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# MEASURING THE EVOLUTION OF THE FINANCIAL GLOBALIZATION

Theoretical  
article

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## Abstract

*The evolution of the world is constantly taking place and different regions or countries are becoming more and more interlinked. The financial integration between the most important economies of the world has enhanced and together with the positive attributes, the vulnerabilities and risks associated in one country can have negative repercussions into some other. These get transmitted via the gross capital flow and can have devastating effects for some regions. Therefore, it is worth taking into account the creation of a financial globalization index in order to measure the level of financial integration that the world or particular groups of countries have reached and also to study the patterns for the last decades.*

## Introduction

The financial globalization has shown its first signs in the late 19th century and has been evolving ever since. The emergence of Central Banks, International Organizations, the linkages created among different economies and the increasing volumes of trade flows have brought closer the financial actors among the world. The international capital flows that have resulted have brought many benefits to interlinked financial world, but also many challenges. Although initially these were related to the trade transactions, the funds transfers associated to different financial assets have taken the lead. Many of the analysts from the economic spectrum are questioning whether this surge of capital flows is positive. As a main benefit, one can stress that this increase can encourage economic growth by attracting foreign capital in a home country. On the other hand it leaves the economies much more exposed to external shocks.

The structure of the capital flows is also of high importance. If the main part is produced by volatile flows, a sudden reversal can take place during financially distressed periods. Still, foreign direct investments also include transfers of technology and managerial expertise.

The main result of greater volumes in international capital flows is nevertheless a more dependent and globalized world, with benefits but also financial distress spilling over from one region to another (Stoian and Becherescu, 2013b). Financial shocks that produce a sudden reversal of capital flows can lead to a rapid devaluation of the exchange rate. This has an important effect on sovereign debt that needs to be reimbursed in other stronger currencies. The same principle is valid for local companies that have to repay foreign currency loans.

Capital flow volatility can have widespread economic consequences, such as amplifying economic cycles, increasing the vulnerabilities of the financial system and aggravating overall macroeconomic instability. The recent crises have shown the deep impact on the real economy with fast drops and lengthy recoveries. Therefore regulations and management of the financial capital flows have an important role in the world financial landscape.

Through the examination of capital flows one can either see surges, sudden stops, bonanzas or capital flight as per Forbes and Warnock (2011). It is of great importance to understand and anticipate these flows in order to diminish the potential harmful impact that they could inflict on the economies of countries, either small or large.

Originally, many believed that only the developing economies could be affected by the financial crises due to structural weaknesses (one could mention limited financial development,

faulty governance structures, over-regulated markets, extensive dollarization of domestic and external liabilities or fear of “floating” the exchange rate) as per Gourinchas and Obstfeld (2012), however the very recent history has shown that the more advanced group of countries is not left out of the dangers that lie in the financial world.

The links that have emerged in the last years between countries, financial companies, central banks and international institutions together with the sophisticated financial products that are now flooding the financial world should be very cautiously examined in order to set up a viable architecture of the international financial structure. The paper is organized as follows. The second section emphasizes the difference between net and gross capital flows, the reason why gross capital flows are important together with their structure and which are the determinants of gross capital flows. The third section presents the financial globalization index and the methodology used. In section 4, the outcome of the analysis is displayed and several interpretations are provided. Section 5 concludes.

## Net and Gross Capital Flows

Net capital flows (NCF) are defined as the difference between gross inflows and outflows. Net capital flows are equal to the difference of capital inflows by foreign agents (CI) and capital outflows by domestic agents (CO).

CI measure the non-residents holdings of domestic assets, representing the sum of all liability inflows. CO are equal to the domestic agents' net purchases of foreign assets which is the negative of the sum of all asset inflows. These include the international reserves (Broner et al., 2013).

In order to study the cross-border capital flows, one could focus on the current account, however this may not shed light on the financing patterns that are generally at the center of the instability in the financial system. Both the current account and the net capital flows cannot reveal evidence about the financing flux of capital. The two take into account changes in net claims for a specific country which are taking place due to trade in real goods and services (net resource flows). Nevertheless, they do not include the underlying changes in gross flows and their contributions as the transactions of financial assets create the bulk of the cross-border financial activity. Therefore, current accounts do not provide plentiful information about the role that a country is playing in international borrowing, lending and financial intermediation, to which range the domestic investments are financed from out of the country or the influence of cross-border capital flows on local financial conditions. Furthermore, it brings greater benefits on various instances to step away from the

residency model which underlies the balance of payments statistics and move to a perspective that consolidates operations of individual companies across borders. By looking at gross capital flows (GCF) and at the significant tendencies in the international banking activity, one can state that the financial weaknesses are not linked to current account imbalances (Borio and Disyatat, 2011) but rather to an increased financial integration and dependence that is pumping via the financial flows channels both boosts of economic profits but also vulnerabilities that are being transferred from the other markets.

Gross capital flows are defined as capital outflows plus capital inflows (Tille and Wincoop, 2008). They reveal a wide array of structural conditions or development strategies (Janus and Riera-Crichton, 2011). Gross capital flows are large and volatile compared to net flows, as well as procyclical in the sense of retrenching during crises (Broner et al., 2013).

### The Structure of Capital Flows

The dynamics of gross capital flows shows more information on the behavior of domestic and foreign agents and on the types of shocks underlying international capital movements. This is one of the primary reasons why one should focus more the attention on gross capital flows in contrast to net capital flows. As mentioned, CI measure the non-residents holdings of domestic assets and CO are equal to the domestic agents' net purchases of foreign assets. Consequently, net capital flows (NCF) are equal to the difference CI-CO.

