



Causes of Capital Inflows and Policy Responses to Them

NADEEM UL HAQUE, DONALD MATHIESON, AND SUNIL SHARMA

Some developing and transition countries are attracting large inflows of foreign capital that could destabilize their economies. To design policies that will enable them to guard against this danger, they need to identify what is driving the inflows.

IN RECENT years, a number of developing and transition countries have enjoyed large inflows of foreign capital that have eased their financing constraints. Despite their obvious benefits—increased efficiency and a better allocation of capital, and associated transfers of technology—the inflows have aroused concern because of their potential effects on macroeconomic stability, the competitiveness of the export sector, and external viability. The most serious risks are that they

will fuel inflation and drive the real effective exchange rate to unsustainably high levels.

Policymakers faced with the threat of overheating in the wake of large capital inflows have to make difficult decisions on the magnitude, sequencing, and timing of policy actions. These decisions need to be based on the recipient country's economic objectives, exchange rate regime, institutional constraints, and, especially, the causes and composition of the inflows. In practice, however, it is difficult, at least in the early stages, to identify the causes and to distinguish between temporary and sustainable inflows. Judgments must therefore be made on the basis of limited information.

This article sets out a stylized framework that addresses two questions. First, which financial indicators would be most useful to policymakers in identifying the causes of capital inflows? Second, what would the appropriate policy responses be in different situations? This framework can do no more than provide general guidelines, however. Capital inflows are determined by a combination of causes that varies from

country to country, and policies must be tailored to the circumstances of individual countries.

Identifying the causes

For the purposes of this article, the causes of capital inflows can be grouped into three major categories: autonomous increases in the domestic money demand function; increases in the domestic productivity of capital; and external factors, such as falling international interest rates. The first two are usually referred to as “pull” factors, the third as “push” factors.

The economic impact of capital inflows and the need, if any, for a policy response are likely to be determined by the forces driving them, as well as by the recipient country's exchange rate regime. Under a fully flexible exchange rate system, capital inflows (regardless of what is driving them) will lead to appreciation of the recipient country's currency, a drop in the relative price of imported goods, and a shift of consumption away from nontradables—all of which tend to alleviate inflationary pressures. Therefore, all other things being equal, the more flexible the exchange rate,

Nadeem Ul Haque,
a Pakistani national, is Deputy Chief of the Monetary and Exchange Policy Analysis Division in the IMF's Monetary and Exchange Affairs Department.

Donald Mathieson,
a US national, is Chief of the Emerging Markets Studies Division of the IMF's Research Department.

Sunil Sharma,
an Indian national, is a Senior Economist in the Emerging Markets Studies Division of the IMF's Research Department.

the less likely it is that capital inflows will have an inflationary effect.

Under a managed float or a fixed exchange rate system, whether or not capital inflows create inflationary pressures will depend on whether the inflows reflect an upward shift in the money demand function—that is, an increase in money demanded for each interest rate level—or are due to other factors, such as a drop in international interest rates or an increase in the domestic productivity of capital. If capital inflows are due primarily to a sustained increase in domestic money demand, they will not be inflationary. But if they increase for other reasons, the accumulation of foreign exchange reserves will lead, in the absence of sterilization, to expansion of the monetary base, heightened inflationary pressures, and deterioration of the external position.

Financial indicators that may help policymakers differentiate between inflows caused by a shift in the money demand function and those driven by exogenous factors include asset prices, monetary and credit aggregates, balance of payments data, and key international variables, such as interest rates (Table 1). Data on asset prices, both domestic and international, are likely to be more timely than data on monetary and credit aggregates and the external accounts and, therefore, more useful as indicators in this context. The usefulness of different domestic financial indicators depends on an economy's institutional structure and on the sophistication of a country's data-gathering and statistical reporting systems.

In countries with established financial and equity markets, *relative asset price movements* may be particularly helpful in identifying causes; it is assumed that there is less-than-perfect substitutability between domestic and foreign assets as well as less-than-perfect capital mobility between countries. An upward shift in the money demand function is likely to drive down prices of domestic bonds, equities, and real estate as asset holders reallocate their portfolios. In contrast, when inflows are fueled by lower international interest rates or increases in the domestic productivity of capital, prices of real and financial assets will probably go up.

