely gain. As mentioned above, the assumption of the same income for all members is made only for the sake of convenience. Incomes will not be equalized in real life. The point, however, is that there would be some redistribution from the richer to the poorer members. In theory, even the rich member might gain in terms of income, if the outward shift of the curve more than offsets the redistribution, or, alternatively, if redistribution is relatively small (i.e. incomes between the members are not fully equalized).

<sup>42</sup>The conglomerate's equilibrium income may, theoretically, be higher than the initial equilibrium income of each member if the trade-off curve, thanks to the gains from amalgamation, expands a lot.

What is then the outcome for the individual members? Sovereignty will expand for the smaller (both rich and poor) members who, on account of their small size, had low sovereignty before they joined the conglomerate. Income will increase for the poor small member who benefits both from larger market and redistribution; it might go either way for the core member; and will most likely decrease for the rich small member.

Why would then states decide to join (or to stay) in a conglomerate? The answer for a small poor member is obvious: it gains on both fronts, income and sovereignty.<sup>43</sup>

The core member's position is unclear because the new equilibrium might in terms of both income and sovereignty go either way. However, to offset possible losses, the core member might "collect" some "psychic or political" income since it is the leader of a collection of states. This can be called "the core member effect".<sup>44</sup> Core member's international importance increases. For example, if the West is viewed as a conglomerate, then the US can be considered the core member. Clearly, the US has, since 1941, collected some "psychic" income from being "the leader of the free world" and was willing to sacrifice pure economic gains to achieve this status (by, *inter alia*, providing an almost free defense umbrella for Western Europe and Japan).

The real difficult choice belongs to the small rich member. It would stay in the conglomerate only if the gain in sovereignty more than offsets an almost certain decline in income. The rich member is, therefore, the least stable member of the conglomerate. It will have a strong incentive to limit redistribution.<sup>45</sup> Other members will then have an incentive to accede to its demand if they wish to preserve the conglomerate intact. They might prefer to limit redistribution to the point where the rich member's income remains sufficiently large to let it

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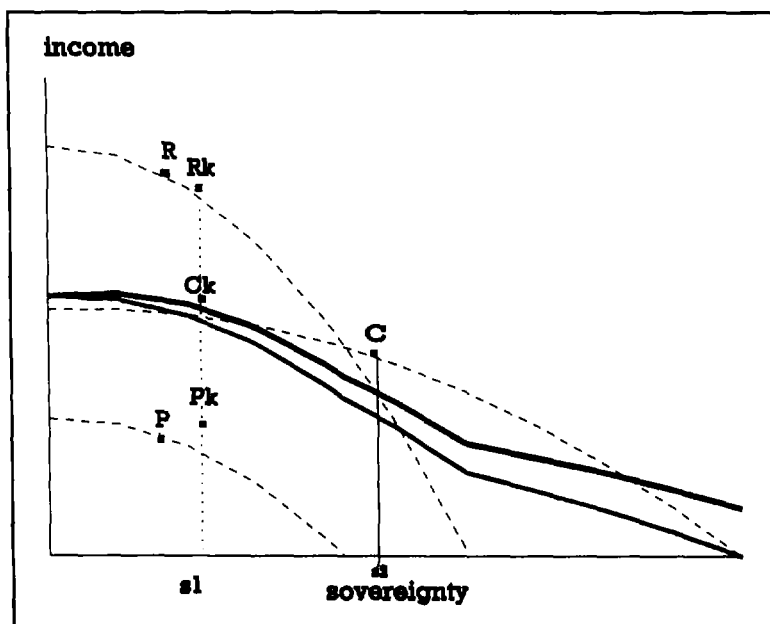
<sup>43</sup>Vaubel (1994) finds that the popularity of European integration (the share of the country's population that favors tighter integration) rises with country's received net per capita transfers and declines with the increase in its GDP per capita. Both variables are highly significant. "Popularity of the union" is measured at discrete time intervals covering the period between 1962 and 1992.

<sup>44</sup>Vaubel (1994, p.1777) finds that larger countries, measured by the population, tend to be more in favor of European integration and centralization.

<sup>45</sup>Tullock (1993, p.21) makes the same point with respect to nation-state that I make with respect to the conglomerate: "You might say that the definition of the nation-state is the area within which there is redistribution. And the strongest argument [from the US perspective] I know for not having a world government is what would happen to our incomes if we had a world government".

reach a higher indifference curve (than if independent). Smaller redistribution will not be in the interest of the poor member, but it has nowhere to go: even small redistribution combined with greater sovereignty makes it better-off in the conglomerate than independent. Figure 7 shows such a stable equilibrium. The trade-off curve is the same as in Figure 6. The equilibrium  $s_1$  is (for simplicity) equal for all members. But income is not equalized. Yet each member's new equilibrium at respectively  $P_k$ ,  $R_k$  and  $C_k$  is preferable to its pre-conglomerate equilibrium at respectively  $P$ ,  $R$  and  $C$ . Even the rich member touches now a higher indifference curve than before when it was independent.<sup>46</sup> The core member must gain some income since it loses in sovereignty.<sup>47</sup> The core member will be more easily satisfied with the new equilibrium if it is democratic because its income gain will then more easily compensate for the loss of sovereignty (its indifference curves would be fairly flat). Finally, the small poor member in Figure 7 has still moved in the NE direction, gaining both in terms of  $y$  and  $s$ .

