

Imbalances and Policies

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In this commentary I raise some doubts about our readiness to address policy questions about global imbalances. A solid policy analysis requires a well-structured theoretical model that can account for the key empirical facts about imbalances, but progress in this direction is still limited. I also discuss problems associated with the practical implementation of optimal government policies.

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1. Introduction

The term “imbalances” is often used to describe situations in which some economic units accumulate large volumes of liabilities. The economic units could be within domestic sectors (household, business, and government sectors)—in which case we refer to them as *domestic* imbalances—or different countries—in which case we refer to them as *global* imbalances. An example of domestic imbalance is the increase in household debt observed in the United States since the mid-1980s. An example of global imbalance is the increase in net foreign asset liabilities of the United States during the same period. These examples show that domestic and global imbalances are often interconnected: as domestic sectors accumulate liabilities, some of the liabilities are sold abroad.

The article by Goodhart, Peiris, and Tsomocos in this issue deals with some aspects of *global* imbalances. The article by Koenig, also in this issue, deals with *domestic* imbalances. However, Koenig’s model can also be applied to studying global imbalances once we reinterpret agents of type 1 as residents of country 1 and agents of type 2 as residents of country 2. Therefore, to keep the discussion focused, I concentrate the commentary on global imbalances. This is an issue that has been at the center stage of the policy discussion

even before the recent economic crisis. We should keep in mind, however, that many of the considerations I will make in this commentary also apply to the issue of domestic imbalances.

2. Facts about Global Imbalances

Since the early 1980s, the United States has experienced negative current account deficits, with the exception of 1991. As a result, the United States has accumulated large and negative net asset positions. Because of the economic size and its predominance in the world economy, this fact has received considerable attention in academia and policy circles due to the concerns about the possible consequences of a disorderly readjustment. From that there has been a growing interest in studying policies that could correct the imbalance and facilitate the readjustment.

Before engaging in the discussion of the policy issues, however, it would be helpful to ask the following questions. First, what are the characteristics of lending countries and the characteristics of borrowing countries? Second, is the simple measure of net foreign asset position informative about the potential for disorderly implosions of global imbalances? Third, do the models proposed in Goodhart, Peiris, and Tsomocos, in Koenig, and in the literature more generally capture the key global imbalance facts (so that we feel comfortable using these models to address policy questions)?

2.1 Who Are the Net Lenders and Borrowers?

If the United States and some other developed countries are building up large foreign asset liabilities (net borrowers), there must be countries that are accumulating positive foreign asset positions (net lenders). Among the lending countries there are several emerging economies, especially in Asia. Compared with more developed countries, emerging economies are characterized by

- high rates of growth and
- lower development of their domestic financial markets.

Of course, there are many other differences between developed and emerging economies. However, in my commentary I will focus

on these two differences. More specifically, I will discuss how cross-country differences in growth rates and financial development affect the direction of international financial flows.

2.2 Is the Net Foreign Asset Position Informative?

Gourinchas and Rey (2007a) and Lane and Milesi-Ferretti (2007) have shown that the growth in U.S. net foreign asset liabilities has been associated with a sustained growth in both gross assets and gross liabilities. If the U.S. net foreign asset liabilities are currently in the order of 25 percent GDP, the gross foreign assets are more than 100 percent of GDP. More importantly, when we decompose the gross stocks of assets and liabilities in broad investment classes, we observe that the composition of the U.S. gross foreign assets is very different from the composition of gross foreign liabilities. In particular, the United States holds a much larger fraction of foreign direct investments (FDI) and portfolio equities than foreigners hold in the United States. At the same time, a significant portion of foreign holdings in the United States are in the form of debt instruments such as Treasury bills and corporate bonds. The U.S. foreign portfolio resembles the portfolio structure of a world investment bank: it borrows abroad and reinvests the proceeds in risky foreign investments. Another important feature of the U.S. foreign portfolio is that a large portion of the liabilities are denominated in U.S. dollars while many of the asset holdings (in particular, FDI and portfolio equities) are denominated in foreign currencies.