Gross capital flows are divided into portfolio investment flows, other investments and direct investment flows. In high-income countries, other investment flows represent the most important part of both CI and CO, amounting to almost 50% (40% respectively). In contrast, in emerging market economies almost 50% of CI takes the form of direct investments. Additionally, international reserves represent the largest subcomponent with 46% of CO in middle income countries and 58% in low income countries (Broner et al., 2013).

$$CI = \text{Portfolio Investment} + \text{Other Investments} + \text{Direct Investments} = \text{Portfolio Equity Flows} + \text{Portfolio Debt Flows} + \text{Bank Flows} + \text{Direct Investments}$$

$$CO = \text{Portfolio Investments} + \text{Other Investments} + \text{Direct Investments} + \text{International Reserves} = \text{Reserves} + \text{Portfolio Equity Flows} + \text{Portfolio Debt Flows} + \text{Bank Flows} + \text{Direct Investments}$$

For each of the subcomponents there are specific descriptions, both for funds coming in or going out of the country. Portfolio Equity Flows represent the sum of country funds, depository

receipts, and direct purchases of shares by foreign investors. Portfolio Debt Flows represent bond issues purchased by foreign investors. Bank Flows relate to commercial bank lending and other private credits. Direct Investments are equal to net inflows of investments to acquire a lasting management interest (10% or more voting stock) in an enterprise operating in an economy other than that of the investor. The concept of international reserves is based on the balance-sheet framework and relates to the assets denominated in foreign currency plus gold, held by a central bank, sometimes for the purpose of intervening in the exchange market to influence or peg the exchange rate. These usually include foreign currencies themselves (especially US dollars), other assets denominated in foreign currencies, gold, and a small amount of SDRs (Parson, 2006).

### A breakdown of international capital flows: literature review.

Financial flows are divided into direct investments, portfolio flows, other investments (mostly bank flows and trade credit) and international reserves. Due to their reduced level and the scarcity of data, financial derivatives flows may not be taken into account. Portfolio flows are further split into equity and debt flows. Also, the flows can be either private or public. As mentioned before, CI (the aggregate capital inflows measure by foreigners) are equivalent to the sum of the following inflows: direct investments in the reporting economy, portfolio investment liabilities, and other investment liabilities. CO are the aggregate amount of outflows of direct investments abroad, portfolio investment assets, other investment assets and international reserve assets (Broner et al., 2013).

The determinants of international capital flows and their consequences for economic growth have been one of the most important topics in the international macroeconomics literature. However, no consensus has been reached. Essentially, this happens because different researchers focus on different samples of countries (OECD countries vs developing countries), different periods (70s vs 80s vs 90s) and different forms of capital flows (FDI / portfolio equity flows vs debt flows or public flows vs private flows) (Alfaro et al., 2007). Calvo et al., (1996) put emphasize on the role of external and internal factors as potential determinants of foreign investments using a cross-section of developing countries. Their conclusion is that low interest rates in the United States of America played an important role in the flows that continued to come from these countries during the 90s. Edwards (1991) shows that the size of the government and its openness are significant determinants of foreign direct investments coming in from OECD to developing countries for the period '71-'81. Wei

(2000) and Wei and Wu (2002) use data on bilateral Foreign Direct Investments from 18 industrialized source countries to 59 recipient countries during the period of '94-'96 and find that corruption diminishes the volume of inward FDI and affects the composition of flows by increasing the loan to FDI ratio during the period. As per the data used for bilateral portfolio equity flows from a set of 14 industrialized countries during '89-'96, Portes and Rey (2005) show that imperfections in the international credit markets can affect the amount and direction of capital flows. Using a set of emerging market economies, Lane (2004) finds credit market frictions to be a determinant of debt flows during '70-'95. Also, the overall role that institutions play in shaping long-term capital flows among a cross-section of developed and developing countries is worth taking into account (Alfaro et al., 2007).

### Creating the Financial Globalization Index

In a world that is becoming more and more entangled with multinationals and having services being spread around the globe, the financial spectrum is in the middle of all that is happening. All the linkages need to be performed via the widespread banking systems and the clients that they are supporting. In addition, the expansion of the financial offerings (e.g. derivatives or other structured products) has taken the investment decision to another level. One company in a distant country can start holding assets very easily in another country on the other side of the globe.

One can tell that this evolution in the financial system has brought many advantages for both clients and financial markets that they are part of but has also increased dramatically the risks and spillover effects from one region to another, sometimes without any obvious linkages.

Therefore the financial globalization is a matter worth looking at and the evolution of the integration between financial markets should be observed and measured in order to estimate the risks that arise from this new world financial architecture.

The Financial Globalization Index will be the measure proposed in order to estimate the level of integration between countries and regions. The Financial Globalization Index (FGI) is dependent on two main determinants: the Total Gross Capital Flows (TGCF) and the Gross Domestic Product (GDP). If taking the example of a particular country, the TGCF represents the cash flows of the country, while the GDP represents the economic power that it has. If the comparison between the 2 is disproportioned (TGCF amounting to much more than the GDP), than that country has a high risk of being influenced by external factors.

We will consider the below equation which will define the Financial Globalization Index:

$$\text{Financial Globalization Index} = \text{FGI} = \frac{\text{Total Gross Capital Flows}}{(2 * \text{World GDP})}$$

The index will look at the world as a bulk and can be used for different type of countries. The division by two of the total gross capital flows takes place due to the fact that the inflows and outflows added together will create twice the flows that are taking place at a global level. To be noted that the inflows from a particular country can also be found in the outflows of another.

The TGCF equal the sum of financial inflows and outflows, as mentioned before.

$$\text{Total Gross Capital Flows} = \text{CI} + \text{CO}$$

### Methodology.

The data used in performing the calculations for TGCF derives from the dataset constructed by Lane and Milesi-Ferretti (2007) with updated data from 2011. The information covers the years 1970 – 2011. This follows the methodology described in the International Monetary Fund, 1993. The GDP data was taken from the World Bank statistics and aggregated from each country at world level.

The indicators used are Reserves, Portfolio Equity Flows, Portfolio Debt Flows, Bank Flows, Direct Investments, Other Investments and GDP for both inflows and outflows where the case may be. All figures are expressed in dollars.

Capital inflows measure net purchases or sales by non-residents of domestic assets, while outflows measure net purchases or sales of foreign assets by residents. Both capital inflows and outflows can also have negative values. As an example, if the non residents sell in a particular year more domestic assets in net terms, than the capital inflows will be negative. Likewise, if a country repays a part of its external debt, the reduction in non-residents' claims on that country is recorded as a negative capital inflow, because non-residents are net sellers of bonds issued by the domestic government.