Figure 7  
Conglomerate's stable equilibrium



<sup>46</sup>Obviously the weighted sum of new equilibrium incomes associated with  $R_k$ ,  $C_k$  and  $P_k$ , cannot be greater than the sum of incomes from Figure 5 (since Figure 6 shows only a redistribution of the conglomerate's total income). A more formal discussion of the conglomerate's equilibrium is in the Annex 2.

<sup>47</sup>Unless, of course, the "core member effect" compensates for all the losses in  $s$  and  $y$ .

Both income and sovereignty are "traded" within the conglomerate. We have already noted that the core member may command somewhat greater sovereignty than the rest. But a small rich member may also be "granted" greater sovereignty (than the average sovereignty of the conglomerate) in order to keep it in the union. Lessening redistribution and/or giving greater sovereignty consequently appear as the two instruments for keeping the potentially least stable member of the conglomerate (the small rich member) in. This is why we may expect that natural resource-rich provinces in various countries (e.g. Russia, Indonesia, China<sup>48</sup>, the Philippines) will try to strike bilateral deals with the rest of the conglomerate setting both the limits to the extent of redistribution and obtaining greater sovereignty.

We can summarize our discussion of the conglomerate in two propositions.

Proposition 5. Poor members will stay in or try to join. Poor small members of a conglomerate will not have an incentive to break away from the conglomerate.

Proposition 6. Rich members might want to leave or may not care to join. Rich small members might have an incentive to break away if, through redistribution between the members, they lose sufficient amount of income.

#### Formalizing willingness to join.

Equation (8) has defined the equilibrium ratio of sovereignty to income. Low  $s/y$  ratio, however, can be achieved in two different ways: a country may be heavily integrated in the world trade system without being a member of a conglomerate (e.g. Switzerland) or it may join a conglomerate (e.g. the Netherlands).

Thus, knowing that a country has selected a given  $s/y$  ratio does not tell us whether it is likely to have joined or not a conglomerate. We need to complement equation (8) with that

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<sup>48</sup>Rich Chinese provinces are loath to remit their portion of tax payments to the center. A prominent Chinese economist has recently (see "China 'risking collapse' from fiscal weaknesses", *The Financial Times*, June 16, 1995) compared this attitude to the situation in the former Yugoslavia before the break-up. And indeed throughout its existence Yugoslav federal authorities never succeeded in receiving corporate and wage income tax, the two largest tax sources, which remained with the republics. The same breakdown in payments occurred in the Soviet Union just before the collapse (see Bird, Ebel and Wallich, 1995, p.324).



expressing willingness to join a conglomerate. Willingness to join will be a positive function of *relative* poverty, i.e. poverty relative to the potential conglomerate a country seeks to join. For example, if the Eastern European countries had only a choice of joining Asian conglomerates, where they would not be "poor", they would most likely decline. But since the conglomerate they wish to join (the EU) is richer than they, they are eager to join.

Democratic countries will also be more likely to join because they tend (in contrast to non-democracies) to emphasize economic gains (see Proposition 4), and the economic gains from amalgamation are always positive.

Country size is ambiguous. Willingness to join may be high both for very small and very large countries. Small countries will have low equilibrium  $s$  when independent. Joining a conglomerate is likely to increase it due to conglomerate's sovereignty-sharing features. But as GDP increases and country's trade-off curve expands outwards, its equilibrium  $s$  when independent will increase, and it might then lose some  $s$  when it joins a conglomerate. The willingness to join will decrease.<sup>49</sup> However, for a very large country, becoming a core member—to which it will normally aspire—will bring some "psychic" gain of leadership. Thus, very large countries may wish to join conglomerates—indeed as core rather than as ordinary members.

Willingness to join a conglomerate ( $W$ ) for a country  $i$  can then be written:

$$W_i = B_0 + B_1 \frac{y_i}{\bar{y}} + B_2 DEM_i + \psi(GDP_i) \quad (9)$$

where  $B_1 < 0$ ,  $B_2 > 0$ ,  $y_i/\bar{y}$  is  $i$ -th country's income level relative to the "target" group, and  $\psi(GDP)$  a quadratic (U-shaped) function (willingness to join is high for both small and large GDP countries).

The most eager to join conglomerates would be poor, small, and democratic countries

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<sup>49</sup>We take economic gain or loss from joining a conglomerate as given since it does not depend on total GDP but on GDP per capita.

(e.g. Eastern Europe, Sri Lanka) where all three elements combine to make membership in conglomerates a desirable option. Large, rich and democratic countries (e.g. the US) will join conglomerates as core members. The least likely to join conglomerates would be rich non-democratic countries with intermediate size of GDP (e.g. Saudi Arabia). When independent they can maintain a relatively high  $s$ , while—if they were to join a conglomerate—they would be unable to claim the core function that normally goes to large countries only. Moreover, since they are rich, they are likely to lose income through redistribution. Large, and non-democratic countries are most likely to try to transform conglomerates into empires.<sup>50</sup> This is because their rulers value sovereignty highly. Joining a conglomerate for economic gain does not matter much to them. Joining a conglomerate even as a core member may entail some loss of sovereignty. The only interesting proposition for them is thus a conglomerate which is transformed into an empire. Otherwise, they might prefer to remain aloof from any kind of integration.

