

**KU LEUVEN**

**Vives**



Vlaams Instituut voor Economie en Samenleving

Naamsestraat 61 | bus 3550  
B-3000 Leuven | BELGIUM  
Tel. 032 16 326661  
vives@kuleuven.be

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# Briefings

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## Is there a premium in the size of nations?

**Jože P. Damijan , Sandra Damijan , Osiris Jorge Parcero**

Het Vlaams Instituut voor Economie en Samenleving, VIVES, is een economisch onderzoekscentrum dat via fundamenteel en toegepast onderzoek wil bijdragen tot het maatschappelijk debat inzake de economische en maatschappelijke ontwikkeling van regio's, in het bijzonder van Vlaanderen. VIVES is als onderzoekscentrum wetenschappelijk en juridisch geïntegreerd binnen de KU Leuven en werkt ook samen met research fellows uit andere universiteiten.

# Is there a premium in the size of nations?

Jože P. Damijan<sup>1</sup>, Sandra Damijan<sup>2</sup>, Osiris Jorge Parcerro<sup>3</sup>

Country size has been an intriguing issue for a long time. In particular, it became increasingly important after the WW2 when a number of former colonies, mostly small countries, gained independence. The central issue here was whether small countries can achieve a sufficient scale in order to achieve economies of scale in production and in providing essential public goods.

Alesina and Spolaore (1997, 2003) famously summarized five benefits of large population size: (i) lower per-capita costs of public goods; (ii) cheaper per-capita defense and military costs; (iii) greater productivity due to specialization; (iv) greater ability to provide regional insurance; and (v) greater ability to redistribute income within the country. But there is also a cost related to large countries. In particular, large countries have more diverse preferences, cultures, and languages. This heterogeneity of preferences may generate significant political and economic costs.

Empirical studies so far, however, were unable to find unambiguous support for the importance of size, neither positive nor negative. In the compendium published in 1960 (Robinson, 1960), a number of different studies explored the impact of economies of scale on country performance and found them to be mostly unimportant. These findings were later confirmed also using more recent data. Of the most recent studies, Barro and Sala-i-Martin (1995) provide limited evidence of a scale effects on growth. Alesina, Spolaore, and Wacziarg (2005) test whether the effect of size on growth depends on country openness, but find only moderately supportive evidence. Rose (2006) examines the impact of size on many country characteristics and finds that small countries are richer and more open to international trade than large countries, but are not systematically different otherwise.

In a [recent paper](#) we analyze whether there exists a ‘premium of country size’. We use a comprehensive database for more than 200 countries for the period 1960 – 2010 on a large number of key economic and socio-economic indicators. The difference between our and previous studies (in particular the most recent study by Rose, 2006) is that previous studies estimate the impact of size on country performance using a continuous variable of size (size of population), while we use a semi-parametric approach. We do this by regressing a set of continuous variables measuring country performance on a set of categorical indicators of country size. We divide countries either into two size classes (small and large) or five size classes according to the size of population (micro, tiny, small, medium, large). The reason

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<sup>1</sup> Faculty of Economics, University of Ljubljana, and VIVES, KU Leuven

<sup>2</sup> Faculty of Economics, University of Ljubljana

<sup>3</sup> College of Business and Economics, United Arab Emirates University

for this approach is that economic structure and economic performance of countries do not necessarily correspond to the continuous distribution of size as measured by the population as some, in particular public goods, are indivisible by its nature. Provision of certain public goods or types of production requires a certain threshold in terms of size. A good example of this may be independent military service or monitoring of national airspace that may be prohibitively expensive for micro or tiny states.