The underlying stocks of external assets and liabilities are in general, of positive values. Still, there may some exceptions for this. The most frequent relates to FDI. For example, a company investing \$100 in equity in another foreign company may borrow an amount of \$110 from that foreign company via an intercompany loan. In this case the stock of FDI abroad would be -\$10 (International Monetary Fund, 2003). It is also possible for domestic residents to be shorting equities in a foreign country, in which case portfolio equity assets would be negative. Still, these occurrences are extremely rare (Lane and Milesi-Ferretti, 2007).

## Interpreting of the Results

Analyzing at the financial data starting from 1970 (Table 1), one can notice a positive trend in all values taken into consideration. The same affirmation can be emphasized for the values in Table 2, where one can see the split between the low-income economies, lower-middle-income economies, upper-middle-income economies and the high-income economies (advanced economies), as per the World Bank country groups. Lower-middle-income economies and upper-middle-income economies form the group of developing countries (EMEs). By comparison, the advanced economies seem to be two to seven times more interlinked in terms of financial flows than the low income countries, while the EMEs are situated somewhere in the middle.

In Figure 1, we can observe the evolution of the FGI, which has increased constantly with a single downturn related to the US Financial Crisis starting with 2007.

In Figures 2 and 3 one can notice the change from the previous year in terms of FGI and GDP and the evolution of the changes for the selected periods. In Figure 4, one can see the correlation between FGI and GDP. The correlation coefficient is 0.97, which shows that there is a very strong positive correlation between the 2 indicators, as these move together almost in the same way.

In Figure 5 one can notice the total financial inflows and outflows for the world, which as a sum, of course, match. The trend is the same as the one of the FGI.

In Figure 6 one can see the FGI per each type of country groups. The countries have been split into 4, based on their per capita Gross National Income (GNI) level and internal factors as per the World Bank classification: low-income economies (\$1,035 or less), lower-middle-income economies (\$1,036 to \$4,085), upper-middle-income economies (\$4,086 to \$12,615) and high-income economies (\$12,616 or more). As it was expected, the FGI of the advanced countries is higher than the one of the other three groups, the FGI of the Low Income Countries being the lowest, with an advance over the developing countries around 1994. However, starting with the last decade of the 20<sup>th</sup> century, the gap has widened exponentially, showing the increased penetration of the structured financial solutions that have interlinked the advanced economies.

In Table 3, one can notice that the data for the GDP percent change has been shifted 3 years forward. This has been performed due to findings from the previous data. Figure 7 displays graphically the data and shows that the peak moments and lowest points coincide between the two. Therefore one could say that the financial integration of the markets has an influence in the GDP which is echoed in 3 years' time. Moreover,

one can observe that important changes take place in a 4 year period pace, which may find their cause in the political elections of the major countries throughout the globe.

From the analysis of the Financial Globalization Index over the period 1970 – 2011, one can see the positive slope that the index, highlighting the trend that the world is going towards. Moreover, starting with the 90s the advanced economies have taken an increased lead in the financial linkages (this having to do most probably with the advance of internet throughout the world) and an increased focus should always be aimed at the repercussions that this may have.

## Conclusions

Measuring the evolution of the financial globalization can pinpoint the stage where the world is at from a financial perspective and can help in predicting the effects of the financial linkages. Studying the evolution of the financial world, one can highlight the importance of the capital flows nowadays for the stability of the overall financial architecture. Gross capital flows are the ones that need to be taken mostly into account as they can shift and influence conditions into the source or home countries.

As stated by Stoian and Becherescu (2013a), the importance of studying the financial crises and the ability to create a set up in order to avoid future turmoil are based on understanding the current financial patterns and the trend that the financial world is leaning towards. Moreover, creating tools in order to measure the elements of the financial world so that one can further quantify the positive or negative impacts that may arise is a requirement for the future financial challenges.

The creation of the Financial Globalization Index comes into this context and helps measuring the extent to which the world or particular regions are linked and are financially dependent to one another. The positive trend observed over the past four decades, the downturn during the US financial crisis and the increased level of growth that has started with the beginning of the 90s are creating a very good profile for the direction that the financial world is heading towards and are able to help with the next challenges that may appear.

The linkage of two regions that may not be culturally or even in an extensive bilateral relationship from a trade perspective can come from the financial flows of investment. Via these flows, the health of the economy in one nation can reverberate easily into another region, making the countries of the world more and more dependent to one another.

Also there are many lobby groups, both in Europe and in USA that are supporting the deregulation of the financial markets, a global

approach in terms of financial rules seems to be more and more the required solution (Stoian and Becherescu, 2014) in order to avoid future financial shocks.

The Financial Globalization Index can show the level of financial integration that the world has reached and can also predict future GDP increases or decreases, as the case may be. Capital flows can be withdrawn very easily from a region, with the effects of this being echoed into the GDP over the subsequent 3 years.

The financial world is heading into a more interlinked direction between the member states and the effects can be seen through the last crises in USA and Europe. Being able to measure the spillover effects that a crisis from a particular region can have on the rest of the world is therefore of great importance.

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Table 1: *Financial Globalization Index components*

