

Does Globalization Smooth Income Growth? The Facts Revealed by Differences in GDP and GNP

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As a result of advancing globalization and economic activities that go beyond national borders, gross domestic product (GDP) and gross national product (GNP) are becoming dissociated. The two are the same to the extent that they measure (gross) added value generated during a specific period (e.g., one year). A difference between them is, generally speaking, the former focuses on whether economic activities take place in the country, while the latter on whether the economic activities are conducted by residents of the country. Thus, the relationship between the two is as follows:

$GNP = GDP + \text{factor incomes from overseas} - \text{factor incomes going overseas.}$

This article points to interesting implications of globalization suggested by relative size of GDP and GNP growth variations.

Is Overseas Investment Intended to Diversify Risk?

As a first step in understanding globalization, the idea of risk diversification (or risk sharing) can be useful. Taking account of the fact that both foreign assets and liabilities are increasing in many countries, risk diversification is likely to be a primary force to drive international capital flows. That said, there is surely a home bias: international diversification investment is not sufficient to achieve effective risk diversification.

In addition, there are signs that risks for fundamentals facing each economy, which should be diversified internationally, may become larger. For example, industrial structure is being further specialized in developed countries (Imbs and Wacziarg, 2003). This may be caused by expansion of markets due to increasing globalization, and the resulting intensified competition. As specialization of industrial structures increases, it is reasonable to diversify the risks key domestic industries face. This can easily be seen if we think of Samsung, which commands a dominant position in the South Korean economy, of Toyota Motor Corporation, which is located in Aichi Prefecture (or Toyota City, to be more specific).

Following the risk diversification argument, the effects on the domestic economy of various shocks could be mitigated through international transactions. Accordingly, growth variations are expected to be smaller in GNP than in GDP.

Statistics Show Larger Variations in GNP

This prediction, however, is not entirely supported by the data since the 1990s of OECD (Organization for Economic Co-operation and Development) member countries and Japan's 47 prefectures. Regional economies could be regarded to be close to a limit of globalization: economic activities are conducted with no regard for prefectural borders. While the factor incomes are largely investment income in the OECD data, employment income accounts for their significant share in the regional data. For each country (and prefecture), the following ratio is calculated:

$$\frac{\text{Variance of GDP growth rate (or its regional counterpart)}}{\text{Variance of GNP growth rate (or its regional counterpart)}} \times 100.$$

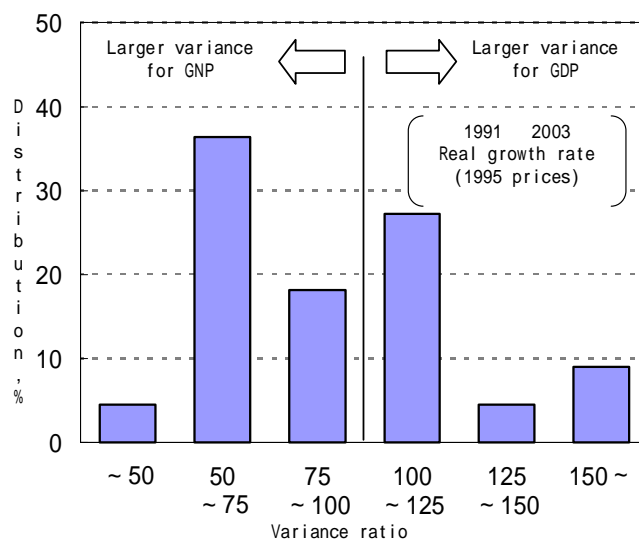
The ratio above 100 is consistent with the prediction based on risk diversification.

The distributions of the ratios are shown in Figures 1 to 3. Using real growth rates of the OECD countries (1995 prices), the ratio smaller than 100 accounts for about 60% (i.e. 13 out of 22 countries) contrary to the prediction (Figure 1). The calculation based on nominal growth rates, which increases the sample size, confirms the same result: the ratios for 19 out of 30 countries are less than 100 (Figure 2). In the case of the Japanese regional (real) growth rates, the ratio below 100 is approximately 70%, i.e. 33 out of 47 prefectures (Figure 3).