We estimate equation (9) on the same sample of 165 countries. First each country is "assigned" to its geographical group. There are eight such groups: Europe, Central Asia, South East Asia and the Pacific, Africa, Middle East, North America, Central America, and South America. The country's relative's income is expressed as the ratio of country's GDP per capita and average (unweighted) GDP per capita of the group (both at international prices). Willingness to join is a binary variable where countries that are members of the European Union<sup>51</sup>, Nafta, ASEAN, CARICOM, Mercosur, or CIS customs union are assigned a value of 1; if a country is not a member of any of the above organizations it is assigned a value of zero (there are 112 such zeros). This implicitly supposes that "willingness" to join is indeed satisfied: if a country wants to join an organization, it will (or at least it would have applied). The results of the logit regression are shown in Table 3. The signs of all the coefficients are as predicted. All but one are significant at least at 5 percent level. Democracy is particularly strongly significant: the increase in political repression of 1 Freedom House point<sup>52</sup> reduces the ratio of odds of joining vs. not joining a conglomerate by 65 percent. The average level of political repression among member countries is 2.3; among non-members, it is 4.3 (see Table 3). Also, as expected, the willingness to join is U shaped: it is the highest for countries with small and large GDPs.

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<sup>50</sup>This applies whether they are rich or poor.

<sup>51</sup>Or have officially applied to join the European Union: Malta, Cyprus, Turkey, Hungary and Poland.

<sup>52</sup>Remember that *DEM* is measured as its reverse: 1 is full political rights, 7 none.

However, the relative income does not matter. It is, in effect, slightly higher for members (1.15) than for non-members (0.94). This may be due to the fact that none of the conglomerates (free trade areas) included here except the European Union does have redistribution.

**Table 3. Estimation results**  
**Dependent variable: membership in a free trade association a/**

Constant	Relative income	Political repression	GDP b/	Squared GDP b/	Log likelihood
5.04 (1.76)	- 0.036 (-0.13)	- 0.465 (-4.32)	- 1.222 (-1.99)	0.076 (2.38)	-80.38
Average values of independent variables					
Among members	1.15	2.30	\$37.4b		
Among non-members	0.94	4.28	\$12.5b		

**Note:** Logit regression; t-values in parentheses. Cross section of 165 countries; years 1993-94. GDP and squared GDP in natural logs.

a/ One of the following organizations: European Union, Nafta, ASEAN, CARICOM, Mercosur, or CIS customs union. b/ At 1990 international prices.

#### 4. When will conglomerates become unstable?

The equilibrium analysis of the conglomerate leads us naturally to the next question: when might conglomerates become unstable? The answers are straightforward.

(1) When there is too much redistribution. This might prompt the richer members to leave.

(2) When the core member is richer than the average, so that it too begins to subsidize the poorer members. This will be particularly destabilizing because the conglomerate might survive if it loses a small rich member but is unlikely to survive the loss of its core member.

(3) A conglomerate will become particularly unstable if its small richer members can envisage shifting from the current conglomerate to a different one where they would be small poor members, i.e. where they would gain from redistribution instead of losing.

Indeed, each of these three scenarios is what we have been witnessing in the recent events in Europe. Consider the following facts. First, the most committed members to the preservation of the conglomerates that have broken up (the Soviet Union and former Yugoslavia) were the poorer members: the Central Asian republics in the USSR,<sup>53</sup> Macedonia, Bosnia, and Montenegro in Yugoslavia. Second, the rich members often expressed annoyance with the amount of transfers that they had to make to the poorer members (e.g. Slovenia, the Czech republic). Slovenia's parties explicitly campaigned for independence because of (what they perceived to be) high transfers. The same issue is the driving force of the Italian *Lega Norde* which had become the largest political party in Northern Italy. *Lega* furthermore argues for the federalization of Italy, which could ultimately pave the way for the break-up of the country. Third, the core members gradually became disenchanted with the conglomerates and effectively destroyed them (together with the small rich members). Russia became a heavy loser in terms of income, as it subsidized most of other republics.<sup>54</sup> Expressing this "core member disenchantment", now projected back to the 19th century, Solzhenitsyn (1995, p.38) writes about Alexander I empire-building: "[Alexander I] hopelessly infected with "beautiful ideas", and not seeing, if only through Austria's example, how harmful it is for the dominant nation in a state to create a multiethnic empire...demanded that Russia receive the central region of a further repartitioned Poland."

