

Should Capital Flow to Poor Countries?

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Economists tend to assume that capital should move from advanced economies—those with abundant capital—to developing ones—those with little capital and abundant labor. However, this line of thinking is not only simplistic and empirically unverified, but it is also dangerous. It can, for instance, encourage developing countries to attract capital they cannot absorb and is ultimately destabilizing.

- Numerous considerations beyond relative labor and capital stocks (factor endowments) affect the profitability and risk associated with international investment. These forces frequently work to retain capital in advanced countries and to encourage capital outflows from developing ones. In comparison with advanced countries, developing economies have higher start-up costs, weaker institutions, more sovereign risk, less-skilled workers, and shallower capital markets, all of which discourage investment. Moreover, important forces also cause capital to flow out of developing countries—including political and expropriation risk, limited investment opportunities, the need for diversification, and relatively high savings rates.
- Governments play a big role in capital flows through their accumulation of reserves. From 2000 through 2010, developing countries added \$5.5 trillion to their stock of foreign exchange reserves and had an aggregate current account surplus of only \$3.8 trillion. The official acquisition of reserves more than offset the net flow of private capital to developing countries. Some of this reserve accumulation is clearly excessive, but it is difficult to say how much.
- Developing countries that run large current account deficits should not assume that doing so is fine because they are poor. They can clearly benefit from inflows of foreign capital, especially in the form of foreign direct investment, provided they are deployed for productive purposes and are not overly prone to sudden stops or reversals. Likewise, advanced countries should not assume that large current account surpluses are natural because they are rich.
- Above all, the recent global financial crisis has shown that even in the most capable environments, the potential for misallocating capital is immense. Thus, the presumption that large amounts of capital should flow from rich to poor nations, whose institutions are even weaker, should always be treated with skepticism.

The belief that capital should be moving from rich to poor countries is so widespread, it has practically become a creed of international economics. For instance, former U.S. Treasury secretary Lawrence Summers noted that it is only logical for capital to flow from advanced economies—which have abundant capital—to developing ones—which have little capital and abundant labor.¹ Summers is not alone in this view. In a recent column in the *Financial Times*, Martin Wolf commented that “the net flow of funds from the poor to the rich is altogether perverse.”² Yet, on net, capital has flowed from poor to rich countries for many years.

The assumption that money should move from the rich nations to poor ones is not only simplistic—many valid explanations exist for why this does not happen, and they have been widely explored in the academic literature³—but also dangerous. It can encourage developing countries to attract capital they do not need or cannot absorb. Or, when these countries receive capital inflows, the belief that this is “how it should be” can make them complacent about the far-reaching reforms needed to successfully and sustainably deploy imported capital. This assumption can also exacerbate international tensions by leading rich countries that run large current account deficits to believe that their external imbalances must be the result of anomalous policies by poor countries, instead of a natural outcome of their own policies and economic structures.

Moreover, imprudent borrowing by poor countries can have other systemic consequences, namely debt crises, sudden stops of money flows, and costly international bailouts. For example, the flood of capital from higher-income European countries to less affluent European nations (the Baltic countries, Greece, Portugal, Spain, and Ireland), as the latter pegged to or adopted the euro, is the most recent example of how this credo can go badly wrong. The subprime mortgage market at the heart of the recent global financial and economic crisis that began in the United States represents another, albeit strictly domestic, example.

To be sure, it is easier to justify the flow of certain types of capital to developing countries. Thus, flows of foreign direct investment (FDI), which embody a transfer of technology and have intrinsically high risk-carrying capacity, are more likely to yield sustained benefits than debt-creating short-term flows. Also, some capital flowing from poor to rich nations in recent years may have been doing so for the wrong reasons. Specifically, as we discuss below, a significant part of the capital outflow from some emerging markets, beginning with China, has taken the form of excessive reserve accumulation by their central banks. But in general, the economic argument that capital should flow from the rich to the poor—which is often cast in moral or political tones—does not hold.

Given this situation, when is the flow of capital from rich to poor nations appropriate, and when is it not? When should the opposite be occurring?

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Important policy consequences arise from the answers to those questions. But to address them, we first need to map the terrain of the international flows of capital.

Who Attracts Capital?

At first glance, the movement of capital from developed countries to developing ones makes sense. Capital in developing countries, where there is a relative abundance of labor, should be highly productive. In advanced economies, where there is a relative abundance of capital, it should be less productive. Therefore, if investors are seeking the highest return—as they are often assumed to do—developing countries seem to present the best opportunity.

In a paper that spawned wide-ranging academic debate, Nobel laureate Robert Lucas pondered the question, “Why doesn’t capital flow from rich to poor countries?”⁴ Using a standard production function, he estimated that the marginal rate of return on capital was 58 times higher in India than in the United States, whereas the return on labor was much higher in the United States than in India.

Consider another example. In 2001, high-income countries owned more than 20 times as many tractors as low-income countries did, proportionate to land area. At the same time, high-income countries used one-twelfth as much agricultural labor as a share of the labor force, and an agricultural worker in high-income countries was more than 70 times as productive as one in low-income countries. The northward flow of millions of farmhands is thus not surprising. But the productivity of farmworkers in poor countries could clearly be boosted by the increased use of tractors. Should not capital (to buy tractors), then, be flowing in the opposite direction?

As it turns out, empirical evidence only weakly supports this theory of capital flows based on factor endowments (stocks of labor, capital, and other resources). The correlation between a country’s per capita income and net capital outflow is positive but extremely weak.

Take the limit case as an example: Capital is scarcest and labor most abundant in the world’s poorest countries, yet they receive no private bank lending or portfolio investment. Although they do attract FDI, it is only at a rate similar to richer countries. Moreover, though many poor countries run trade deficits, official aid and migrant remittances provide the financing that makes this possible, not private capital inflows.⁵

The current account balance, a useful proxy for measuring total capital flows, equals the sum of the trade balance plus earnings from abroad and net transfers, including aid and remittances. This is the mirror image of the capital account;

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countries with a current account deficit are capital importers, whereas countries with a current account surplus are capital exporters.