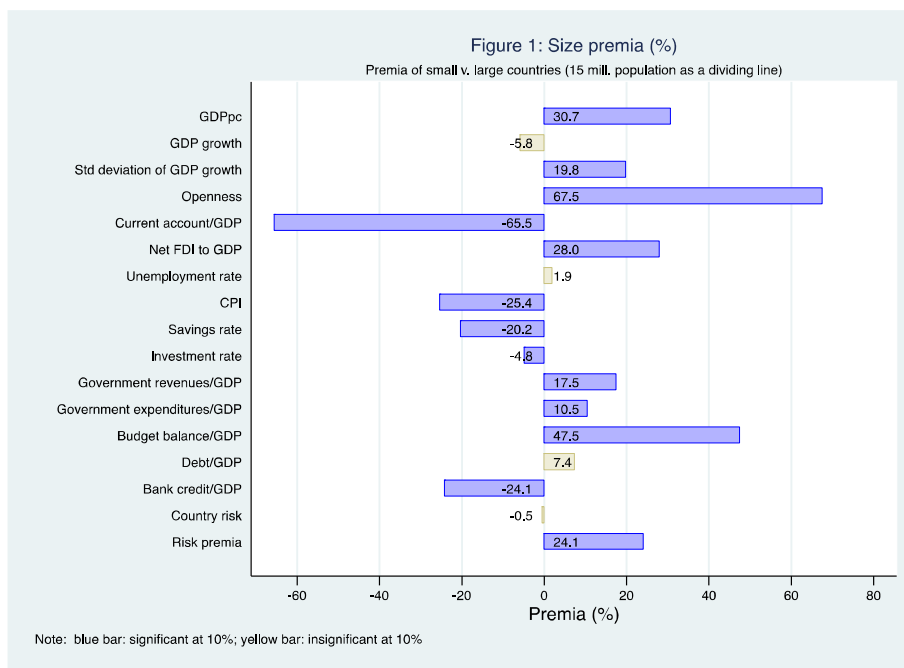
Moreover, we are interested in showing whether there exists something akin to a premium of size. Can we show that a class of small countries exhibits a certain positive (or negative) premium regarding the level of development or degrees of openness, etc.? Can we show that a class of micro countries with less than 1 million of population reveals a certain negative premium in terms of size of government? It is our goal to analyze whether such size premia exists in a variety of indicators of country performance.

Using the econometric approach, we tease out a premium of size (smallness) in a variety of key dimensions, such as the level of per capita income, long-run economic growth, volatility of growth, openness to trade and foreign direct investment, budget and current account balance, size of government and public debt, inflation, standard of living, income distribution, health, education, infrastructure development, level of democracy and corruption, and a number of other socio-economic indicators.

After controlling for a number of country-specific fixed effects, we find that small countries are different. We find that country size is important in a number of ways, though not in a way to enable the conclusion that it is for good or bad.

Figure 1 presents size premia for a class of small countries as compared to large countries (the dividing line is population of 15 million). The figure clearly demonstrates that small countries are significantly different from large countries in 13 out of 17 selected major economic indicators. This is in contrast to Rose (2006) who finds, using the parametric regression analysis, that – with the exception of per capita income and trade openness – size does not really matter.

Our results show that small countries are on average richer by 30 per cent, but they do not grow significantly faster than their larger counterparts. This implies that differences in income per capita between small and large countries are very persistent over time. Essentially, only territories that can afford to maintain the cost of smallness will decide to become independent. But once you are an established small economy your income per capita premium, after controlling for a number of country-specific effects, is going to last. Furthermore, this also implies that, in contrast to the notions of endogenous growth theory, lower intensity of product market competition in small countries does not necessarily lead to lower productivity benefits and lower long-run average rates of growth.



The most evident characteristic of small countries is that they are systematically and substantially more open than larger countries. We show that the openness premium of small countries is close to 70 per cent, i.e. the shares of exports and imports in GDP in small countries are higher by almost 70 per cent. This confirms, in conjunction with the previous finding of no systematic differences in terms of average GDP growth, that small countries are able to compensate for their smallness and insure against the domestic small markets by becoming more open to trade. A similar conclusion is reached in terms of involvement in international capital flows as small countries are found to attract almost 30 per cent more FDI relative to GDP than large countries.