Finally, and probably most importantly, the whole process of disintegration was speeded up by the geographic proximity of a richer conglomerate (the European Union) to whose membership the small rich states of the Eastern conglomerates aspired. In the European Union they would become small poor states, and would receive subsidies. Moreover, they —probably correctly—assumed that their chances of joining the EU were greater as individual states than together with the rest of the old conglomerate. It is obviously easier for the rich conglomerate

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<sup>53</sup>Witness the insistence with which Kazakhstan's president Nuzerbaev still champions the idea of Eurasian economic union. Kazakhstan, Belarus and Kyrgyzstan have joined in a customs union with Russia. In November 1995, Uzbekistan and Tajikistan also formally agreed to join.

<sup>54</sup>See Tarr (1994), Orlowski (1995).

like the EU to accept the three Baltic countries (with a combined population less than Paris's) than the whole of the Soviet Union.

The rich conglomerates tend to attract, like a force of gravity, poorer members whether these are independent states or members of another conglomerate. In the latter case, centrifugal forces in the poorer conglomerate are set in force. For example, the Common Market in Latin America may be doomed simply because richer Latin countries may not wish to join, preferring instead to become NAFTA members. Chile is reported to be much more interested in NAFTA membership than in Mercosur.<sup>55</sup> It is very difficult to organize any type of economic co-operation among East European states: the lure of the EU is too strong. The same is true for Arab Mediterranean countries. Finally, in Asia, ASEAN had become attractive to Vietnam (which just joined), Laos and Burma.

But the rich conglomerates will have much more trouble attracting countries that are richer than the conglomerate average. Switzerland and Norway refused to join the Union (or the European Economic Area). Although they would gain from being in the Union as their trade-off curves would shift out, they could lose more from paying net subsidies to the poor members. Popularity of the Union in another two rich countries, Sweden and Denmark, is low: the electorate is evenly split between membership and non-membership.

The difference in the position of the rich and poor small members of the conglomerate leads us to answer our original question, namely the apparent inconsistency between the clamor for greater sovereignty with which some states justified their secession and their desire to dissipate that sovereignty by joining the European Union. The contradiction between the two stances is obvious from the two popular slogans at the time: "return to Europe" and "national sovereignty." The former excluded the latter.

As the analysis shows, the equilibrium sovereignty level of these states, particularly when they become democratic and the population strongly prefers high income compared to sovereignty, is bound to be small whether they are independent countries or members of a conglomerate. The key gain from independence is not sovereignty, but the ability to switch from

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<sup>55</sup>See Nancy Dunne, "Chile's patience wearing thin over Nafta" in *Financial Times*, June 13, 1995, p. 7.

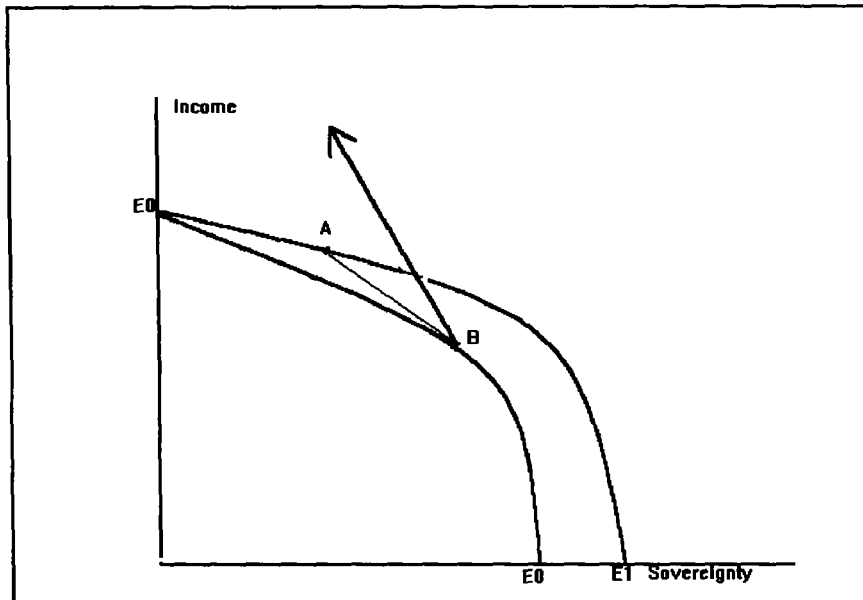
a poor to a rich conglomerate.

In the meantime, some countries are in a peculiar limbo state. For the countries that were part of the FSU in particular, the break-up of the Soviet conglomerate meant a dramatic downward shift in the trade-off curve as their markets shrank.<sup>56</sup> Their sovereignty, by default, became high since they were parties to very few international agreements. (The situation was different for Russia, not solely because of its size, but because it officially became the successor of the Soviet Union.) The shift which occurred for the smaller republics after the dissolution of the Soviet Union can be represented by a movement from point A to point B in Figure 8, where the shrinking of the trade-off curve is shown by comparing  $E_0E_0$  (the republic's trade-off curve when it was part of the conglomerate) and  $E_0E_1$  (when independent). Their sovereignty increased by default as income went down. However, as these countries become better integrated into the world economy, and eventually join the EU, their equilibrium  $y$  and  $s$  will move in the North-Westerly direction, indicated by the arrow, towards the position of low sovereignty and high income.

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<sup>56</sup>The reverse of the gain of amalgamation.