The above statistical facts show Lane's (2001) findings in OECD data (1970 – 1997) are robust in two points. First, his conclusion holds to regions, in which more extensive external collaboration of economic activities is observed than in countries. In other words, as is the case of investment income, no stabilization function can be detected in payments and receipts of employment income. Second, the conclusion remains intact whether nominal or real growth rates are calculated. Not only factor incomes but also trade gains due to changes in terms or trade are included in difference between GDP and GNP when measured in real terms. The invariance nature may indicate trade gains do not possess a stabilizing function, either. Both Figures 1 and 2 show the variance ratio below 100 occupies the almost same share, despite their different distributions.

Although risk diversification may predict globalization exerts a smoothing effect on income growth, this effect is not observed in either the OECD countries or in Japan's regions. It would be hasty to conclude based on this result alone that a progress in globalization may amplify income growth variations. However, the result can be evidence against that idea that globalization advances with risk diversification.

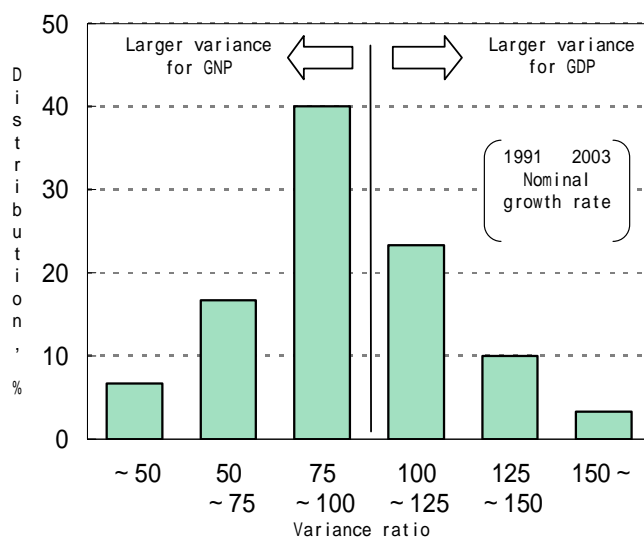
Figure 1. Income growth variations in 22 OECD Countries (Real)



Note: Data for Switzerland is from 1991 to 2002, for Germany from 1992 to 2003, for Slovakia from 1994 to 2003, and for Greece from 1996 to 2003.

Source: Prepared by the author based on data from the OECD Web site.

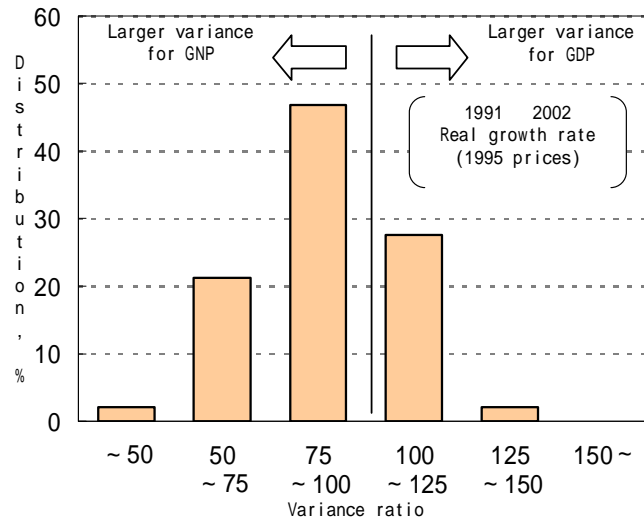
Figure 2. Income growth variations in 30 OECD Countries (Nominal)



Note: Data for Poland is from 1992 to 2002, for Hungary and Slovakia from 1994 to 2003, and for the Czech Republic from 1993 to 2003.

Source: Prepared by the author based on data from the OECD Web site.

Figure 3. Income growth variations in Japan's 47 Prefectures (Real)



Source: Prepared by the author based on data from Annual Report on Prefectural Accounts 2005, published by the Cabinet Office, Government of Japan.

Bibliography

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- Imbs, Jean, and Romain Wacziarg (2003) "Stages in Diversification" *American Economic Review* vol. 93 no. 1 pp. 63-86.