By definition, the current account balance is the difference between a country's total income and its domestic absorption, so it represents a country's net savings invested abroad in any given year (see box 1). In other words, a country's current account balance is the net outflow of capital from private and public sources within the country, including reserve accumulation by its central bank.

Box 1. LIMITATIONS IN MEASURING CAPITAL FLOWS

Capital flows are notoriously difficult to measure, and the capacity of both developing and advanced countries to keep track of them is limited. In many developing countries, investors underreport capital flows in attempts to avoid capital controls on inward, and especially on outward, investment. Because of the difficulties in obtaining consistent data on capital flows over many years and across a large group of countries, here we use the widely available data on current account balances as an indirect measure of net capital flows. However, there are many limitations to this approach.

The relation of the current account balances (CAB) to net private capital flows (NPCF) is given by the following identity:

$$\text{CAB} + \text{NPCF} = \text{Change in reserves} + \text{Errors and omissions}$$

(There are other components of the balance of payments, such as official capital transactions that are not included in the change in reserves, but these are typically small.)

Whereas NPCF represent market-driven flows, the change in reserves represents a decision by the central bank. Therefore, the CAB includes both official and private decisions, even though, for many aspects of the discussion, separating the two is desirable.

The final component, errors and omissions, ensures that the balance of payments sums to zero. Because many components of the balance of payments are collected independently, statistical discrepancies are expected, though errors and omissions can also account for capital flows or trade that is unreported in an effort to avoid taxes or regulations. However, official measures of net capital flows include all errors and omissions implicitly as capital flows, and there is a general presumption that large parts of the errors and omissions reflect unreported flows of capital, especially "capital flight" from developing countries.

As the table below shows, errors and omissions typically represent a small, though nontrivial, fraction of the balance of payments.

EMERGING MARKET BALANCE OF PAYMENTS (PERCENTAGE OF GDP)

ASPECT	PERIOD OR YEAR			
	2002–2006 Average	2007	2008	2009
Current account balance	3.0	4.2	3.7	1.9
Net private capital flows	2.1	4.4	1.0	1.3
Net private inflows	5.2	11.0	4.3	3.0
Net private outflows	3.1	6.6	3.4	1.7
Change in reserves	4.5	7.7	3.9	2.8
Errors and omissions	–0.2	0.2	0.3	0.9

Source: International Monetary Fund data.

Another complication in measuring capital flows relates to migrant remittances and official aid and other transfers. In the aggregate, net remittance inflows to developing countries have averaged about 1.5 percent of GDP during the past decade, while aid inflows have averaged just below 1 percent, though they are considerably larger for certain countries. These figures are included in the current account balance because they are considered “current flows” whose effect is extinguished in less than one year; but in fact, some migrant remittances and aid flows actually represent investments and could just as well be counted in the capital account.

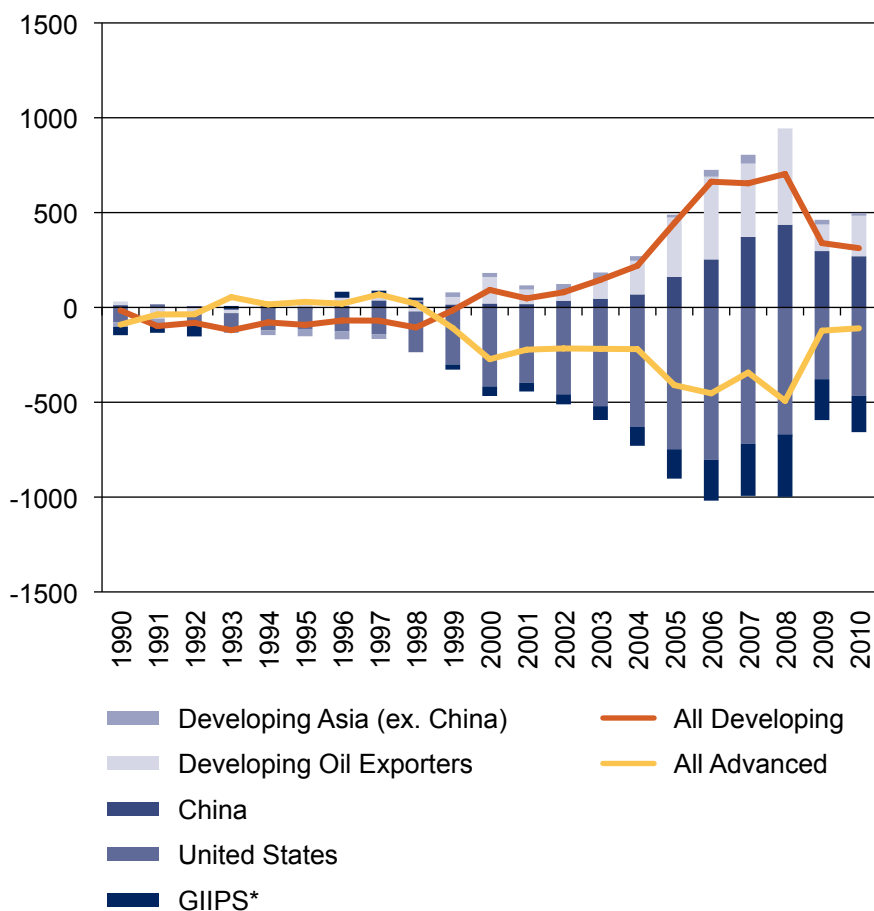
Source: John Cuddington, *Capital Flight: Estimates, Issues and Explanations*, Princeton Studies in International Finance 58 (Princeton, N.J.: Princeton University, 1986).

