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Research Summaries

Foreign Direct Investment and the Crisis: Is This Time Different?

Yuko Kinoshita



During the global financial crisis, foreign direct investment (FDI) turned out to be less resilient than in past crises. It is important to go beyond aggregate measure of FDI and look at the composition to make an assessment of its effects on the host country: FDI in the tradable and nontradable sectors have different implications on economic growth and volatility. This article surveys recent IMF research on FDI and its effects on external vulnerabilities and volatility in the global financial crisis.

Foreign direct investment (FDI) is generally considered to be the most stable form of capital flow in a time of distress (Kose and others, 2006; Prasad, Rajan, and Subramanian, 2007; and Tong and Wei, 2010). FDI is also known to bring various benefits to the host country by transferring new technology and know-how and raising productivity and economic growth.

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Food Prices and Inflation

James P. Walsh



High global food inflation, leading in many countries to headline inflation rising above core for a sustained period of time, has led policymakers to question the conventional wisdom of accommodating food price shocks. The issue is particularly important for emerging and developing economies, where food weighs heavily in the consumption basket. Research at the International Monetary Fund has approached this issue from a variety of angles. First, given its high level and important second round effects, excluding food inflation from traditionally defined core measures may not be justifiable in many countries. Second, strict core inflation targeting may not be optimal when many credit-constrained consumers operate at a near-subsistence level. Finally, when global food prices cover a large share of the consumption basket, food shocks can have significant effects on the terms of trade and real effective exchange rate, weakening the case for their exclusion from monetary policy decisions.

The rapid rise in food prices since 2003 has faced policymakers with a difficult predicament. In general, the high volatility of food inflation complicates monetary policy decision making by obscuring underlying signals about infla-

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During the global financial crisis of 2007–09, however, FDI proved not so resilient as initially thought (Lane and Milesi-Ferretti, 2011). Most notably, in the crisis-hit Eastern Europe, FDI plunged as sharply as other short-term capital flows—though to a lesser extent—and three years after the crisis, FDI has yet to recover to the pre-crisis level. The reversal of capital flows was particularly pronounced in the Baltics and South-eastern Europe where the countries received sizable FDI in the financial sector and experienced rapid credit growth during the boom period (Bakker and Gulde, 2010).

FDI volatility in the global financial crisis is explained by pre-crisis differences in the sectoral composition of FDI rather than the aggregate FDI. All countries in Eastern Europe received sizable FDI, but the position of external balances was markedly different across countries in the run up to the crisis. A recent study by Kinoshita (2011) argues that the sectoral composition of FDI before the crisis affected external vulnerability through the trade account balance. FDI in the tradable sectors is likely to be associated with better export performance, whereas FDI in the nontradable sectors is positively associated with the incidence of domestic demand booms and often a large deficit in the trade account balance. Among the countries in Eastern Europe, the boom-bust cycles were most pronounced in Southeastern Europe and the Baltics where external imbalances and FDI in the nontradable sectors were sizable. The study also found that countries with large market size, greater trade integration, good infrastructure, and an educated labor force are more likely to receive FDI in the tradable sectors.

The positive effect of FDI on export performance is one of the main benefits to the host country of FDI, and this conclusion is supported by anecdotal evidence as well as past studies. China is a well-known success story of FDI and export growth. In the mid-1980s, China established the special economic zones on its coastal area in which foreign investors were given special incentives to invest, including tax breaks, duty-free importation of capital goods, and a pool of trained workers. Cumulative FDI inflows have continued to grow to date, accompanied by impressive export growth. China's exports increased ten times between 1995 and 2005, while export share of high-skilled manufactured goods has steadily increased over time. Export promotion and transfer of technology are China's two most important FDI objectives. The policy mix of discouraging foreign

debt and portfolio inflows and providing incentives to FDI further contributed to tilting capital inflows in FDI in the tradable sector (Prasad and Wei, 2007). Using industry-level data, Zhang (2005) finds that FDI indeed has a positive effect on China's export performance, and FDI's effect on exports is much larger than that of domestic capital.