| <i>Year</i> | <i>World Capital Inflows (mil US\$)</i> | <i>World Capital Outflows (mil US\$)</i> | <i>GDP (mil US\$)</i> | <i>FGI</i> | <i>FGI change from the previous year</i> | <i>GDP change from the previous year</i> |
|-------------|---|--|-----------------------|------------|--|--|
| 1970        | 735,296.37                              | 1,000,457.82                             | 2,949,275.51          | 0.29426789 | 0  | 0  |
| 1971        | 891,773.38                              | 1,167,044.48                             | 3,259,084.62          | 0.31585830 | 7.337%                                   | 10.505%                                  |
| 1972        | 1,099,453.08                            | 1,423,438.00                             | 3,759,555.34          | 0.33553052 | 6.228%                                   | 15.356%                                  |
| 1973        | 1,305,189.65                            | 1,619,750.13                             | 4,584,436.07          | 0.31900759 | -4.924%                                  | 21.941%                                  |
| 1974        | 1,485,386.97                            | 1,750,413.62                             | 5,279,680.08          | 0.30643908 | -3.940%                                  | 15.165%                                  |
| 1975        | 1,709,833.51                            | 2,008,128.38                             | 5,885,427.14          | 0.31586169 | 3.075%                                   | 11.473%                                  |
| 1976        | 2,062,792.92                            | 2,351,462.00                             | 6,400,278.25          | 0.34484867 | 9.177%                                   | 8.748%                                   |
| 1977        | 2,475,867.63                            | 2,735,353.24                             | 7,234,483.27          | 0.36016538 | 4.442%                                   | 13.034%                                  |
| 1978        | 3,076,687.60                            | 3,396,380.73                             | 8,528,701.06          | 0.37948735 | 5.365%                                   | 17.890%                                  |
| 1979        | 3,701,420.76                            | 4,060,134.82                             | 9,885,913.93          | 0.39255630 | 3.444%                                   | 15.913%                                  |
| 1980        | 5,212,882.53                            | 5,462,588.69                             | 11,109,855.09         | 0.48045052 | 22.390%                                  | 12.381%                                  |
| 1981        | 6,057,223.75                            | 6,140,514.85                             | 11,429,707.06         | 0.53359804 | 11.062%                                  | 2.879%                                   |
| 1982        | 6,643,857.22                            | 6,556,838.76                             | 11,324,598.80         | 0.58283283 | 9.227%                                   | -0.920%                                  |
| 1983        | 7,144,987.30                            | 7,050,865.54                             | 11,581,063.82         | 0.61289071 | 5.157%                                   | 2.265%                                   |
| 1984        | 7,569,119.82                            | 7,377,135.60                             | 12,019,945.15         | 0.62172727 | 1.442%                                   | 3.790%                                   |
| 1985        | 9,023,383.15                            | 8,751,325.66                             | 12,638,430.66         | 0.70320079 | 13.104%                                  | 5.145%                                   |
| 1986        | 11,435,440.70                           | 11,112,744.93                            | 14,940,573.76         | 0.75459571 | 7.309%                                   | 18.215%                                  |
| 1987        | 14,311,672.32                           | 13,737,886.30                            | 16,955,577.91         | 0.82714841 | 9.615%                                   | 13.487%                                  |
| 1988        | 16,006,420.53                           | 15,389,046.32                            | 18,969,909.82         | 0.82750701 | 0.043%                                   | 11.880%                                  |
| 1989        | 18,873,865.76                           | 18,060,771.83                            | 19,922,519.58         | 0.92695699 | 12.018%                                  | 5.022%                                   |
| 1990        | 22,667,455.00                           | 21,303,870.98                            | 22,250,739.84         | 0.98808683 | 6.595%                                   | 11.686%                                  |
| 1991        | 24,421,624.54                           | 22,600,293.69                            | 23,344,974.14         | 1.00711009 | 1.925%                                   | 4.918%                                   |
| 1992        | 25,146,238.47                           | 23,012,640.21                            | 24,976,845.28         | 0.96407049 | -4.274%                                  | 6.990%                                   |
| 1993        | 27,950,686.95                           | 25,744,949.84                            | 25,435,092.06         | 1.05554241 | 9.488%                                   | 1.835%                                   |
| 1994        | 30,525,740.52                           | 28,296,460.98                            | 27,316,586.70         | 1.07667554 | 2.002%                                   | 7.397%                                   |
| 1995        | 35,252,094.36                           | 32,653,510.27                            | 30,227,440.68         | 1.12324436 | 4.325%                                   | 10.656%                                  |
| 1996        | 38,580,592.87                           | 35,584,590.82                            | 30,859,218.31         | 1.20166984 | 6.982%                                   | 2.090%                                   |
| 1997        | 42,325,235.23                           | 39,360,217.35                            | 30,793,929.88         | 1.32632394 | 10.373%                                  | -0.212%                                  |
| 1998        | 48,437,783.73                           | 45,200,237.61                            | 30,671,556.61         | 1.52646347 | 15.090%                                  | -0.397%                                  |
| 1999        | 53,673,434.87                           | 49,801,404.66                            | 31,831,589.94         | 1.62534827 | 6.478%                                   | 3.782%                                   |
| 2000        | 57,509,284.43                           | 54,239,992.70                            | 32,873,097.11         | 1.69970716 | 4.575%                                   | 3.272%                                   |
| 2001        | 60,546,911.24                           | 56,026,338.66                            | 32,684,184.97         | 1.78332808 | 4.920%                                   | -0.575%                                  |
| 2002        | 68,113,872.53                           | 62,926,561.96                            | 33,934,844.15         | 1.93076523 | 8.268%                                   | 3.826%                                   |
| 2003        | 83,637,836.84                           | 78,376,110.65                            | 38,072,466.79         | 2.12770489 | 10.200%                                  | 12.193%                                  |
| 2004        | 100,682,235.38                          | 94,784,502.95                            | 42,843,544.47         | 2.28116909 | 7.213%                                   | 12.532%                                  |
| 2005        | 109,726,386.38                          | 104,542,586.17                           | 46,347,909.66         | 2.31152790 | 1.331%                                   | 8.179%                                   |
| 2006        | 136,860,987.43                          | 131,693,682.56                           | 50,189,677.09         | 2.67539747 | 15.742%                                  | 8.289%                                   |
| 2007        | 171,072,649.02                          | 165,249,876.18                           | 56,512,309.22         | 2.97565725 | 11.223%                                  | 12.597%                                  |
| 2008        | 163,736,368.09                          | 156,503,987.69                           | 61,971,896.01         | 2.58375471 | -13.170%                                 | 9.661%                                   |
| 2009        | 169,437,371.42                          | 163,273,496.46                           | 58,698,899.59         | 2.83404689 | 9.687%                                   | -5.281%                                  |

|      |                |                |               |            |         |         |
|------|----------------|----------------|---------------|------------|---------|---------|
| 2010 | 181,941,930.88 | 175,137,910.63 | 64,303,944.58 | 2.77650029 | -2.031% | 9.549%  |
| 2011 | 191,248,710.82 | 182,292,379.39 | 71,226,626.70 | 2.62220119 | -5.557% | 10.766% |

*Legend:* Column 1: Year; Column 2: World Capital Inflows (million US\$); Column 3: World Capital Outflows (million US\$); Column 4: GDP (million US\$); Column 5: FGI; Column 6: FGI change from the previous year; Column 7: GDP change from the previous year;

Source: Author calculations, International Financial Statistics of the International Monetary Fund, World Bank