One advantage of using the current account balance is that, unlike data on capital flows, it is universally and historically available on a comparable basis. However, this method also has the drawback of aggregating all types of capital flows, which differ in important ways. For example, the motivations behind building a factory or purchasing a large share in a company (that is, FDI) differ from those behind buying stocks or bonds (portfolio investment); as such, the two flows behave differently, with portfolio investment typically more volatile than FDI.⁶

With this caveat in mind, we use the current account balance to test the theory that capital should flow from rich to poor nations and find that the opposite occurs in practice. Over the decade that preceded the financial crisis, developing economies saw their cumulative current account surplus widen (figure 1). From

2000 to 2009, these countries ran an average current account surplus of 2.6 percent of gross domestic product (GDP), implying a net outflow of capital toward advanced countries, which ran a current account deficit of 1 percent of their much larger GDP. Why did this happen? Because many forces—and not only factor endowments—affect capital flows between countries.

Figure 1. CURRENT ACCOUNT BALANCES, 1990–2010
(billions of dollars)



*Greece, Ireland, Italy, Portugal, and Spain

Source: International Monetary Fund data.

To follow this explanation in detail, it is useful to start with the United States and China, where the biggest absolute swings in current account balances occurred. China's current account surplus increased from 1.7 percent of GDP in the 1990s to more than 10 percent in 2007 on the back of a big increase in domestic savings, which grew from 41 percent of GDP in the 1990s to an extraordinary 51 percent of GDP in 2007. Economists have been unable to agree on the cause of China's unprecedented savings increase; explanations

include weak social safety nets, economic structures that encourage investment and export growth over domestic consumption, underdeveloped financial institutions, a rise in corporate savings, and demographic changes created by China's one-child policy.⁷ Though many other emerging markets also saw current account surpluses increase, China's size meant that it accounted for a very large share of the overall developing-country surplus—approximately 60 percent in 2007 and 2008.

Meanwhile, the U.S. current account plunged deep into deficit, reflecting, as in China, big domestic shifts. Following the burst of the Internet bubble in 2001, the Federal Reserve slashed interest rates. As the economy recovered, a historic building and spending spree ensued. Large tax cuts, enacted even as war spending soared, also fueled the boom.

Outside China and the United States, three factors have widened current account balances in recent years—the first two raised surpluses in many developing countries, and the last one increased deficits in advanced countries. First, surging oil and commodity prices drove up exports in many developing countries, and they saved much of this income. Developing-country oil exporters saw their average savings rate climb from 30 percent in 2001–2003 to more than 43 percent in 2006–2008, while domestic investment stayed steady at about 25 percent. As a result, their cumulative current account balance swelled from an average of \$50 billion to \$210 billion.⁸

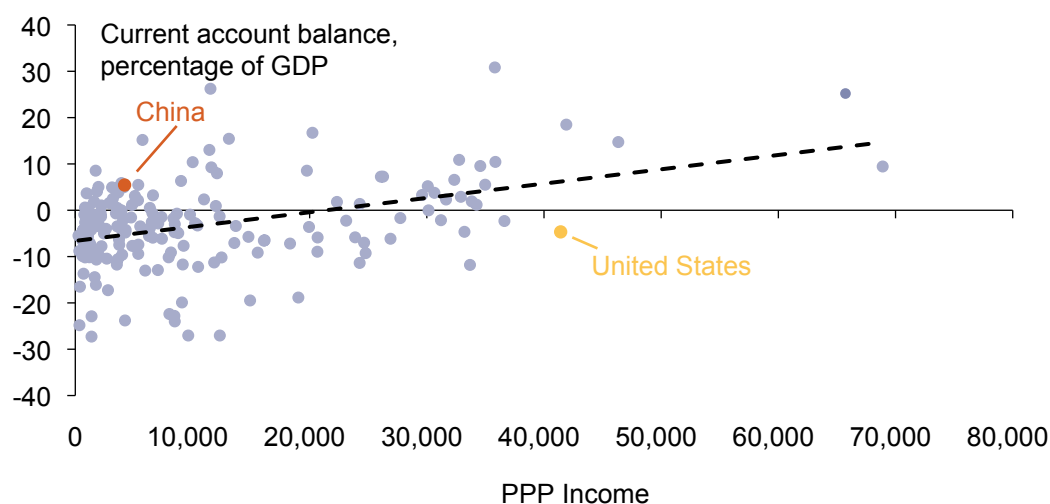
Second, in 1997–1999, the fallout from the massive financial crisis in Asia (which China largely avoided) forced many middle-income developing countries to substantially cut back investment and increase domestic savings as the excesses that preceded the crisis were corrected. At the same time, for precautionary purposes and other reasons discussed below, central banks accumulated large amounts of foreign currency reserves. In Indonesia, Malaysia, the Philippines, and Thailand, which were among the countries most severely affected by the crisis, the average current account balance rose from –4.6 percent of GDP in 1990–1997 to 5.4 percent in 1998–2009.

Finally, advanced economies on the periphery of the newly established euro area saw domestic interest rates fall to German levels, demand boom, and investment pour in. As a result, current account deficits widened precipitously in Greece, Ireland, Italy, Portugal, and Spain, falling from an average of –1 percent of GDP in the 1990s to an average of –5.7 percent in the 2000s. The new EU member states in Eastern Europe, several of which were reaching advanced-country status, registered even larger deficits.

This brief account illustrates that the question of “what factors attract capital?” cannot be reduced to a simple examination of factor endowments and income levels—many other variables are also at work. Regression analysis of the

relationship between income levels and current account balances in more than 170 countries during the last thirty years confirms this. Though the correlation between income and capital outflows is statistically significant and positive, it has weakened in each successive decade. Moreover, incomes explain only a tiny fraction of the variance in current account balances (figure 2). Other factors, such as the balance of the government budget, actually explain more.