Why is the portfolio composition important? When imbalances become unsustainable, some adjustment mechanism must bring the economy closer to a sustainable path. Which mechanism is more likely to operate depends crucially on the composition of the foreign portfolio due to important valuation effects (see Gourinchas and Rey 2007b). For example, the devaluation of many Asian currencies in 1997 brought these economies to a collapse. On the contrary, a dollar depreciation would be beneficial for the United States because, as observed above, many of its foreign assets are denominated in foreign currency while a significant portion of its liabilities are denominated in dollars. Therefore, a depreciation of the dollar induced by a slowdown of the U.S. economy is unlikely to trigger a financial crisis

of the kind induced by the 1990s devaluation of Asian currencies. Therefore, the U.S. exposure to foreign imbalances is very different from the exposure of Asian countries in the late 1990s or Argentina in the early 2000s.

It is in the choice of policies that the importance of the foreign portfolio composition becomes evident. For example, Goodhart, Peiris, and Tsomocos (in this issue) concludes that taxing capital inflows is optimal because it reduces the probability of costly default. But what if most of the inflows are not in the form of debt instruments but are instead in the form of foreign direct investment? Koenig (in this issue) shows that nominal income targeting is optimal because liabilities are nominally denominated. But what if a significant amount of borrowing is in foreign currencies like in Asia and Argentina during the 1990s?

These two examples clearly show that a simple measure of net foreign asset positions is not very informative. Policy recommendations cannot abstract from considering the composition of foreign portfolios, which in turn requires us to understand why the composition of portfolio takes certain forms. Unfortunately, as I will discuss next, our understanding of the forces that determine portfolio imbalances is still limited.

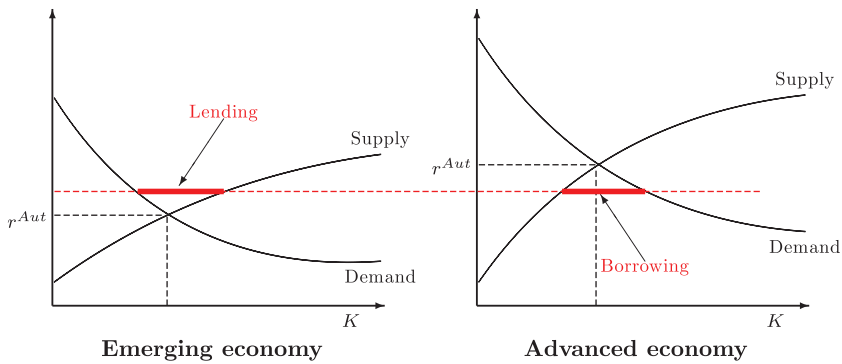
2.3 Models of Global Imbalances

I have emphasized above two facts about global imbalances:

- (i) The United States has accumulated a negative net foreign asset position while fast-growing emerging economies as a group have accumulated positive net foreign asset positions.
- (ii) The United States holds a portfolio of foreign assets tilted toward riskier investments with liabilities denominated in dollars while emerging economies tend to hold safer assets (debt instruments).

Before we can ask policy questions, it would be desirable to have a model that can replicate these properties. Thus, it is natural to ask whether the models proposed in Goodhart, Peiris, and Tsomocos (in this issue) and Koenig (in this issue) are consistent with these facts. More generally, are there models in the literature that can account

Figure 1. Demand and Supply of Savings in a Two-Country Model



for these facts? To fix ideas, I start with a schematic illustration of international asset markets that captures the key feature of most of the models proposed in the literature.

Suppose that there are two countries, each characterized by a demand and supply of savings. Demands are decreasing in prices (the interest rates) while supplies are increasing in prices. This is shown in figure 1. Net imbalances (borrowing and lending) emerge when the position of demands and/or supplies differs in the two countries. In particular, the autarky interest rate determined by the intersection of domestic demands and supplies must be lower in lending countries. This will be the case in the left-hand-side panel which, for convenience, I assume to be representative of an emerging economy.

Why is the autarky interest rate lower in emerging economies? In answering this question we can try to see how various differences between emerging and advanced economies would affect the position of the demands and supplies of savings in the two countries.

As noted above, an important difference is that emerging economies experience faster growth. In many models, including those proposed in Goodhart, Peiris, and Tsomocos (in this issue) and Koenig (in this issue), higher output growth also implies higher consumption growth. Because of concave utility, agents would like to save less to smooth consumption intertemporally. As a result, the supply of savings in the emerging economy moves to the

left, increasing the autarky interest rate. Therefore, when the two economies become integrated, these models generate the counterfactual result that emerging economies become net borrowers, while in the data we see the opposite. With endogenous investment, the problem is further intensified because higher growth is typically associated with higher investment. This shifts to the right the demand of savings for the emerging economy, further increasing the autarky interest rate.