“Some argue that the global financial crisis was simply different from past crises because FDI source countries were equally hit hard by the crisis.”

Similar to China's experience, other developing countries have endeavored to attract export-oriented FDI by offering various incentives to foreign investors in the export sector. Costa Rica launched a proactive attempt to diversify production and exports after the Latin American debt crisis in the early 1980s with the main pillars being FDI promotion and free trade agreements (Moran and others, 2005). Mauritius also transformed itself from an agricultural low-income country to a diversified middle-income country in the span of two decades, initially prompted by the introduction of the export processing zone and FDI inflows that followed.

Other studies also find support for the resilience of FDI in the tradable sectors during the crisis period. Using a worldwide dataset at the establishment level (thus in the tradable sectors), Alfaro and Chen (2010) study how foreign subsidiaries responded to the global financial crisis relative to domestic firms. They find that foreign subsidiaries fared on average better than local firms and that, among foreign subsidiaries, those with stronger vertical production linkages with parent firms exhibited greater resilience. Furthermore, they find that the differences between the performance of foreign and local firms are visible only in the crisis period but not in the non-crisis period.

Some argue that the global financial crisis was simply different from past crises because FDI source countries were equally hit hard by the crisis. Calderon and Didier (2010) find that the scope of mergers and acquisitions (M&A, or fire-sale FDI) was limited during the global financial crisis because this crisis originated in the advanced countries and this explains the very weak recovery of FDI in contrast to previous crises. Moreover, the measurement issue of FDI can also explain the larger-than-expected turnaround of FDI during the crisis. The definition of FDI includes equity capi-

tal, reinvested earnings, and other capital (e.g., inter-company loans). Unlike equity capital, the latter two components are more volatile and sensitive to shocks and this also leads to an exaggeration of FDI in good times.

In addition to tradable FDI literature, there is a strand of literature focusing on the effects of nontradable FDI on the host economy—in particular, FDI in the financial sector. Goldberg (2007) gives a useful conceptual framework to distinguish financial and non-financial (e.g., tradables) FDI in her literature survey on FDI. Drawing a parallel between “general” FDI (e.g., manufacturing and resource sectors) and “financial” FDI (e.g., financial sector) in emerging markets, she concludes that the main benefits of FDI such as improved allocative efficiency and technology transfer and diffusion are also found in FDI in the financial sector, albeit with a time lag. But financial FDI seems to affect the incidence of the crisis, business cycle magnitude, and institutional development—this is different from general FDI. Generally, foreign bank entry may introduce a more diversified supply of funds, leading loan supply to be less procyclical, but it could also increase the potential for greater contagion through common lender presence.

More recently, the stability of financial sector FDI during the global financial crisis was examined, focusing on the credit channel of foreign banks. Kamil and Rai (2010) look at the stability of foreign banks’ financing to emerging market countries and find a surprising resilience of foreign bank’s lending growth in Latin America and the Caribbean (LAC) during the crisis. They also show that the propagation of the global credit crunch was significantly more muted in countries where most foreign bank lending was channeled using domestic currency. In a subsequent study, Canales-Kirijenko and others (2010) show that resilience of lending of foreign banks in LAC is attributed to its reliance on domestic deposits rather than loans and capital transfers from parent banks. On the other hand, foreign banks in emerging Europe were more reliant on funding from foreign parent banks, which resulted in faster credit growth before the crisis and also a deeper credit crunch when the crisis hit.

FDI in the financial sector can be a double-edged sword. Though foreign bank ownership generally contributed to increased vulnerabilities before the crisis in Eastern Europe, foreign-owned banks are found to have a stabilizing effect during the crisis (Berglöf and others, 2009; IMF, 2010). In contrast to the Asian financial crisis, Eastern Europe managed to avoid a currency and banking crisis—with a few exceptions—as foreign banks mitigated some of the capital

outflows by maintaining their local exposure. For a larger set of emerging economies, however, the overall effect of foreign bank ownership on the economy is mixed. Ostry and others (2010) find that FDI in the financial sector is associated with poor growth performance during the crisis, while FDI in the nonfinancial sector is associated with a better performance.