Figure 2. INCOME AND CURRENT ACCOUNT BALANCES, 2000–2009 (average; heavy dashed line represents the best fit for all countries)

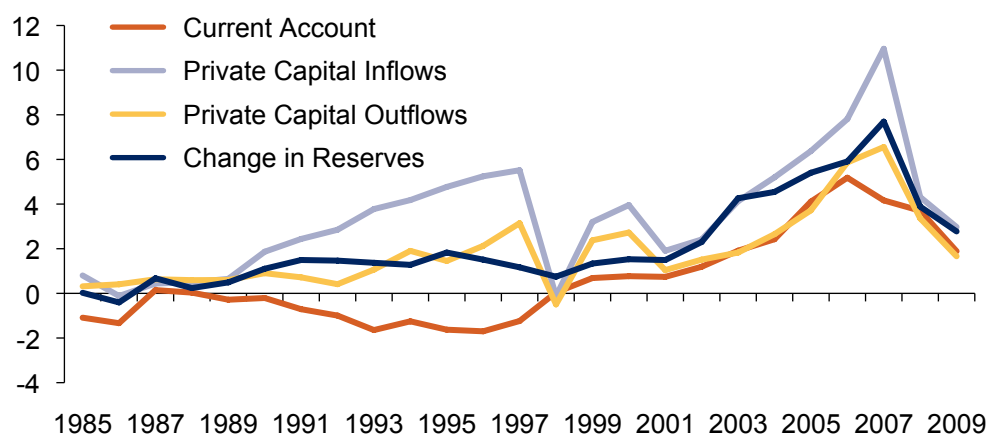


Source: International Monetary Fund data.

China and the United States, the two most obvious counterexamples to what theory anticipates, are not responsible for the poor explanatory power of income. Both countries are less than one standard deviation away from the trend line and not, therefore, unique outliers to a hard-and-fast rule. In other words, many other rich countries run current account deficits, and many other poor countries run surpluses.

Total capital flows between countries are composed of public and private flows. As it turns out, net private capital flows (inflows minus outflows) to emerging markets tend to be positive, though they typically fall in a modest range of 1 to 2 percent of GDP. As shown in figure 3, and contrary to the factor endowment theory, private capital outflows from emerging markets are nevertheless large—typically representing 60 to 80 percent of private capital inflows in recent years. Perhaps more strikingly, capital outflows from the public sector—namely, reserve accumulation by central banks—have more than offset net private inflows and have also exceeded the current account surplus of emerging markets in recent years.

Figure 3. EMERGING MARKET BALANCE OF PAYMENTS, 1985–2009 (percentage of GDP)



Note: Data prior to 2002 includes Hong Kong, Israel, Korea, Singapore, and Taiwan.

Source: International Monetary Fund data.

What motivates these private and public flows? We begin with private flows.

Why Does Private Capital Flow From Poor to Rich Countries?

We approach the issue of why private capital flows from poor to rich countries from two opposing angles. First, we consider what factors could push the return on private capital in developing countries below the level predicted by factor endowments. Second, we ask which factors make it attractive for developing-country firms and individuals to invest in advanced countries, despite the shortage of capital at home.

Why Investing in Developing Countries Can Be Less Attractive Than Factor Endowments Suggest

In comparison with advanced countries, developing economies have higher start-up costs, weaker institutions, more sovereign risk, less-skilled workers, and shallower capital markets—all factors that discourage investment.

Start-up costs. As discussed above, the primary assumption underpinning the theory that capital should flow to developing countries is that capital there

is much more productive *on the margin*. Even if this were true, international investors must first decide whether to add to their existing investment at home or to start investing abroad—a choice that involves large initial costs, including adapting to new, weaker, and less predictable legal and financial systems along with unfamiliar business environments.⁹ In countries with a poor transportation infrastructure and unreliable electric power, the start-up costs associated with building a new factory may well outweigh any labor cost advantage.

Institutional weaknesses and policy-induced distortions. Even once initial investments are made, institutional weaknesses likely reduce marginal returns. Low incomes are strongly correlated with weaker governance, more burdensome business climates, and less competitive markets.¹⁰ These factors can dominate other considerations and can even lead to capital outflows.¹¹ There are numerous examples of international investors discriminating against countries with poor or unreliable financial information, unfamiliar regulatory environments,¹² unstable political environments,¹³ and poor labor quality.¹⁴ Partly for these reasons, investors demonstrate a well-documented home bias, preferring to hold domestic assets over foreign ones, even when the marginal returns on the latter are (or appear) higher.¹⁵

Despite their gradual improvements in financial openness, emerging markets still have far more capital controls and taxes on inflows, discriminatory tax policies, and exchange rate controls than do advanced economies. A recent survey of 182 countries found that, of all countries below the median level of capital account openness, only one is an advanced economy—Iceland, which dramatically tightened its capital account following the collapse of its financial system.¹⁶ These controls distort capital inflows and tend to make investing in developing countries less attractive.¹⁷ In addition, barriers to international trade, such as tariffs and inefficient customs and transportation, are also more prevalent in developing countries. This can also discourage capital inflows, because trade and FDI are often linked through global production chains.¹⁸

Sovereign risk. Developing countries have historically defaulted on their sovereign debt much more frequently than have advanced countries, and many developing countries have defaulted repeatedly. Reinhart and Rogoff find that, since 1900, eighteen countries have defaulted or restructured multiple times; and only two were advanced economies.¹⁹ Because devaluation, deep recession, and defaults of private creditors nearly always accompany sovereign default, it has often spelled disaster not just for creditors but also for foreign investors and business owners (not to mention the country itself).

However, the sustainable level of sovereign debt is subject to many factors, and calculating risk-adjusted expected returns for investment in countries prone to default presents major challenges. Though investors struggle to gauge the likelihood of sovereign default, they know that it would be extremely costly and

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that where it happens once, it might happen again. Therefore, it is not surprising that many developing countries have difficulty attracting capital; in fact, Reinhart and Rogoff note that it is more surprising that “serial defaulters” attract as much capital as they do.

Diversification. Finally, the assumption that advanced-economy investors simply seek the highest returns may not be accurate. Obstfeld and Taylor argue that a desire for safety also drives capital flows, which induces investors to diversify, hedge, and share risk, rather than maximize returns from one particular position.²⁰ Though this objective will likely lead to some diversification into developing countries, it provides, other things being equal, a stronger incentive to spread capital across sectors and instruments in developed countries, where capital markets are deeper, more sophisticated, and generally considered safer than those in developing countries.