Interest rates can be useful for determining whether capital inflows are caused by “pull” or by “push” factors. Other things being equal, inflows driven by “pull” factors will be associated with upward pressure on domestic nominal interest rates, while inflows due to “push” factors, such as a decline in international interest rates,

Table 1
How financial indicators behave can shed light on capital inflows

Indicator	Upward shift of money demand curve	Increase in productivity of domestic capital (sustained inflows)	External factors—e.g., falling international interest rates (temporary inflows)
Asset prices			
Interest rates	Increase	Increase	Decrease
Yield curve	Flattens	?	Becomes steeper
Exchange rate	Appreciates	Appreciates	Appreciates
Equity prices	Decrease	Increase	Increase
Real estate prices	Decrease	Increase	Increase
Inflation	Decreases	Increases	Increases
Monetary and credit aggregates			
Real money balances	Increase	Likely to decrease	Increase
Base money	Increases	Increases	Increases
International reserves	Increase	Increase	Increase
Bank credit	Likely to increase	Increases	Likely to increase
Foreign currency deposits	Decrease	?	May decrease
Balance of payments			
Foreign direct investment	?	Increases	?
Portfolio investment	Increases, especially in short-term flows	Increases, in both short- and long-term flows	Increases, especially in short-term flows
? Indicates that the effect is uncertain.			

will tend to put downward pressure on domestic interest rates. Returns to foreign investors can also provide useful information: real returns, which depend on the expected path of the exchange rate (and foreign, not domestic, inflation) can be a key determinant.

The behavior of real money balances also may be informative. Capital inflows driven by money demand will be associated with an increase in money balances but not accelerating inflation (and, thus, with rising *real money balances*). Capital inflows generated by a decrease in international interest rates will initially drive up nominal and real money balances, but then, as inflation accelerates, real balances may decline. Domestic prices will be slower to respond in low-inflation countries than in high-inflation countries. At least initially, capital flows attracted by higher domestic productivity are likely to take place in an environment characterized by rising interest rates and domestic income; the net effect on money demand will depend on the latter's sensitivities to changes in interest rates and income. It is probable, however, that desired holdings of real balances will be reduced because of higher returns on competing assets.

Foreign-currency deposits in the banking system should decline when the domestic money demand function shifts upward and also, possibly, when international interest rates fall. However, the effect of increased

domestic productivity on foreign-currency deposits is ambiguous: a greater need for domestic currency will tend to result in substitution away from foreign-currency deposits, while the income effect will work in the opposite direction.

While the *composition* of capital inflows can provide information about their causes, it is often difficult to distinguish between foreign direct investment flows and portfolio investment flows, especially in the short term. In general, an increase in money demand is likely to attract short-term portfolio investment, whereas other changes, such as an increase in the domestic rate of return on capital, will tend to attract longer-term foreign direct investment. In these cases, also, there may be long delays between the stimulus and the inflow of capital, depending, among other things, on the regulatory environment and absorptive capacity of the recipient country. Thus, an increase in the domestic productivity of capital may initially lead to larger portfolio inflows and only later attract greater amounts of foreign direct investment.

Although the indicators described above provide information for guiding policy, two important caveats apply. First, disentangling the factors affecting the various indicators can be quite complex. Even in the simplest cases, the indicators often send an ambiguous message about what is causing the capital inflows, and additional information will generally be required. It is there-

fore also necessary to consider how broader changes in economic conditions—for example, economic reforms that increase the productivity of capital and enhance growth prospects—may be driving capital inflows. Investment decisions made by market participants may also provide useful insights. Moreover, even when the message is clear, it needs to be evaluated against a counterfactual—in other words, the behavior of the indicators has to be interpreted in relation to what would have happened if the inflows had not occurred, although doing this is very difficult.