Table 2: *Financial Globalization Index – country group split*

| <i>Year</i> | <i>FGI Low-income economies</i> | <i>FGI Lower-middle-income economies</i> | <i>FGI Upper-Middle-income economies</i> | <i>FGI High-income economies</i> |
|-------------|---------------------------------|--|--|----------------------------------|
| 1970        | 0.07943678                      | 0.12755872                               | 0.13416779                               | 0.33113142                       |
| 1971        | 0.08102529                      | 0.13735645                               | 0.13894999                               | 0.35429643                       |
| 1972        | 0.09631686                      | 0.14789971                               | 0.15314379                               | 0.37443195                       |
| 1973        | 0.11277079                      | 0.14449264                               | 0.14760725                               | 0.35639743                       |
| 1974        | 0.11710141                      | 0.14703632                               | 0.15071679                               | 0.34441781                       |
| 1975        | 0.10525778                      | 0.15227556                               | 0.15402191                               | 0.35470074                       |
| 1976        | 0.14932187                      | 0.17087232                               | 0.17703644                               | 0.38538297                       |
| 1977        | 0.16998760                      | 0.19068770                               | 0.19744986                               | 0.39812221                       |
| 1978        | 0.17233820                      | 0.20972053                               | 0.22243223                               | 0.41435889                       |
| 1979        | 0.18200264                      | 0.21386486                               | 0.22508727                               | 0.43012350                       |
| 1980        | 0.19698650                      | 0.21904471                               | 0.23467539                               | 0.53756604                       |
| 1981        | 0.21307450                      | 0.22555175                               | 0.24447512                               | 0.60515855                       |
| 1982        | 0.22692230                      | 0.24919663                               | 0.27107144                               | 0.66042134                       |
| 1983        | 0.26212044                      | 0.28268871                               | 0.30682319                               | 0.68540797                       |
| 1984        | 0.28239103                      | 0.28937139                               | 0.31012500                               | 0.69209701                       |
| 1985        | 0.31188367                      | 0.30015670                               | 0.31701630                               | 0.78964294                       |
| 1986        | 0.30862684                      | 0.31434161                               | 0.32869179                               | 0.83643588                       |
| 1987        | 0.34405895                      | 0.34278600                               | 0.36277084                               | 0.90691723                       |
| 1988        | 0.32979073                      | 0.31989606                               | 0.32957212                               | 0.90799778                       |
| 1989        | 0.34151672                      | 0.32364859                               | 0.32840021                               | 1.02438061                       |
| 1990        | 0.37979086                      | 0.34002138                               | 0.34672144                               | 1.09162209                       |
| 1991        | 0.39713276                      | 0.38739465                               | 0.39545188                               | 1.10219331                       |
| 1992        | 0.48781046                      | 0.39251375                               | 0.40063978                               | 1.05043662                       |
| 1993        | 0.52556441                      | 0.42138832                               | 0.43004719                               | 1.15849535                       |
| 1994        | 0.60798551                      | 0.41945937                               | 0.42090729                               | 1.18637180                       |
| 1995        | 0.56097231                      | 0.44058309                               | 0.44737663                               | 1.24055133                       |
| 1996        | 0.52688369                      | 0.45242908                               | 0.45130499                               | 1.34254100                       |
| 1997        | 0.49595321                      | 0.46648183                               | 0.46801103                               | 1.50129241                       |
| 1998        | 0.52878114                      | 0.50487676                               | 0.49247750                               | 1.73354270                       |
| 1999        | 0.56156743                      | 0.55753248                               | 0.56540898                               | 1.82906736                       |
| 2000        | 0.64966455                      | 0.52702325                               | 0.53291960                               | 1.93435845                       |
| 2001        | 0.64604453                      | 0.61230094                               | 0.60783501                               | 2.01975703                       |
| 2002        | 0.68798844                      | 0.63312832                               | 0.63586300                               | 2.18617087                       |
| 2003        | 0.68830956                      | 0.65223298                               | 0.65964548                               | 2.41745324                       |
| 2004        | 0.66879795                      | 0.67999364                               | 0.70023372                               | 2.61138436                       |

|      |            |            |            |            |
|------|------------|------------|------------|------------|
| 2005 | 0.59825294 | 0.66565914 | 0.68620212 | 2.68979144 |
| 2006 | 0.54166253 | 0.71837379 | 0.75246666 | 3.17847875 |
| 2007 | 0.53843613 | 0.76351474 | 0.80041195 | 3.61759804 |
| 2008 | 0.49538092 | 0.65890292 | 0.68432010 | 3.20821094 |
| 2009 | 0.54767679 | 0.78233165 | 0.82143639 | 3.54641805 |
| 2010 | 0.52209976 | 0.76006096 | 0.81226653 | 3.58012604 |
| 2011 | 0.49128001 | 0.71227129 | 0.76486191 | 3.43969780 |

*Legend:* Colum 1: Year; Column 2: Financial Globalization Index for the Low-income economies; Column 3: Financial Globalization Index for the Lower-middle-income economies; Column 4: Financial Globalization Index for the Upper-Middle-income economies; Column 5: Financial Globalization Index for the High-income economies;

Source: Author calculations, International Financial Statistics of the International Monetary Fund, World Bank

Table 3: 3 years FGI vs GDP change

| <i>Year</i> | <i>FGI percent change from the previous year</i> | <i>GDP percent change from the previous year</i> |
|-------------|--|--|
| 1971        | 0.07336990                                       |  |
| 1972        | 0.06228177                                       |  |
| 1973        | -0.04924419                                      |  |
| 1974        | -0.03939878                                      | 0.10504584                                       |
| 1975        | 0.03074872                                       | 0.15356174                                       |
| 1976        | 0.09177113                                       | 0.21940912                                       |
| 1977        | 0.04441574                                       | 0.15165311                                       |
| 1978        | 0.05364749                                       | 0.11473177                                       |
| 1979        | 0.03443843                                       | 0.08747897                                       |
| 1980        | 0.22390219                                       | 0.13033887                                       |
| 1981        | 0.11062019                                       | 0.17889568                                       |
| 1982        | 0.09226944                                       | 0.15913477                                       |
| 1983        | 0.05157204                                       | 0.12380658                                       |
| 1984        | 0.01441784                                       | 0.02878993                                       |
| 1985        | 0.13104382                                       | -0.00919606                                      |
| 1986        | 0.07308712                                       | 0.02264672                                       |
| 1987        | 0.09614778                                       | 0.03789646                                       |
| 1988        | 0.00043354                                       | 0.05145494                                       |
| 1989        | 0.12018022                                       | 0.18215419                                       |
| 1990        | 0.06594679                                       | 0.13486792                                       |
| 1991        | 0.01925262                                       | 0.11880055                                       |
| 1992        | -0.04273575                                      | 0.05021688                                       |
| 1993        | 0.09488095                                       | 0.11686375                                       |
| 1994        | 0.02002111                                       | 0.04917743                                       |
| 1995        | 0.04325242                                       | 0.06990246                                       |
| 1996        | 0.06982049                                       | 0.01834686                                       |
| 1997        | 0.10373407                                       | 0.07397239                                       |
| 1998        | 0.15089793                                       | 0.10655995                                       |