Why Developing-Country Residents Invest in Developed Markets

Most explanations of why capital does not flow to developing countries emphasize deterrents that reduce the attractiveness of developing countries. However, several important forces also encourage capital to flow out of developing countries, including their high savings rates, limited investment opportunities, and need for diversification.

High savings and windfalls. Savings rates are typically higher in developing economies than in advanced economies. Most people (and certainly economists) will find this surprising, because one would assume that rich people save more than poor people, particularly those whose incomes are barely at subsistence levels. But that is not so. From 2000 to 2007, high-income countries saved an average of 20 percent of GDP, while middle- and low-income countries saved 28 percent of GDP. For some large developing countries, mainly those in Asia, savings rates were even higher.

These high savings rates imply that, in any given year, developing countries have more capital available for domestic investment relative to the size of their economies than do developed economies. In China, an extreme example, gross savings averaged 45 percent of GDP from 2000 to 2007. Therefore, for China to be a net importer of capital, investment would have had to exceed 45 percent of GDP—an extraordinarily high level, even for a rapidly growing country—during the same period. Conversely, the United States saved an average of only 14 percent of GDP during the same period, while investing 20 percent.²¹

In resource-rich countries, windfall profits from commodity price surges frequently motivate even higher savings rates and large current account surpluses simply because it is unrealistic to consume or invest so much at home in a short

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time. For example, as discussed below, a large portion of the extra revenue from the surge in oil prices during the 2000s was saved by oil exporters.²²

Given developing countries' high savings rates and low rankings in investment and competitiveness surveys, it is not surprising that many developing-country investors choose to place some of their portfolio in advanced-country assets. Viewed this way, investment in developing countries may be less constrained by insufficient domestic savings than by a shortage of desirable investment opportunities.²³ It follows that capital outflows from developing countries are, in fact, often appropriate; otherwise, inefficient investments could result.

Diversification. Investors in developing economies, just as those in developed countries, likely have a natural preference for the stronger investment environments and deeper capital markets of advanced economies. In addition, given the high savings rates and low stock market capitalization in developing countries, there is a lot of potential for them to invest in advanced countries. In 2009, emerging markets, home to 46 percent of global savings, accounted for only 23 percent of world stock market capitalization. If, aiming to diversify perfectly, both developing- and industrial-country residents held investments proportional to the world portfolio of stocks, they would place 77 percent of their savings in industrial countries and only 23 percent in developing countries. Reflecting their higher savings rate, such perfect diversification would imply an annual net capital outflow of \$2.9 trillion from developing countries to industrial countries—nearly 5 percent of world GDP.

Home biases and expectations of higher average returns in developing countries help explain why this does not happen in practice. But until developing countries improve their investor environment, and market capitalization and savings shares move closer to equivalent levels within income groups, desires for diversification alone will continue to justify outward investment from developing countries in the aggregate.

What About Policy-Driven Capital Flows and Reserve Accumulation?

The discussion above highlighted a number of important reasons why private investors can drive capital flows from poor to rich countries. But as we have seen, governments also play a huge role in this process, particularly through reserve accumulation. From 2000 to the start of 2011, developing countries increased their nominal stock of foreign exchange reserves from around \$750 billion (11 percent of GDP) to nearly \$6.3 trillion (29 percent of GDP), a staggering increase compared to a rise from \$1.3 trillion (5.1 percent of GDP) to \$3.4 trillion (8.1 percent of GDP) in OECD countries. During the same period,

developing countries recorded an aggregate current account surplus of only \$3.8 trillion. Thus, while these countries may attract some private inflows, official acquisition of reserves easily overwhelms them.

With total developing-country reserves now well in excess of those in advanced countries—despite the latter’s much larger GDP—it could be argued that reserve accumulation has been excessive in some individual developing countries and in the aggregate. However, with no hard-and-fast rule for determining the “right” level of reserves, generalizations about excessive accumulation must be made with caution, especially in a time of great economic uncertainty.

Moreover, different groups of developing countries have taken different approaches to reserve accumulation. Though reserve stocks began to grow in nearly all developing countries after the crippling recessions and defaults that followed the Asian financial crisis, the acceleration was particularly pronounced—not surprisingly—in Asia itself. Reflecting high oil prices, oil exporters also added greatly to reserves (table 1).

Table 1. RESERVE LEVELS BY REGION

Region or Group	Increase in Reserves, 2000–2009 (billions of dollars)	2009 Reserves (in months of imports)
Advanced economies	2,367	10.0
Developing economies	4,789	18.9
East Asia and the Pacific	2,541	22.7
China	2,281	25.0
Oil exporters	1,031	15.9

Source: World Bank data.

Viewed from the perspective of developing countries, some acceleration in reserve acquisition appears reasonable. Accumulating official reserves—typically highly liquid, low-risk instruments such as U.S. Treasuries—has three economic justifications, all of which have become increasingly important in recent years: a desire for safety, fear of excessive exchange rate appreciation, and large resource windfalls.

Reserves can provide insurance against domestic or international crises. Shocks in financial markets or in terms of trade can spark capital flight to the safety of large advanced markets; reserves can be used to fill the hole left by this outflow.²⁴

The Asian financial crisis at the end of 1990s and the huge scare of the recent global financial and economic crisis increased the perceived need for insurance.

Buying and selling reserves is also useful for intervention in currency markets. It can help dampen exchange rate volatility, peg the exchange rate at a desired level, or both. When a country's central bank buys foreign currency, thereby building reserves, it dampens exchange rate appreciation. Developing countries' concerns about exchange rate appreciation have grown in recent years because low international interest rates, abundant liquidity, and improved confidence in emerging markets have triggered large flows of private capital to them.

Oil exporters in the Middle East and elsewhere have even greater incentives to accumulate reserves because of their limited capacity to absorb the large revenues from high oil prices. Even if one concludes that their foreign exchange reserves are excessive, domestic absorption of the surpluses is not a realistic option. The only real alternative is investing in higher-yielding, long-term instruments abroad.