Policy responses

The appropriate policy responses will be determined not only by the causes of capital inflows but also by the degree of flexibility allowed by the domestic institutional structure and the existing policy stance. Countries that pursue relatively balanced macroeconomic policies have found it easier to deal with the disruptions caused by inflows than countries with unbalanced policies (commonly, an excessively expansionary fiscal policy compensated for by a tight monetary policy).

Some countries can partly offset the upward pressures that large capital inflows exert on exchange rates by accelerating the pace of trade and exchange liberalization, including easing controls on capital outflows. Otherwise, countries have three instruments at their disposal to deal with the possible effects of large capital inflows: sterilized intervention, fiscal tightening, and exchange rate appreciation. The optimal mix of instruments depends on the country's institutional structure and past

policies. The ability to sterilize the effects of capital inflows on the monetary base may be limited if suitable instruments are not available to the central bank and if domestic financial markets are not sufficiently developed. It may also be limited if previous intervention by the central bank has produced a large quasi-fiscal deficit—the difference between the interest earned on foreign exchange reserves and the costs of financing the sterilization. Although some countries have appropriately adopted tighter fiscal stances in the face of persistent capital inflows, fiscal policy is somewhat unwieldy for short-term demand management because of the lags associated with the formulation and implementation of specific measures. And exchange rate appreciation may be unacceptable because it makes a country's products less competitive.

It is sometimes argued that temporary capital controls may need to be considered if the use of these three instruments is severely restricted or their effectiveness is limited. However, if capital controls are in place for a long time, they tend to become less effective with respect to flows and may hinder the development of the financial system and undermine the efficiency of resource allocation. Moreover, institutional factors can be pivotal in determining what would be an appropriate response to capital inflows. With macroeconomic stabilization and deregulation, returns to investment may rise sharply, while the banking system, which will intermediate the flows, may still have structural weaknesses and poor prudential supervision. In these circumstances, capital controls and prudential supervision

measures—including restrictions on the foreign exchange exposure of domestic financial institutions—could be used to limit intermediation of the inflows by the banking system, as well as to steer foreign capital toward assets with relatively longer maturities. Capital controls can be progressively dismantled as the quality of surveillance improves and the capacity of the banking system to handle flows increases.

The matrix in Table 2 shows the appropriate use of each instrument for countries with *balanced macroeconomic policies*. It should be noted that many countries have attracted large capital inflows while stabilization efforts are still in progress—and some countries have received capital inflows despite poor fundamentals. For the sake of simplicity, however, the matrix does not take into account all possible initial conditions and policy imbalances.

When a capital inflow is associated with an upward shift in the money demand function (induced, say, by financial deregulation), no policy action is required because, in this case, the expansion of the monetary base will not be inflationary or threaten external viability. It may be necessary, however, for the central bank to intervene in the (relatively thin) money and foreign exchange markets to smooth fluctuations in the exchange rate and interest rates. One possible cause for concern is that banking credit is likely to expand as money balances increase. With a poorly supervised and weak banking system, the increase in commercial banks' reserves could lead to excessive risk taking in lending activities, and measures may be needed to restrict bank intermediation.

Table 2
Instruments for managing capital inflows
A matrix for countries with balanced macroeconomic policies

	Upward shift of domestic money demand curve	Increase in productivity of domestic capital (sustained inflows)	External factors—e.g., falling international interest rates (temporary inflows)
Sterilization	May be needed to smooth fluctuations.	May be needed to smooth fluctuations.	Is appropriate.
Exchange rate appreciation	Equilibrium real effective exchange rate does not change.	The warranted appreciation of the equilibrium real effective exchange rate can be achieved partly through nominal appreciation and partly through increases in the prices of nontraded goods.	Equilibrium real exchange rate need not change. Temporary nominal appreciation of the exchange rate may be warranted if there are constraints on sterilization.
Fiscal policy	No policy response is required.	Fiscal policy tightening is generally required, especially if the absorptive capacity of the economy is limited relative to the size of the inflows.	If the constraints on sterilization are too severe and the external competitive position is weak, then some fiscal tightening may have to be considered.