Figure 8  
The effect of conglomerate's break-up on  
smaller member's equilibrium



### 5. Some other issues.

The most stable conglomerates will be those where income levels of the members are similar and members are approximately of the same size (in terms of GDP). In that case, all members gain in income (because redistribution is small, and they gain from amalgamation), and may gain even in terms of sovereignty because, being small, they would, as independent states, have to choose equilibria with a low  $s$ . These facts might explain the stability of the U.S. conglomerate. For example, Arkansas certainly economically gains from being a member of the Union. Although its sovereignty is very limited, it would not be much different if Arkansas were independent because, as a small country, it would probably have to choose a low level of sovereignty in order to reach high income. Also, the size of the U.S. member states is such that the core state is much smaller than in most other conglomerates. For example, the largest state (in terms of GDP), California, contributes only 13 percent of the US GDP. But Russia in the former Soviet Union accounted for more than 60 percent of GDP, and within the CMEA for

more than 40 percent. Serbia accounted for 40 percent of Yugoslavia's GDP. Germany accounts for 26 percent of the European Union GDP. Also, the US states are fairly homogeneous in terms of per capita income. In the US, less than 1/5 of the overall income inequality (measured by the Gini coefficient) is due to the differences in the average per capita incomes between the states; the corresponding percentages are more than a third in Mexico, Brazil and the former Soviet Union. In addition, inter-state income inequality, already low, decreased by half between 1950 and 1989.<sup>58</sup>

An interesting and revealing case is that of Quebec and the rest of Canada. The emphasis that the Quebecois leaders put on the fact (hope?) that Quebec, even if independent, would remain a party to all international economic agreements signed by Canada, including the use of the Canadian dollar, shows that they are quite aware of the trade-off between sovereignty and income. They fear that independence might bring about a decline of income during the period until Quebec becomes fully reintegrated into the world economy (akin to what happened to the former Soviet republics depicted in Figure 8). But this point also highlights the apparent inconsistency of their position: Quebec's sovereignty as independent state would be no greater than is its current sovereignty as a province of Canada.<sup>59</sup> Even in terms of income, the best it can expect is simply to be where it is now. It is then unclear what the point of independence is.<sup>60</sup>

The analysis also throws light on the European Union and its process of enlargement. While the poor countries outside the EU wish to join, the poor countries inside the EU wish to keep the outsiders out. Thus, Mr. Westendorp, Spain's minister for European affairs, warned

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<sup>58</sup>Measured by using per capita personal income for 51 states (inclusive of D.C.). See Ram (1992, p.41). The results are very similar if one uses the break-down of the Gini coefficient. Writing the overall US size income inequality as 100 percent, differences in the average per capita income between the states explained 27 percent of inequality in 1950 and 1960, 21 percent in 1970, and 19 percent in 1980.

<sup>59</sup>Bihr (1995, p. 6) in a very careful study of Quebec independence movements writes: "To believe that Quebec will manage to deal more successfully with the big Southern neighbor [the United States] than with the rest of Canada is an illusion stemming from the depth of historical misunderstandings between Canada and Quebec. This also means to forget a consistent US attitude, derived from its power, to subject any political or economic agreement to its own national interests. If, in contrast to the US "lion", Canada and Mexico are but "sheep", an independent Quebec would not be but a "lamb." [my translation].

<sup>60</sup>This is not to deny the importance of an obvious gratification that many people feel in having their own flag, anthem, national soccer team etc.



that "many EU countries would be unlikely to ratify the Union treaty changes if they were to lose their EU subsidies to the East".<sup>61</sup>

The core state plays a key role in a conglomerate. As long as the core state sticks with the conglomerate, the conglomerate has a chance to survive. Even if the richest countries in Europe were not to join the Union (or to leave it), so long as Germany and (to some extent) France remain in the Union, it will continue. Similarly, had Russia willed to continue the Union, the departure of the Baltics would not have destroyed it. There was certainly a sufficiently strong support for the Union in the Central Asia, Azerbaijan and Belarus, while Ukraine was, at most, divided.<sup>62</sup> Similarly, had not Serbia, together with Slovenia, started to destroy the Yugoslav federation, it could have survived.

For the European Union this underscores the key role played by Germany. As the core country, it is a net loser in terms of sovereignty.<sup>63</sup> But if Germany's economic gains from integration become eroded through redistribution (because Germany like Russia is in the position of a core net-contributor<sup>64</sup>), it might gradually become disenchanted with the Union. Germany's drive to "broaden" the European Union relatively fast by bringing in East European states is therefore an ambivalent move. On the one hand, Germany would lose since it is the largest subsidy-giver, and all of these countries will be net recipients of subsidies.<sup>65</sup> On the other hand, Germany hopes that its political clout within the Union would increase because these countries can be expected to vote with Germany as a bloc. Its political stature would increase and it could

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<sup>61</sup>Quoted from "For Spain, the EU is all about money", *International Herald Tribune*, July 10, 1995, p.13.

<sup>62</sup>The referendum for the preservation of the Union held in March 1991 returned an almost 100 percent vote in favor in Central Asia and Azerbaijan, 83 percent in Belarus, 74 percent in Ukraine, and 71 percent in Russia. The referendum was boycotted in the Baltic republics, Armenia, Georgia and Moldova.