Finally, a strictly economic analysis is incomplete—reserve accumulation has political motivations as well. For example, China's purchase of massive amounts of U.S. Treasuries has undoubtedly increased its political clout, as has its capacity to purchase bonds of embattled European governments.

Given the severity of the recent global financial crisis, and the volatility of private capital flows in decades past, developing countries can hardly be blamed for stepping up their accumulation of reserves. Nevertheless, the buildup may have exceeded what is necessary. The recent crisis experience, for example, lends credence to the view that today's reserve levels are well above what is needed for even the worst downturn. The financial crisis of 2008–2009 was one of historic severity, yet only about half of emerging markets ran down their reserves by more than 10 percent; and since the decline, reserves have surged again.²⁵

An examination of empirical benchmarks for reserve adequacy confirms that reserves surpass reasonable levels in several emerging markets, particularly in Asia. One traditional benchmark to assess reserve levels is whether they are enough to cover six months of imports; another, the so-called Greenspan-Guidotti rule, advises countries to cover all short-term external debt.²⁶ In the last decade, economists have proposed adding 20 percent of M2 (the amount of money and highly liquid instruments in circulation) to these benchmarks, as increased financial integration means that a large part of a country's monetary base can head for the exits during a crisis.²⁷ Recently, the IMF proposed a measure that uses exports, short-term debt and other portfolio liabilities, and M2 as factors in determining reserve adequacy.²⁸

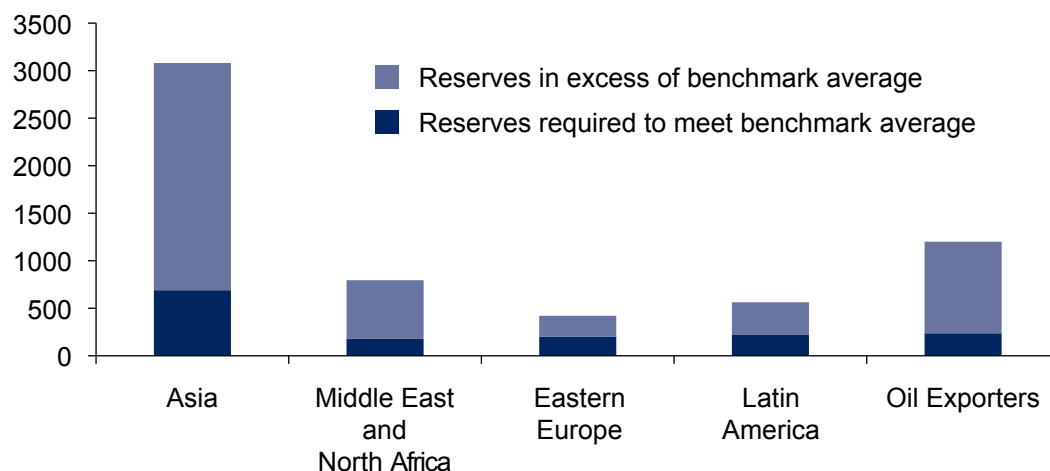
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These benchmarks yield vastly different estimates of reserve adequacy; as a result, the range of excess reserves now held by developing countries is between \$1 trillion and \$4 trillion. Thus, even under the most stringent criteria, reserve accumulation is still excessive, though perhaps not outlandishly so.

Most of this accumulation has been concentrated in the 20 largest reserve holders, which have more than 90 percent of developing country reserves. In total, these countries hold enough reserves to cover more than a year of imports or nearly five times their short-term debt. Even according to the more demanding benchmarks recently put forward by the IMF and others, a majority of these countries have excess reserves: 75 percent of the countries for which there is sufficient data can cover short-term debt plus 20 percent of M2, while over half of those examined have reserves that exceed the new IMF requirement.

As always, the average reserve levels among these 20 countries conceal large variation (figure 4). China alone accounts for more than half of the sample's excess reserves, while oil exporters are responsible for roughly an additional third. Reserve levels in Mexico, Poland, and Turkey, however, fall below at least one of the two traditional measures of adequacy.

Figure 4. 2009 RESERVE LEVELS IN THE 20 LARGEST DEVELOPING COUNTRY RESERVE HOLDERS (billions of dollars; reserves above the average of the two traditional benchmarks are considered excessive)



Note: Sub-Saharan Africa, which includes only Nigeria, is excluded; reserves there totaled \$46 billion. Regional aggregates include oil exporters.

Sources: World Bank data; authors' calculations.

Accumulating and holding excessive reserves has costs. With reserve levels exceeding all benchmarks for safety and stability, advanced countries perceive continued large accumulations in China and other successful emerging markets as attempts to keep exchange rates artificially low, and thus intensify currency tensions. Domestically, prolonged reserve accumulation can overheat credit and asset markets and distort banking systems.²⁹ Because these reserves are often low-yielding assets, holding them in excess also implies substantial opportunity costs. Before the financial crisis, these costs were estimated to be 1.4 percent of GDP in China, 1.1 percent in Russia, and 2 percent in Malaysia.³⁰

Policy Implications

In a theoretical world of perfect information, clear property rights, flexible labor and capital markets, homogenous workers, identical savings preferences, and no asymmetric shocks, one would certainly expect capital to move en masse toward capital-scarce developing countries. But this is not the world in which we live. In developing countries, institutions are weak, political and economic instability is high, and workers are far less skilled. Their capital markets are rife with imperfections and distortions, much more so than those of advanced countries. Asymmetric shocks abound. Investors behave with biases and seek protection from risk. Developing countries save more than advanced countries. And central banks in developing countries recognize their weaknesses and are understandably cautious, though, as we have argued, some are too cautious and too intent on avoiding exchange rate appreciation.