|      |             |             |
|------|-------------|-------------|
| 1999 | 0.06478033  | 0.02090080  |
| 2000 | 0.04574951  | -0.00211569 |
| 2001 | 0.04919725  | -0.00397394 |
| 2002 | 0.08267528  | 0.03782114  |
| 2003 | 0.10200083  | 0.03271929  |
| 2004 | 0.07212664  | -0.00574671 |
| 2005 | 0.01330845  | 0.03826496  |
| 2006 | 0.15741517  | 0.12192844  |
| 2007 | 0.11222997  | 0.12531570  |
| 2008 | -0.13170285 | 0.08179447  |
| 2009 | 0.09687150  | 0.08288977  |
| 2010 | -0.02030545 | 0.12597475  |
| 2011 | -0.05557323 | 0.09660881  |
|      |             | -0.05281420 |
|      |             | 0.09548808  |
|      |             | 0.10765564  |

*Legend:* Year; Financial Globalization Index percent change from the previous year; Gross Domestic Product percent change from the previous year shifted +3 years

*Source:* Author calculations, International Financial Statistics of the International Monetary Fund, World Bank



*Figure 1. Evolution of the Financial Globalization Index*

*Legend:* Financial Globalizations Index

*Source:* Author calculations, International Financial Statistics of the International Monetary Fund, World Bank

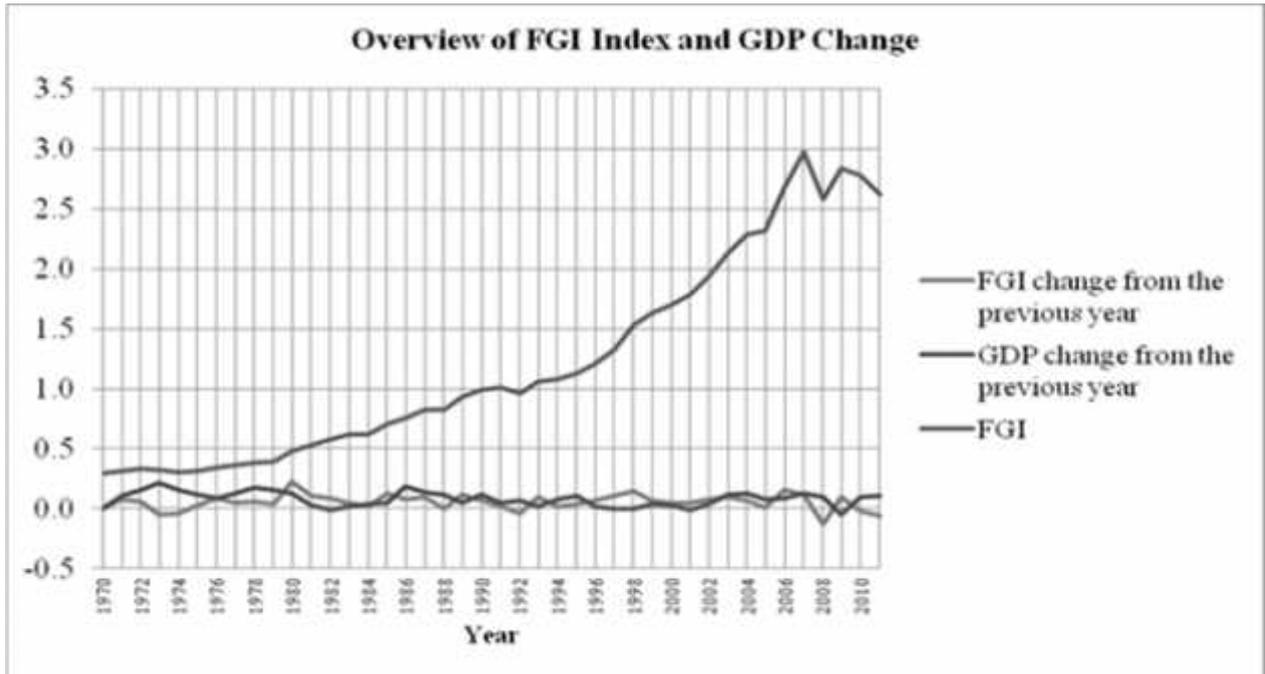


Figure 2. Overview of FGI Index and GDP change

Legend: Financial Globalization Index; Financial Globalization Index percent change from the previous year;  
Gross Domestic Product change from the previous year;  
Source: Author calculations, International Financial Statistics of the International Monetary Fund, World Bank