<sup>63</sup>It was not the case in the past when Germany, because of the lost war, had anyway its sovereignty severely curtailed. But that sovereignty loss was due to elements exogenous to our analysis.

<sup>64</sup>In 1992, Germany's net budget contribution to the EU was 9 billion ECU. France was a distant second with a net contribution of 1½ ECU.

<sup>65</sup>But, note also that Germany's trade-off curve might expand quite a lot (much more than that of its other EU partners) because of East Europeans' high demand for German exports. This is the case of the different gains from amalgamation for different members (see Annex 2).

collect the "psychic" income associated with the leader, but at economic cost to its population.

Finally, the analysis also highlights the extremely sensitive role of income redistribution. For a conglomerate to be stable, income differences between members need to be minimized. This explains why all conglomerates engage in redistributive policies. But, on the other hand, too much redistribution may drive away the rich members of the conglomerate, and endanger conglomerate's existence. Thus, redistribution is, on one hand, needed for the conglomerate's long-term survival; on the other hand, it might make the conglomerate less stable in the short-term.

#### 6. A summary of hypotheses, results and agenda for further research

In this paper, we have been able to generate a set of relatively clear and testable hypotheses. Most of them were tested in the paper. This is their summary.

(1) Controlling for endowments, we expect to find larger countries (in terms of their domestic market) selecting higher levels of sovereignty ( $s$ ). The empirical analysis, based on 165 countries in 1993-94, confirms this.

(2) As endowments increase, we would expect costs of sovereignty to go up because endowments cannot be "valorized" in isolation. Thus we expect lower  $s$ , i.e. an increase in binding international agreements, with time (as the countries of the world get richer). Cross-sectionally, we expect lower  $s$  as endowments increase. This is indeed the case: greater wealth per capita is strongly associated with countries' acceptance of binding international agreements.

(3) More democratic countries will, under *ceteris paribus* conditions (i.e. given domestic market, endowments), select lower  $s$ . We find some evidence for this too.

(4) Conglomerates will be particularly attractive for small and poor members. Conglomerates will have trouble attracting or holding small rich members. We can expect that the richest countries either leave the conglomerates or fail to join them. We find strong evidence that small countries tend to join the conglomerates. However, no evidence is detected that

relative income (i.e. country's income relative to the average income of the "aspiration" group) matters for the decision to join a conglomerate.

(5) Democracies will be more likely to form and join conglomerates. The evidence for this is very strong. A one "Freedom House point" increase in political repression reduces the odds of joining vs. not joining by almost 2/3.

(6) Large non-democracies will tend to transform conglomerates into empires (in order to increase rulers' sovereignty) or to stay out. Rich, middle-sized and non-democratic countries will stay out. We did not test the first statement. As for the second, we find support for the tendency of middle-sized and non-democratic countries to stay out; not so for the rich.

The following two hypotheses were not tested. They might provide topics for further research, in which the issue of conglomerate stability may be at the center stage.

(7) Conglomerates will be stable if composed of countries at about the same level of income (thus limiting the redistribution), and of similar sizes (thus all gaining from a larger  $s$  that comes with the conglomerate). For stability to obtain, richer and/or larger members will have to have somewhat greater sovereignty (to be "more equal") than poorer and smaller members. Giving them greater sovereignty is a "bribe" to make richer members accept redistribution, and larger members not to strike it out by themselves.

(8) Rich conglomerates will particularly strongly attract small rich members of the poor conglomerates, who can thus move from being net-subsidy donors to net recipients.

## ANNEX 1

*Why conglomerates are not empires?*

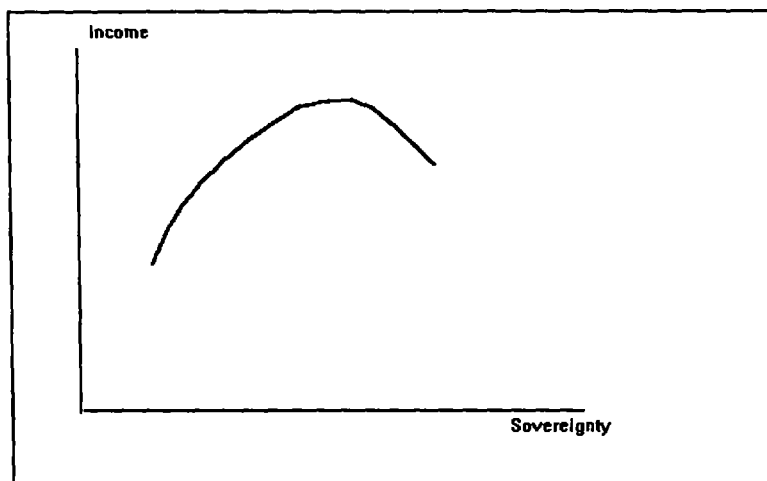
One of the obvious questions is what distinguished conglomerates from empires. First, empires are run predominantly or entirely by a single member state. Although its domination is seldom complete over all spheres of decision-making, there is never doubt of who is the master nation of the empire. Sovereignty of that member is much greater than sovereignty of any other member.<sup>66</sup> This is different from the conglomerates where, as we have argued, sovereignty is shared, and moreover where the dominant (core) member almost invariably "gives up" more of its sovereignty than the other members. Secondly, and related to the previous point, empires do not have redistribution policies in favor of weaker members. They are run by the dominant member and primarily in the interest of the dominant member.