Once all these factors are considered, it is easier to understand why private capital flows resemble a web of constantly changing two-way traffic rather than a one-lane Southbound highway. Nor is a one-way rush of capital necessarily desirable. Capital inflows into countries with underdeveloped financial systems and weak regulatory capacity can induce excessive lending, speculative bubbles, inflation, currency appreciation, and overinvestment. In numerous cases—including in Latin America in the 1980s and in Asia in the 1990s—this onslaught of capital has ultimately resulted in extremely costly financial crises.³¹

So why do so many economists and policymakers still cling to the notion that capital should flow from rich to poor countries? One possible explanation is the contradiction between the large amounts of aid directed to poor countries and the capital flowing out of them. But the contradiction is more apparent than real, because capital flows are motivated by profit, whereas aid flows are motivated by charity, the desire to enhance global public goods, and the development of tomorrow's markets. These motivations are in no way inconsistent; the purpose of aid is to increase the resources available to developing countries, whereas two-way private flows make the most efficient use of the expanded resources.³²

Capital inflows into countries with underdeveloped financial systems and weak regulatory capacity can induce excessive lending, speculative bubbles, inflation, currency appreciation, and overinvestment.

More justified is the concern that a significant part of the capital outflow from developing countries is the result of excessive reserve accumulation, principally in Asia, motivated by a desire to maintain an undervalued currency, excessive caution, or both. As shown above, more than 25 percent of the current account surpluses in non-oil-exporting developing countries from 2000 to 2008 exceeded even a stringent criterion for reserve adequacy.

What policy implications can be drawn from this review? To begin with, those developing countries that run large current account deficits should not assume that doing so is fine because they are poor. To be sure, they can benefit greatly from inflows of foreign capital, especially FDI that is accompanied by specific know-how. However, this is only the case if the capital inflows are productively used, generate an adequate return, and are not prone to whims, sudden stops, or reversals.

Nor should developing countries assume that investing abroad is a waste or that investing at home is always better. By allowing part of their savings to flow abroad, individual residents and pension funds can achieve much greater diversification and access sophisticated hedging and insurance instruments. Increasingly, successful exporting firms in developing countries are able to expand their market reach, and to purchase technologies and brands by investing abroad.

Correspondingly, advanced countries should not assume that large current account surpluses are natural because they are rich. Their more favorable investment climate, low household savings rates, and large fiscal deficits may, and often do, generate the opposite outcome. Though some developing countries may be blamed for building up excess reserves and undervaluing their currencies, the causes of large current account deficits in both rich and poor countries are overwhelmingly domestic.

The central banks of some developing countries, beginning with China and others in Asia, have built reserves that are clearly in excess of reasonable requirements. These countries should either allow their exchange rates to appreciate and their domestic consumption to rise, or they should redeploy their reserves into high-yielding domestic or foreign investments.

In other very poor countries, reserve levels are too low, and countries could improve their resilience to shocks and their attractiveness to investors by diversifying and increasing their holdings. More research is needed to develop appropriate general guidelines for reserve adequacy, however.

The International Monetary Fund, the World Bank, and other international financial institutions should take a strictly case-by-case approach when advising countries on the appropriate level of capital inflow or outflow. These institutions

Developing countries that run large current account deficits should not assume that doing so is fine because they are poor.

are by now painfully aware of the dangers associated with overly rapid capital account liberalization and capital flow surges, but they still too often appear reluctant to spoil the party in times of plenty. And this lesson is especially important now—with emerging markets accelerating out of the recent global financial and economic crisis, advanced countries lagging, and international interest rates at record lows.

A rich menu of advice is now available on what countries need to do to strengthen their capacity to absorb foreign capital in the long run, and on how to respond to excessive capital flows in the short run. These measures, which include improving macroeconomic policies, developing resilient domestic financial markets, and maintaining prudent debt levels, have been discussed extensively and need not be repeated at length here.³³

Above all, the global financial crisis has shown beyond doubt that even in the most sophisticated and capable environments, the potential for excesses and mistakes when deploying capital is immense. For all these reasons, the presumption that large amounts of capital should flow from rich to poor nations should always be treated with skepticism.

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Notes

Comments by Pieter Bottelier, Jessica Mathews, Moisés Naím, Michael Pomerleano, and William Shaw are gratefully acknowledged.