Recognizing that differences in growth cannot explain the flow of capital out of the emerging economies, several papers in the literature have explored the role played by other differences. Special attention has been paid to differences in financial markets development. The idea is that financial development affects the positions of the demand and/or supply of savings. Caballero, Farhi, and Gourinchas (2008) proposed a theory in which the demand for savings increases with financial development. As financial markets become more sophisticated, the ability to issue marketable investment vehicles like bonds and equities increases. This implies that, in terms of figure 1, the demand of savings in the advanced economy is located farther to the right than in the emerging economy.

Other papers proposed theories where financial development affects the supply of savings. The idea is that emerging economies either have lower ability to insure idiosyncratic risks (Willen 2004, and Mendoza, Quadrini, and Rios-Rull 2009) or that they face higher volatility of idiosyncratic shocks (Carroll and Jeanne 2008). In both cases, the position of the supply of savings in the emerging economy (left panel of figure 1) is located more to the right than the supply of savings in the advanced economy (right panel of figure 1).

Sandri (2010) and Angeletos and Panousi (2011) provide a theory based on uninsurable investment (entrepreneurial) risks where lower financial development generates a shift to the left of the demand of savings (due to the fact that investment is less attractive when the risk is not insurable) and a shift to the right of the supply of savings (due to higher needs to insure the risk). Song, Storesletten, and Zilibotti (2011) also provide a theory based on financial market incompleteness which focuses on the transition dynamics. Other theories proposed in the literature focus on demographic differences. See, for example, Henriksen (2005), Curtis, Lugauer, and Mark (2010), and Ferrero (2010). The impact of demographic differences

can also be illustrated schematically using figure 1 since they change the incentive to save and, therefore, the position of the supply of savings.

These theories provide some mechanisms that counterbalance the tendency of emerging economies to import foreign capital due to faster growth. Although it is still an open question whether these mechanisms are quantitatively relevant to counterbalance the growth effect on savings, they provide important insights about the formation of *net* global imbalances. However, most of these contributions do not explain or account for the *portfolio* imbalances described above. Thus, explaining portfolio imbalances remains an open and ongoing research question in international macro-finance.

Why is a complete theory of global portfolio imbalances still unavailable? The main reason is that explaining *portfolio* imbalances is much more challenging than explaining *net* imbalances.¹ This is because explaining portfolio imbalances requires the use of models with multiple types of assets. Furthermore, to fully capture the global portfolio imbalances, the models need to allow for an active role of governments since a non-negligible portion of foreign assets are issued and held by governments. For example, a non-negligible portion of U.S. Treasury bills are in the portfolios of foreign central banks. Unfortunately, modeling the active role of governments as optimizing agents is not easy since governments are large players and, contrary to a competitive equilibrium with atomistic agents, governments internalize the impact of their actions on markets. This also implies that in an integrated economy, governments may act strategically against each other and engage in international policy competition.

To summarize, there is limited progress toward the development of a model that fully captures global portfolio imbalances. As I argued earlier, portfolio imbalances are important for policy analysis and, in the absence of an adequate theoretical framework, policy recommendations aimed at correcting global imbalances may be incomplete.

¹There is some notable progress in this direction such as Caballero, Farhi, and Gourinchas (2008), Mendoza, Quadrini, and Rios-Rull (2009), Gourinchas, Govillot, and Rey (2010), and Maggiori (2011). However, these papers are partial contributions to an ongoing research agenda that is still developing.

3. Imbalances and Policies

I first discuss some issues related to the taxation of capital flows. I will then discuss some issues related to the conduct of monetary policy in an environment with international mobility of capital.

3.1 *Taxing Capital Flows*

One of the policy conclusions of Goodhart, Peiris, and Tsomocos (in this issue) is that taxing capital outflows is optimal for the lending country. This is a standard result in international public finance and can be easily illustrated using figure 1.

Suppose that the emerging economy, which is a net lender, introduces a tax on the capital exported to the advanced economy. The tax, denoted by τ , introduces a wedge between the domestic and foreign interest rates, and in equilibrium the following condition must be satisfied:

$$r^{Emerging} = r^{Developed} - \tau.$$

This condition says that, with mobility of capital, savers in the emerging economy must be indifferent between earning the domestic interest rate, $r^{Emerging}$, and the foreign interest rate $r^{Developed}$ net of the tax τ .