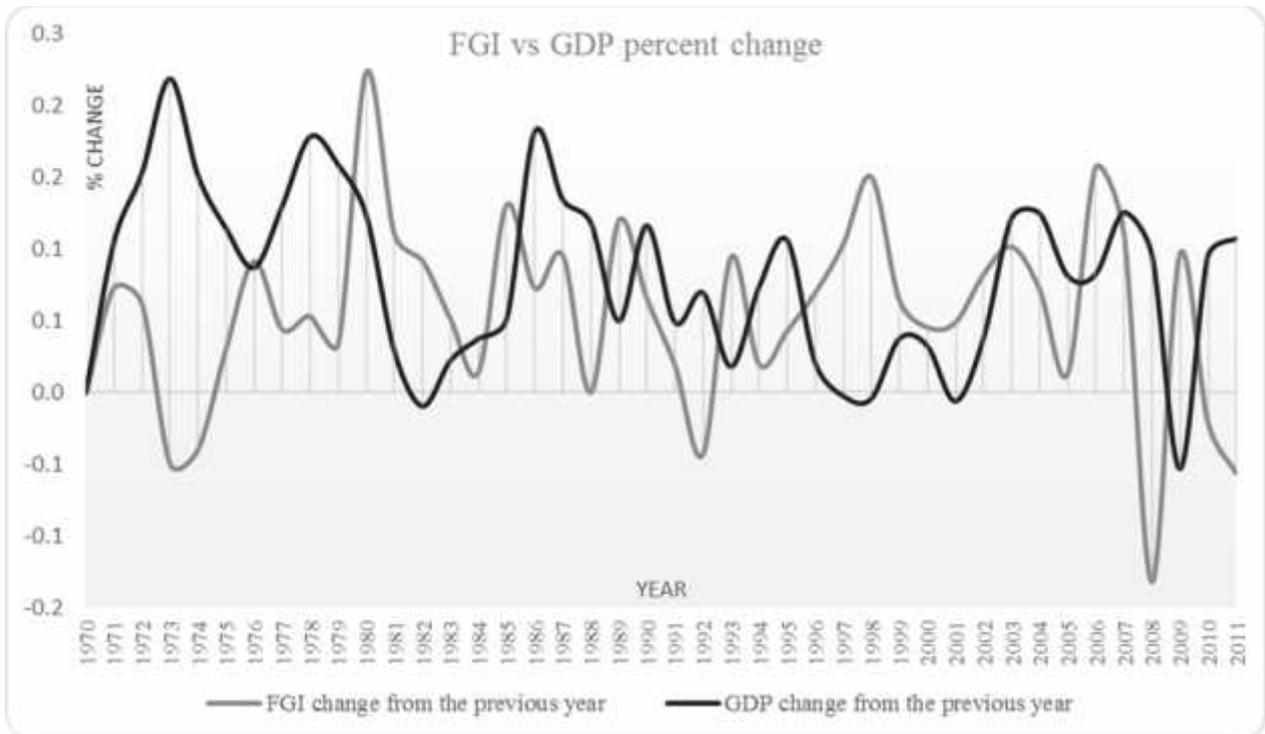


Figure 3. FGI vs GDP percent change

Legend: Financial Globalization Index percent change from the previous year; Gross Domestic Product percent change from the previous year;  
Source: Author calculations, International Financial Statistics of the International Monetary Fund, World Bank

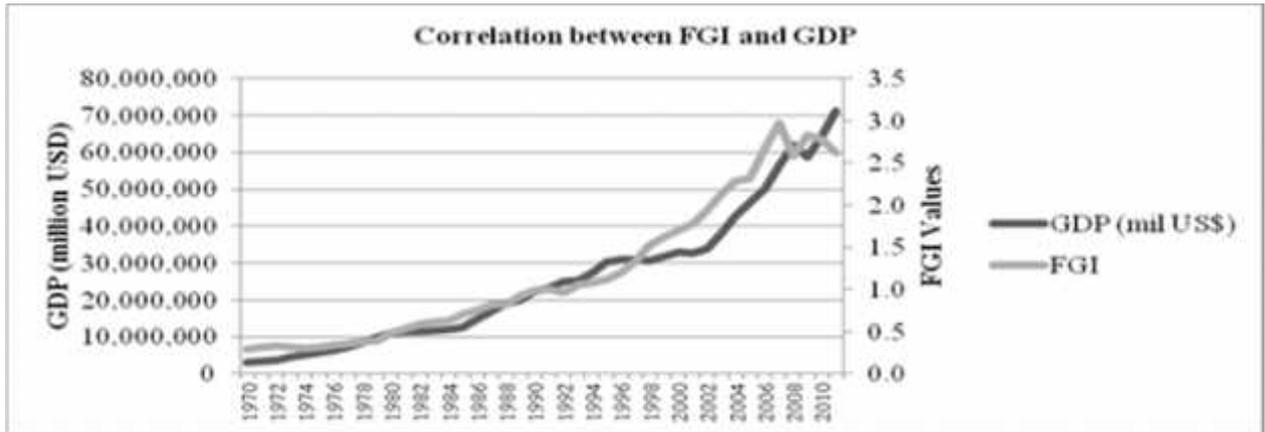


Figure 4. Correlation between FGI and GDP

Legend: Gross Domestic Product (left scale); Financial Globalization Index (right scale);

Source: Author calculations, International Financial Statistics of the International Monetary Fund, World Bank

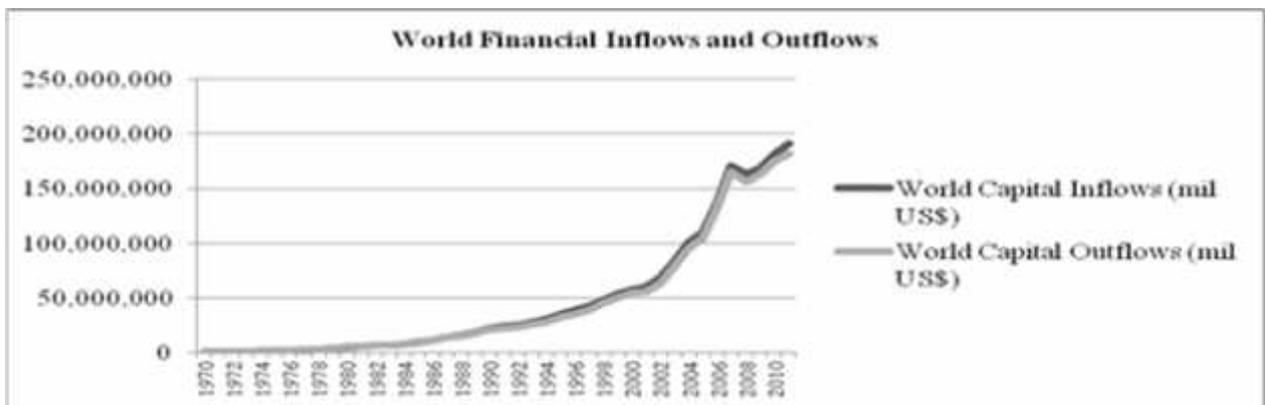


Figure 5. World Financial Inflows and Outflows

Legend: Total World Capital Inflows (million US\$); Total World Capital Outflows (million US\$);