Policymakers need to fashion different responses depending on whether capital inflows are likely to be sustained or temporary. For a *sustained increase*—due, say, to an increase in the productivity of domestic capital—policymakers have to decide how best to achieve the appreciation of the equilibrium real effective exchange rate. Adjustments in goods, factor, and asset prices will ultimately induce a real appreciation regardless of the exchange rate regime, and the policy response should not inhibit this appreciation. In economies with flexible exchange rate arrangements, appreciation of the real exchange rate can be achieved through a nominal appreciation rather than an inflation of the prices of nontraded goods. Over the medium term, a tightening of fiscal policy may be needed to control increases in domestic absorption, to prevent an excessive appreciation of the real effective exchange rate, and to contain the external deficit. A tighter fiscal stance has been necessary in countries confronted with sustained capital inflows, especially when the inflows have been

large relative to the economy's absorptive capacity and in countries with pegged exchange rates.

To limit the impact of a *temporary increase* in capital inflows—for example, one resulting from a decline in international interest rates—sterilization of the inflows, if feasible, is the most appropriate response, since it can limit or prevent a deterioration in external competitiveness, and some appreciation of the exchange rate might also be appropriate. However, the ability to sterilize inflows is likely to be limited and short-lived if the substitutability between domestic and international assets is high or the exchange rate is pegged. Adjustments in fiscal policy may not be necessary unless constraints on sterilization are severe and the economy's competitive position is weak. Moreover, fiscal policy may not be an appropriate instrument in these cases, because it may involve lengthy legislative processes, and frequent changes in the tax structure and government spending might impose substantial adjustment costs on the economy.

In countries with *unbalanced financial policies*, short-term inflows are likely to be influenced primarily by domestic interest rates and expected exchange rate movements. Generally, the high domestic interest rates that attract foreign capital are due to a mix of loose fiscal and tight monetary policies; hence, making the appropriate fiscal and monetary adjustments to rebalance the policy mix is clearly the best policy response. Reducing interest rates while decreasing the incentive for speculative inflows, however, could stimulate domestic demand and lead to overheating. In those situations where a correction of an unbalanced policy mix is expected, the response should be similar to that for a temporary external shock—namely, sterilized intervention combined with some exchange rate appreciation. However, these measures would clearly not be effective when fundamental policy adjustments are unlikely to be forthcoming, especially if high domestic interest rates are driven by excessive public sector borrowing. **F&D**

Don't panic!



The *World Debt Tables* hasn't disappeared—it's been renamed!

In *Global Development Finance*, you'll find all the information you're used to seeing in the *World Debt Tables*—external debt and financial flows data for 150 countries, including the 136 that report to the Bank's Debtor Reporting System. Only the name has changed for this two-volume annual reference work. *Global Development Finance* is a must for economists, bankers, country risk analysts, financial consultants, and anyone involved in international trade, payments, and capital flows. **April 1997. Volume 1: Stock no. 13788 (ISBN 0-8213-3788-2) \$40.00. Two-volume set (Volume 2 not sold separately): Stock no. 13789 (ISBN 0-8213-3789-0) \$300.00.**

Global Development Finance is also available on **CD-ROM and diskette**. View, select, and extract the data you need through the World Bank's Socioeconomic Time-series Access and Retrieval System (*STARS*). Contains data from both volumes and text from Volume 1. Files may be exported to other databases, Lotus 1-2-3™, or ASCII. **CD-ROM individual version: Stock no. 13792 (ISBN 0-8213-3792-0) \$300.00. CD-ROM network version: Stock no. 13793 (ISBN 0-8213-3793-9) \$825.00. Diskette individual version: Stock no. 13790 (ISBN 0-8213-3790-4) \$200.00. Diskette network version: Stock no. 13791 (ISBN 0-8213-3791-2) \$545.00.**

The World Bank

PO Box 7247-8619 • Philadelphia, PA 19170-8619 • USA
telephone 202.473.1155 • fax 202.522.2627



1240