An important difference emerges in the shape of the sovereignty-income relationship. Empires, unlike conglomerates or single nation-states, do not face a trade-off between sovereignty and income. Rather the reverse. Control over the others is often the condition for the rising income. As shown in Figure 1A, for empires both sovereignty and income increase for a while. For the population of the dominant state, this is an ideal situation because it can quickly move up the indifference curve: it can avail both of greater sovereignty (mastery over the others) and greater income. However, a point is reached when the maintenance of a given level of sovereignty or its increase requires military or police expenses of a magnitude such that any income gain from the acquisition of new territories and population is more than offset by increased expenses. At that point (see point A in Figure 1A), empires do begin to face the trade-off between sovereignty and income.

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<sup>66</sup>Doyle (1986, p.12) defines an empire as "a system of interaction between two political entities, one of which, the dominant metropole, exerts political control over the internal and external policy—the effective sovereignty—of the other, the subordinate periphery."

Figure 1A  
Trade-off curve for empires



## ANNEX 2

### Conglomerate's equilibrium

The conglomerate's equilibrium per capita income  $\bar{y}_k^*$  is likely to be greater<sup>67</sup> than the weighted average income of the members before they joined the conglomerate  $y_i^*$  (equation A1).  $\alpha$  ( $\geq 1$ ) is the income gain from amalgamation.

$$\bar{y}_k^* = \alpha \sum p_i y_i^* \quad (\text{A1})$$

where  $p_i$  = the share in total population.

The conglomerate's average income  $\bar{y}_k^*$  is, by definition, equal to the weighted mean of

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<sup>67</sup>We cannot be sure that it will be greater despite the expansion of the trade-off curve because the conglomerate's level of sovereignty changes compared to what was individual members' sovereignty before.

members' incomes,  $y_i^k$  for all  $i$  (see equation A2). If there is full redistribution so that members' incomes are equalized:  $\bar{y}_k^* = y_i^k$ . In a more general case when there is some redistribution but not full equality of incomes, a member's equilibrium income will be  $\bar{y}_k^* = \alpha d_i y_i^*$ .  $d_i$ 's are the distribution parameters.  $d_i$ 's are greater for poorer members. If  $d_i > 0$ , a member gains from redistribution. In order for the conglomerate to be stable,  $d_i$  for the rich member must be so calibrated to allow it to reach a higher indifference curve than if it were independent.

$$\bar{y}_k^* \equiv \sum p_i y_i^k = \alpha \sum p_i d_i y_i^* \quad (\text{A2})$$

As can be seen from (9), in principle, each member gains from amalgamation.<sup>68</sup> But depending on the redistribution parameter  $d$ , a member's income may be additionally increased or reduced. There are thus two key parameters: the gain from integration,  $\alpha$ , and the redistribution of income within the conglomerate ( $d_i$ ). Obviously, the greater the gain from integration (the "freebie"), the easier is to negotiate the distribution parameters such that the members, including the rich one (whose  $d < 0$ ), would have an income sufficiently high to reach a higher indifference curve when within the conglomerate than independent.

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<sup>68</sup>In the general case  $\alpha$  may be member-specific:  $\alpha_i \neq \alpha_j \neq \alpha$ .

## ANNEX 3

**International organizations and agreements used in calculation of  
constrained economic policy sovereignty**

Name of organization	Description of constraints to sovereignty	Estimate of strength of constraint (3 = maximum; 1 = minimum)	Number of member countries (1993)
European Union	Free trade zone; free mobility of factors of production; supranational legislation (labor, environment, human rights).	3	14
<b>Trade organization</b>			
World Trade Organization	Multilateral tariff reductions	2	115
Mercosur	Free trade in selected (industrial) products	2	4
Nafta	Free trade zone	2	3
EFTA	Free trade zone; makes European Economic Space with the EU	1	3
ASEAN	Movements toward free trade (common preferential tariff)	1	7
Cooperation council of Arab Gulf states		1	6
CIS custom union	Free trade zone	1	4
CEFTA	Free trade in selected (industrial) products	1	4
CARICOM	Movement toward free trade	1	4

<b>Exchange rate agreements</b>			
CFA Franc a/	No independent monetary policy	3	14
Eastern Caribbean dollar a/	No independent monetary policy	3	6
IMF Article VIII b/	Full currency convertibility to be observed: limits a range of macro policies	2	85
Formally pegged to a single currency or a currency board c/	Limits independent monetary policy	2	21
Formally pegged to a composite currency or a group of currencies d/	Limits independent monetary policy	1	19
<b>Cartels</b>			
OPEC e/	Determines countries' oil export quotas	2	12

**Note:** The actual number of member countries can slightly vary from the number given here since some member countries may not be included in our sample (e.g. Luxembourg and Slovenia are member of respectively EU and CEFTA but are not included in the sample).