Source: Author calculations, International Financial Statistics of the International Monetary Fund, World Bank

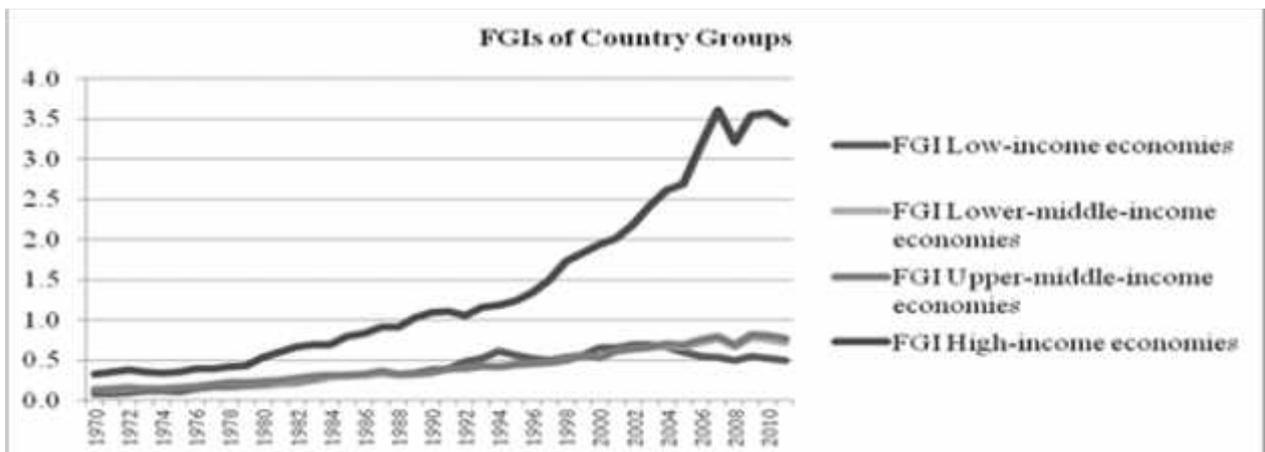


Figure 6. FGIs of Country Groups

Legend: Financial Globalization Index for advanced countries; Financial Globalization Index for Low-income economies; Financial Globalization Index for Lower-middle-income economies; Financial Globalization Index for Upper-middle-income economies; Financial Globalization Index for High-income economies;

Source: Author calculations, International Financial Statistics of the International Monetary Fund, World Bank

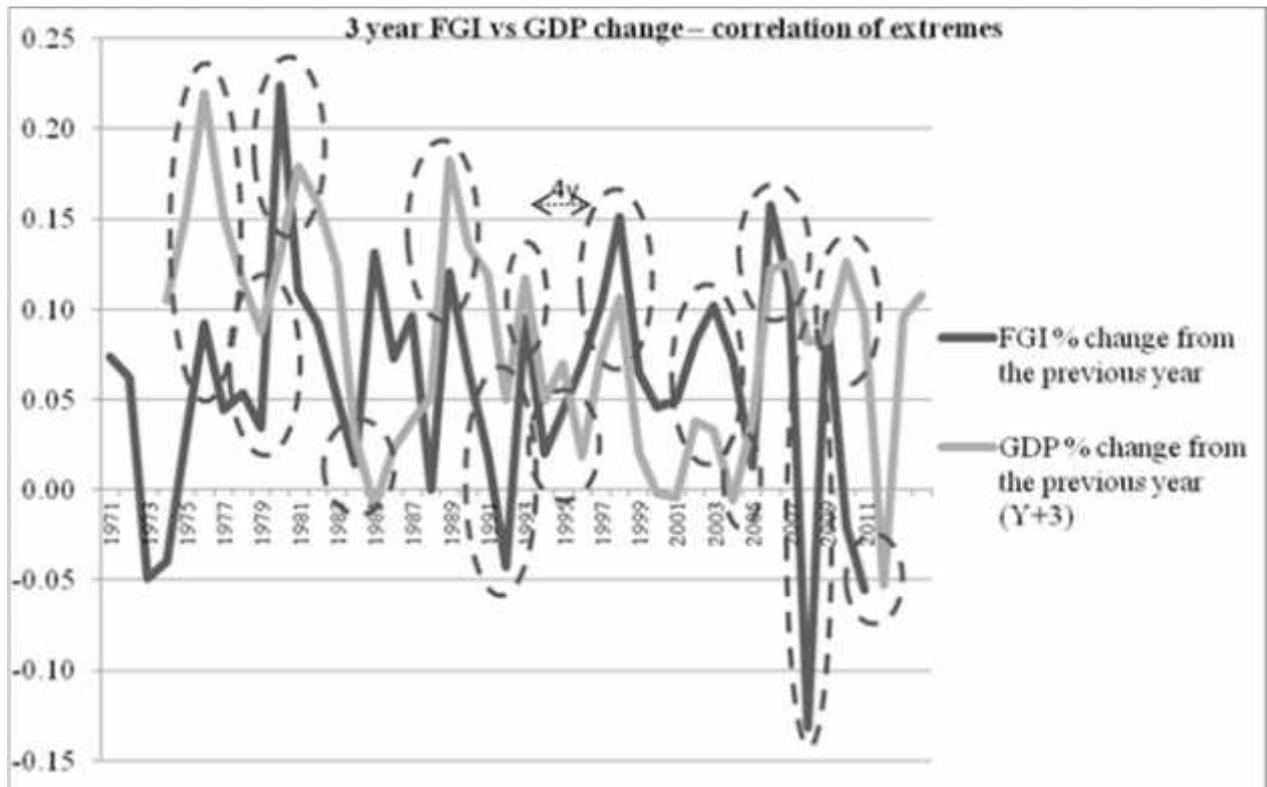


Figure 7. 3 year FGI vs GDP percent change – correlation of extremes

Legend: Year; Financial Globalization Index percent change from the previous year; Gross Domestic Product percent change from the previous year shifted +3 years

Source: Author calculations, International Financial Statistics of the International Monetary Fund, World Bank