- 1 Lawrence H. Summers, “A Conversation with Lawrence H. Summers,” Interview with Tim Ferguson, Council on Foreign Relations, November 17, 2010.
- 2 Martin Wolf, “How to Fight the Currency Wars with Stubborn China,” *Financial Times*, October 5, 2010.
- 3 Economists have questioned the assumption that capital should necessarily flow to poor countries for decades. See, for example, Robert Aliber, “Exchange Risk, Yield Curves, and the Pattern of Capital Flows,” Papers and Proceedings of the Twenty-Seventh Annual Meeting of the American Finance Association in Chicago, December 28–30, 1968, *Journal of Finance*, vol. 24, no. 2 (May 1969): 361–70; Charles Kindleberger, *Balance of Payments Deficits and the International Market for Liquidity*, Princeton Essays in International Finance 46 (Princeton, N.J.: Princeton University, 1965); and, more recently, Robert E. Lucas, “Why Doesn’t Capital Flow from Rich to Poor Countries?” *American Economic Review*, vol. 80, no. 2 (May 1990): 92–96; and Laura Alfaro, Sebnem Kalemli-Ozcan, and Vadym Volosovych, *Why Doesn’t Capital Flow from Rich to Poor Countries? An Empirical Investigation*, Working Paper 11901 (Cambridge, Mass.: National Bureau of Economic Research, 2005).
- 4 Lucas, “Why Doesn’t Capital Flow from Rich to Poor Countries?”
- 5 These forms of assistance are considered current transfers, not capital flows.
- 6 FDI flows typically well outweigh portfolio flows. According to the International Monetary Fund, in the past ten years, the absolute value of net portfolio flows to emerging and developing economies represented only approximately 20 percent of that of FDI; moreover, annual net FDI flows over that period (both positive and negative) summed to over \$2.5 trillion, while portfolio flows summed to essentially zero.
- 7 Pieter Bottelier and Gail Fosler, *Can China’s Growth Trajectory Be Sustained?* Research Report R-1410-07-RR (New York: Conference Board, 2007).
- 8 This savings increase occurred in both developed and developing oil exporters; see Matthew Higgins, Thomas Klitgaard, and Robert Lerman, “Recycling Petrodollars,” *Current Issues in Economics and Finance* (Federal Reserve Bank of New York), vol. 12, no. 9 (2006).
- 9 Assaf Razin and Efraim Sadka, “Lumpy Setup Costs of Investment: The Lucas Paradox Revisited,” unpublished report, National Bureau of Economic Research, November 2004.
- 10 See World Bank, *Worldwide Governance Indicators* and *Doing Business* reports; and World Economic Forum, *Global Competitiveness* reports.
- 11 Jiandong Ju and Shang-Jin Wei, for example, find that weak property rights can lead to capital outflows, while Debora Spar notes that a high-profile decision by Intel to invest in Costa Rica was based mainly on institutional considerations. See Jiandong Ju and Shang-Jin Wei, *A Solution to Two Paradoxes of International Capital Flows*, IMF Working Paper 06/178 (Washington, D.C.: International Monetary Fund, 2006); and Debora Spar, “Attracting High Technology Investment: Intel’s Costa Rican Plant,” Foreign Investment Advisory Service, Occasional Paper 11 (Washington, D.C.: World Bank, 1998), www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/1998/04/01/000009265_3980624142943/Rendered/PDF/multi0page.pdf.
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- 13 Alfaro, Kalemli-Ozcan, and Volosovych, *Why Doesn't Capital Flow from Rich to Poor Countries?*
- 14 In his original paper, Lucas stressed the differences in quality of labor, and postulated that high-quality labor could create positive externalities that make capital even more productive than labor quality adjustments imply.
- 15 Kenneth French and James Poterba, "Investor Diversification and International Equity Markets," *American Economic Review*, vol. 81, no. 2 (May 1991): 222–26.
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- 18 Maurice Obstfeld and Kenneth Rogoff, "The Six Major Puzzles in International Macroeconomics: Is There a Common Cause?" in *NBER Macroeconomics Annual 2000* (Cambridge, Mass.: National Bureau of Economic Research, 2000).
- 19 Carmen M. Reinhart and Kenneth S. Rogoff, "Serial Default and the 'Paradox' of Rich-to-Poor Capital Flows," *American Economic Review*, vol. 94, no. 2 (May 2004): 53–58.
- 20 Obstfeld and Taylor, *Global Capital Markets*, 249.
- 21 Savings rates are likely affected by a number of factors, including the availability of investment opportunities. However, U.S. savings has declined from 20 percent of GDP in about 1980 to below 15 percent in recent years while investment rates have stayed relatively constant at 20 percent of GDP, suggesting that the savings rate has declined in response to other factors.
- 22 This motive for savings only applies to windfalls, which are by definition temporary; sustained gains from natural resources—such as a large oil find—appear to have little effect on savings rates in the long term, as argued by Jeffrey D. Sachs and Andrew M. Warner, *Natural Resource Abundance and Economic Growth*, HIID Development Discussion Paper 517a (Cambridge, Mass.: Harvard Institute for International Development, Harvard University, 1995).
- 23 Dani Rodrik and Arvind Subramanian, *Why Did Financial Globalization Disappoint?* Working Paper 2008-0143 (Cambridge, Mass.: Weatherhead Center for International Affairs, Harvard University, 2008).
- 24 Matthew Higgins and Thomas Klitgaard, "Reserve Accumulation: Implications for Global Capital flows and financial Markets," *Current Issues in Economics and Finance* (Federal Reserve Bank of New York), vol. 10, no. 10 (2004).
- 25 Joshua Aizenman and Yi Sun, "International Reserve Losses in the 2008–9 Crisis: From 'Fear of Floating' to the 'Fear of Losing International Reserves?'" VoxEU.org. October 15, 2009.
- 26 Olivier Jeanne and Romain Rancière, *The Optimal Level of International Reserves for Emerging Market Countries: Formulas and Applications*, IMF Working Paper 06/229 (Washington, D.C.: International Monetary Fund, 2006).
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- 28 Based on historical evidence, the authors derived the following formulas to calculate the appropriate level of reserves: in fixed-exchange rate regimes, reserves should be equal to 1 to 1.5 times the sum of 30 percent of short-term debt (STD), 15 percent of other portfolio liabilities (OPL), 10 percent of M2, and 10 percent of exports; in floating exchange rate regimes, reserves should equal 1 to 1.5 times the sum of 30 percent of STD, 10 percent of OPL, 5 percent of M2, and 5 percent of exports. See International Monetary Fund, “Assessing Reserve Adequacy,” IMF Policy Paper (Washington, D.C.: International Monetary Fund, 2011).
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- 31 See Jeannine N. Bailliu, *Private Capital Flows, Financial Development, and Economic Growth in Developing Countries*, Working Paper 00-15 (Ottawa: Bank of Canada, 2000); Joseph Stiglitz, “Capital-Market Liberalization, Globalization, and the IMF,” *Oxford Review of Economic Policy*, vol. 20, no. 1 (2004): 57–71; Reinhart and Rogoff, “Serial Default”; Graciela L. Kaminsky and Carmen M. Reinhart, *The Twin Crises: The Causes of Banking and Balance-of-Payments Problems*, International Finance Discussion Paper 544 (Washington, D.C.: Board of the Governors of the Federal Reserve System, 1996); and Ronald I. McKinnon and Huw Pill, “Credible Economic Liberalizations and Overborrowing,” *American Economic Review*, vol. 87, no. 2 (May 1997): 189–93.
- 32 This, of course, is the intended purpose of aid inflows. However, to the extent that capital outflows from aid-dependent economies are the result of government corruption, ineffective tax regimes, or unequal income distribution, the concern is a valid one.
- 33 For an overview, see Bank for International Settlements, *Capital Flows and Emerging Market Economies*, CGFS Paper 33 (Basel: Bank for International Settlements, 2009).

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