**Data sources:** Descriptions of various organizations obtained from IMF World wide web, Yearbook of International Organizations 1994 published by *Union of International Associations*, web sites of different organizations (e.g. Mercosur, WTO), and experts' opinions.

a/ International monetary fund, *1994 Annual Report*, Appendix 2, Table II.16.

b/ International monetary fund, *1994 Annual Report*, Appendix 2, Table II.15.

c/ International monetary fund, *1994 Annual Report*, Appendix 2, Table II.16. All countries with single currency pegs (including those pegged to SDR).

d/ International monetary fund, *1994 Annual Report*, Appendix 2, Table II.16. All countries with limited flexibility of the currency with respect to another single currency or a group of currencies; and countries with a fixed peg against a currency composite. Countries belonging to the European exchange rate mechanism not included because their interdependency is already reflected in the EU membership.

e/ No other cartel was included since by 1993-94 most have either dissolved (cocoa, sugar, and tin) or become irrelevant (coffee and rubber).



## REFERENCES

Alesina, Alberto and Dani Rodrik, "Distributive Policies and Economic Growth", *NBER Working Paper Series*, No. 3668, March 1991.

Alesina, Alberto, Roberto Perotti and Enrico Spolaore (1995), "Together or separately: issues on the costs and benefits of political and fiscal unions", *European Economic Review*, vol. 39, pp. 751-758.

Alesina, Alberto and Enrico Spolaore (1995), "On the Number and Size of Nations", mimeo, October.

Bihr, Alain (1995), "Hesitations et contradictions du mouvement nationaliste quebecois", *Le Monde Diplomatique*, July, p. 6.

Bird, Richard M., Robert D. Ebel and Christine I. Wallich (1995), *Decentralization of the socialist state: Intergovernmental finance in transition economies*, World Bank regional and sectoral studies, Washington, D.C.: World Bank.

Bolton, Patrick and Gerard Roland (1995), "The Break-up of Nations: A Political Economy Analysis", Centre for Economic Policy Research, Discussion paper series No. 1225, London.

Buchanan, James (1987), *Economics: between predictive science and moral philosophy*, Texas A&M University series No. 7, Texas A&M University Press.

Doyle, Michael W. (1986), *Empires*, Ithaca, NY and London: Cornell University Press.

Freedom House (1994), *Freedom in the World 1993-94*, New York: Freedom House.

Krugman, Paul (1991), "The Move Toward Free Trade Zones", *Economic Review of Federal Reserve Bank of Kansas City*, November/December, pp. 5-25.

Jacquemin, Alexis (1995), "Capitalism, competition, cooperation", *De Economist*, February, pp. 1-14.

Hirschleifer, Jack (1991), "The paradox of power", *Economics and Politics*, 3: 3, pp. 177-200.

Hosli, Madeleine (1990), "Decision-making in the EEA and EFTA states' sovereignty", *Aussenwirtschaft*, vol. 4, pp. 463-494.

Mencinger, Joze, "Economics of disintegration (from Slovenia's perspective)", a paper presented at the conference on Economic cooperation in South-East Europe, Paris, June 5-9,

1995.

Orlowski, Lucjan (1995), "Direct transfers between the Former Soviet Union Central Budget and the Republics: Past Evidence and Current Implications", *Economics of Planning*, 28:1, pp.29-57.

Perotti, Roberto, "Income Distribution, Politics, and Growth" (1992), *American Economic Review Papers and Proceedings*, May, p.311.

Persson, Torsten and Guido Tabellini (1994), "Is Inequality Harmful for Growth?" *American Economic Review*, 84:3, June, pp. 600-621.

Pissarides, Christopher (1995) "Trade and the Returns to Human Capital in Developing Countries", October, mimeo.

Ram, Rati (1993), "Interstate income inequality in the United States: measurement, modelling and some characteristics", *The Review of Income and Wealth*, March, pp. 39-48.

Serageldin, Ismail (1995), "Sustainability and the Wealth of Nations: First Steps in an Ongoing Journey", paper presented at Third Annual World Bank Conference on Sustainable Development, September 30, 1995.

Solzhenytsin, Alexander (1995), *'The Russian Question' at the End of the Twentieth Century*, Farrar, Straus and Giroux.

Tarr, David (1994), "The terms-of-trade effects of moving to world prices on countries of the former Soviet Union", *Journal of Comparative Economics*, 18:1, pp. 1-24.

Tullock, Gordon (1991) in "Economic integration and the future of the nation-state", *Contemporary Policy Issues*, 11:2, p.1-23.

Vaubel, R. (1994), "The political economy of centralization and the European community", *Public Choice*, 81:1-2, p.151.

Wallace, William (1986), "What price independence? Sovereignty and interdependence in British politics", *International Affairs*, Summer, pp. 367-89.

Widgren, Mika (1994), "Voting power in the EC decision making and the consequences of the two different enlargements", *European Economic Review*, 38:5, May, pp. 1153-70.

Widgren, Mika (1994a), "The Relation between Voting Power and Policy Impact in the European Union", Center for Economic Performance, London School of Economics, Working paper No. 1033, June.

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