The effect of the tax is to decrease the interest rate in the emerging economy and to increase the interest rate in the developed country. As a result, the volume of lending (trade) from the emerging economy to the developed economy declines.

From the perspective of the emerging economy, the outflow tax has positive and negative welfare effects. The positive effect derives from the improvement in the terms of trade: on the remaining foreign lending, the emerging economy earns a higher return since the interest rate in the developed country increases. Even if private savers receive a lower net return $r^{Developed} - \tau$, the welfare for the whole country includes the tax revenue. The cost is due to the reduction in the volume of lending. As for an optimal trade tariff, there is a tax rate that maximizes the net welfare benefit for the taxing country.

The main problem in using this result as a policy recommendation is that it only works if the borrowing country does not respond to the outflow tax by taxing capital inflows. Since the gains for the

emerging economy generated by the tax hike are at the expense of the borrowing country, it is unlikely that the latter does not respond with some type of policy intervention. This may generate a tax war, similar to a trade tariff war, whose outcome is characterized by welfare costs for both countries. Of course, if there are some externalities induced, for example, by the increased likelihood of default associated with excessive borrowing, the capital inflow tax may be desirable. However, it is not obvious whether the gains from reducing the cost of default more than compensate for the losses from the tax war.

3.2 Imbalances and Monetary Policy

Although monetary policy does not play a central role in the analysis of Goodhart, Peiris, and Tsomocos (in this issue), it is not difficult to see that monetary policy could play a role in the context of this model. For example, monetary stability could affect the currency denomination. If the debt of a country is denominated in domestic currency, then domestic inflation is another way of defaulting on foreign borrowing (see Aguiar et al. 2012).

In Koenig (in this issue), inflation plays a direct role because it facilitates risk sharing. However, time consistency could be a real problem: *ex post*, it is always optimal for borrowing countries to inflate. This may explain why foreign-currency denomination of debt is common in countries with weak monetary discipline.

More generally, the role of monetary policy may change dramatically as financial markets become more globalized. On the one hand, financial integration implies that monetary authorities are less effective in choosing the interest rate. Furthermore, if it is optimal to intervene in response to financial shocks, foreign (global) financial shocks become more important for policy intervention than domestic financial shocks. On the other hand, monetary policy may affect the terms of trade in goods, and monetary authorities may engage in beggar-thy-neighbor policies. This, in turn, may lead to non-cooperative monetary policies with sub-optimal outcomes. See, for example, Corsetti and Pesenti (2001) and Cooley and Quadrini (2003).

These few considerations show that monetary policy could play a very important role in a world with globalized markets, that is,

in a world where global imbalances could emerge. It is then natural to ask whether monetary policies should be designed to target the imbalances. As for the analysis of other policies, this requires the use of a model that, in addition to formalizing some channel of monetary non-neutrality, is also capable of accounting for the key imbalance facts described above.

4. Concluding Remarks

In this commentary I raised some doubts about our readiness to address policy questions about global imbalances. My reservations were motivated by the fact that we are still in the process of fully understanding the forces that cause global imbalances. There is no shortage of opinions in academic and policy circles, of course. However, a solid policy analysis requires a well-structured theoretical model that can account for the key empirical facts about global imbalances. Although there has been some progress in building such a model, the available theory is still limited.

There is also a limitation in the practical implementation of optimal government policies toward global imbalances. The basic presumption about the design of optimal policies is that governments act optimally and the imbalances result from the interaction of private agents. The problem with this assumption is that in many experiences of imbalances around the globe, government policies were at the origin of the imbalances. For example, foreign borrowing from governments has been very important in the buildup of the crisis in Argentina in the 2000s and in the Greek crisis more recently. Although direct government borrowing was not important in the 1990s crisis in Asia, it has been pointed out that government guarantees of bank loans did play a role. Ireland is another example of government involvement in loan guarantees prior to the recent euro crisis. It is then natural to express some skepticism about the practical implementability of optimal government policies toward imbalances when governments are sometimes the source of the imbalances: Should the governments of Argentina and Greece have taxed themselves for not recognizing the potential stress caused by excessive foreign government borrowing? Should the Asian governments have taxed capital inflows to correct for the inefficiencies associated with loan guarantees? Of course, this is not to say that all episodes

of global imbalances are consequences of ill-conceived government actions. However, it is undeniable that in several episodes of sudden stops, governments played an important role in facilitating the buildup of the imbalances.

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