One of the lessons of the global financial crisis is that the composition of capital flows does matter even for countries with a high share of FDI. On one hand, FDI in the financial sector may bring greater vulnerability as part of it reflects intragroup debt that is more akin to debt than greenfield FDI. On the other hand, FDI in the tradable sector is likely to improve export performance, leading to a more sustainable external balance. In this regard, one should look beyond aggregate FDI and examine the sectoral composition of FDI to assess the overall effect on the host economy. However, the right mix of the sectoral composition of FDI is not the only fix for external vulnerability. Other domestic policies and conditions also should be in place to enhance the benefits of FDI. For example, FDI in the tradable sector does not automatically lead to better export performance in the absence of the absorptive capacity and complementary skills of the host country. Similarly, FDI in the financial sector can play a stabilizing role during the crisis with the help of a supportive regulatory and supervisory framework.

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tion, but their transient nature limits the long-term impact. At the same time, with prices set globally, food price shocks are often viewed as supply shocks, and thus unlikely to be affected by traditional central bank tools. The broad-brush conclusion is that the role of food prices should be minimized in policymaking: central banks should focus on core measures of inflation that exclude food, both in their assessments of inflation and in monetary policy decisions. Broadly, this is the approach most often supported by the IMF, as discussed in the September 2011 *World Economic Outlook* (WEO). However, while this will be justified in many cases, in others, as the WEO notes, extenuating circumstances may call for a focus on headline inflation.

Recent IMF research has looked at some of these assumptions for a range of applications. Walsh (2011) notes that core inflation is intended to eliminate statistical noise to focus on underlying trends, either by minimizing the weight of components displaying extreme changes, or components with relatively transitory shocks. Either measure rests on the assumption that headline and core inflation have the same long-run mean (otherwise core understates true inflation) and that non-core inflation has no long-run effect on core inflation. But simply eliminating food prices from headline inflation can violate these assumptions in three important ways:

- **Sustained high food inflation.** If food prices rise faster than nonfood prices over a long period, then core inflation will underestimate headline inflation.
- **Persistent food inflation.** If food shocks do not dissipate, they will affect inflation expectations and thus headline inflation.
- **Second round effects.** If food shocks affect nonfood prices, accommodated food shocks can have an important impact on nonfood inflation.

These conditions can be found in many emerging or developing economies. Looking at a very wide sample of countries, Walsh finds that the difference between long-run average food and nonfood inflation tends to be minimal in advanced economies, but can be sustained and large elsewhere. A non-food core measure can thus show lower inflation than headline, even in the long run.

Second, three different measures of persistence are derived from fitted autoregressive models. In rich countries, with relatively credible central banks, persistence under all three measures is low or even negative as shocks are quickly countered. But in poorer countries, food and nonfood inflation

are often persistent; thus, excluding either from a core inflation measure is difficult to justify.

Finally, second-round effects strengthen the case for an earlier monetary policy response to limit pass-through to nonfood inflation. But fitted VARs for food and nonfood inflation show that while second round effects are small and quickly reversed in rich countries, they may not be reversed in poorer countries, and can have a significant impact on nonfood prices.

“In many rich countries, the assumptions required to exclude food inflation from core measures are likely to hold.”

Thus in many rich countries, the assumptions required to exclude food inflation from core measures are likely to hold. But in poorer countries, persistence, high means (likely due to rising incomes and demand), and second-round effects signify that core measures should be developed from first principles of reducing volatility or transience where it might be; mere exclusion of food can lead policymakers to underestimate the impact of price shocks on headline inflation, possibly leading to a weaker policy response.

Looking at optimal monetary policy more broadly, Anand and Prasad (2010) question whether targeting core inflation under imperfect markets yields higher welfare than alternate policies. They note that in many emerging markets and low income countries, not only is the share of food in the CPI very high, but the price elasticity of demand is extremely low, and the income elasticity very high. As in Walsh (2011), they note that both the level and volatility of core and headline inflation also tend to be higher in poorer countries than in richer ones.