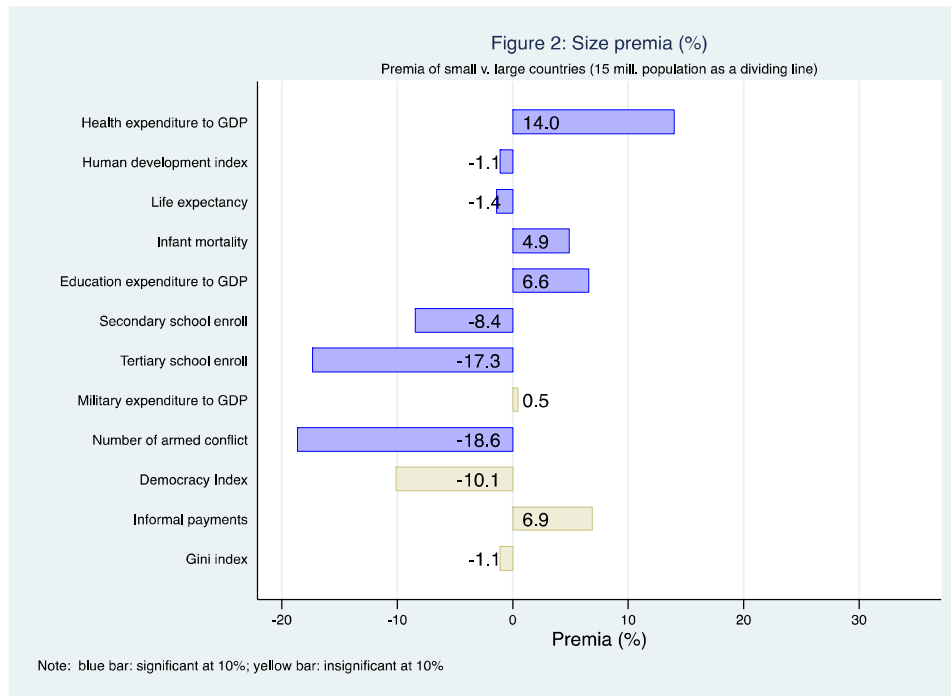
This openness to trade and FDI, however, becomes apparently at a cost of higher vulnerability to external shocks resulting in higher volatility of growth rates. While GDP growth rates of small countries are not systematically different from large countries on average, the standard deviation of growth rates over 5-years intervals in small countries is on average 20 per cent larger as compared to large countries.

In terms of other macro indicators, small and large countries do not differ in terms of average unemployment rates, but do so in terms of inflation, where small countries on average exhibit lower inflation rates by 25 per cent. Small countries also exhibit lower savings and investment rates by 20 and 5 per cent, respectively. The difference in premia between the two in favor of relatively lower savings rate indicates that small countries are dependent on foreign savings, which materialize in the form of larger inflows of FDI.

One of the most pronounced findings of our study, however, is that small countries have systematically bigger governments. The exact premia in terms of expenditures and revenues equals 17 and 10 per cent, respectively. However, having larger

governments does not necessarily lead to fiscal irresponsibility. On the contrary, small countries are shown to run more prudent fiscal policies and have larger budget surpluses reaching almost 50 per cent on average as compared to large countries. Moreover, there are no systematic differences between small and large countries in terms of the public debt to GDP.

Finally, though their country risk is no different from large countries, small countries on average pay systematically a higher risk premium by almost 25 per cent when taking up foreign loans. At least here, small countries are taxed for their smallness by international financial markets.



In addition, we also look into differences among small and large countries in terms of a number of socio-economic indicators. Most obvious, as indicated by Figure 2, small countries seem to pay higher per capita cost of provision of essential public goods and seem to get less for a penny in terms of performance in the fields of health and education. Though, on average, small countries exhibit almost 15 per cent higher public spending for health care relative to GDP, the overall quality of life (as measured with the Human development index) and life expectancy are lower and infant mortality is higher. Similarly, despite higher expenditures for public education by almost 7 per cent, the secondary and tertiary school enrolment rates are significantly lower in small countries

This does not hold for military spending, where small countries display no higher spending, but exhibit significantly lower tendency to engage in armed conflicts. Smallness also does not result in bigger income inequality, lower democracy or bigger corruption.

To sum up, country size is important. It is important in a number of ways, but one cannot determine whether it is good or bad being a small country. Small countries do have bigger governments, but do also have more prudent fiscal policies. While in terms of provision of essential public goods, small countries perform comparatively worse, they are richer and do not perform any worse in terms of economic performance. Essentially, small countries are able to compensate for smallness by relying on foreign trade and foreign direct investment. The latter, however, comes at cost of potential higher vulnerability to external shocks.

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