To model these differences, they incorporate novel features into a basic dynamic sticky price model: a nontrivial share of credit-constrained consumers who produce food, and a base subsistence level of food consumption. While unconstrained consumers can smooth consumption between periods, credit-constrained consumers must finance consumption out of current wages.

The central bank uses a Taylor rule weighing inflation, the output gap, and a preference for interest-rate smoothing, and the model is evaluated under four regimes: strict core or headline targeting (the central bank values only interest rate smoothing and inflation stabilization) and flexible core or headline targeting (the central bank also stabilizes output).

Under complete markets, targeting strict core inflation maximizes welfare. As inflation rises, the central bank raises interest rates. Consumers save more, reducing aggregate demand and bringing inflation back down. Targeting headline inflation thus results in a higher volatility of output and consumption, analogous to other findings in the inflation targeting literature.

On the other hand, when some households are credit-constrained and cannot smooth consumption, flexible headline inflation targeting maximizes welfare. Higher interest rates in this model lead unconstrained consumers to reduce their aggregate demand as above, but credit constrained consumers cannot respond. Additionally, since their incomes come from food, their consumption may increase when food prices rise. Under strict core targeting, the central bank does not react to food price shocks, and this higher demand aggravates inflation. But under strict headline targeting, the central bank reacts to those higher food prices by raising rates, and the falling consumption by unconstrained consumers outweighs rising demand from constrained consumers. This fact, that inflation and output can move in opposite directions, means that stabilizing output (flexible headline targeting) raises welfare further. Thus when some consumers are credit constrained, as in many developing countries, relative food prices affect not only aggregate supply but also aggregate demand, and central banks can raise welfare by acknowledging this.

Catão and Chang (2010) look at setting monetary policy in small open economies (SOEs). Like Anand and Prasad (2010), they note that food often constitutes a large and relatively inelastic share of the consumption basket, and further note that much of this is imported, so food price shifts can have large terms of trade implications.

They employ a dynamic stochastic general equilibrium (DSGE) model, with some important features. Monopolistic competition and nominal rigidities allow domestic policies to affect the real exchange rate and terms of trade. Traditionally, targeting PPI raises welfare relative to CPI targeting, since food is not modeled differently from other goods, and thus has a high intertemporal elasticity of substitution.¹ However, Catão and Chang assume food is imported, priced exogenously, and enters the utility function in a discrete manner.

¹In this context, CPI can be thought of as analogous to headline inflation, while PPI inflation more closely approximates core inflation.

This changes the welfare ranking. When food price shocks are large and the weight of food in the utility function is high, ignoring food prices, either by targeting a (nominal) exchange rate peg or the PPI, raises the volatility of the real exchange rate and lowers the terms of trade. These, in turn, produce more volatile but on average lower consumption, reducing overall welfare. On the other hand, targeting the CPI takes the effects of external food prices into account: if international food prices rise, the central bank tightens more than in a PPI targeter, leading to a more stable (and more appreciated) real effective exchange rate and more stable consumption path over the long run. Moreover, the welfare result of this strict CPI targeting can be improved under certain parameterizations by also placing some weight in the output gap in the monetary policy function.

Each of these three papers highlights a different way in which failing to recognize the distinctiveness of food in assessing economic conditions can lead to suboptimal outcomes. In countries where food is a small share of the consumption basket, this distinctiveness will likely be unimportant. But in many emerging and developing economies this will not be the case. In such countries, Walsh (2011) shows that looking at core inflation measures that exclude food price inflation can lead to a substantial underestimation of inflationary pressures and mislead central banks on the size of underlying inflationary pressures. Anand and Prasad (2010) show that an environment where many food producers are credit constrained is one with significantly weaker monetary policy transmission, and ignoring food price developments can lead to higher and more volatile inflation. Finally, Catão and Chang (2010) show that when food is imported and not easily substitutable, ignoring food prices in setting monetary policy can reduce welfare by leading to more volatile and reduced consumption.

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