



In This Issue

- Does Trade and Financial Globalization Cause Income Inequality? 1
- The Current Account of Oil-Exporting Countries 1
- Visiting Scholars 6
- IMF Staff Papers 7
- IMF to Launch New Research Journal 7
- Q&A: Seven Questions about Policy Options for Emerging Market Countries 8
- IMF Working Papers 11
- Tenth Annual Jacques Polak Research Conference 13
- Staff Position Notes 14

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Research Summaries

Does Trade and Financial Globalization Cause Income Inequality?

Chris Papageorgiou



The integration of the world economy through the progressive globalization of trade and finance has reached unprecedented levels, surpassing the previous peak prior to World War I. This new wave of globalization is having far-reaching implications for the economic well-being of citizens in all regions and among all income groups, and is the subject of active public debate. This article provides an overview of the latest research about the effects of trade and financial globalization on income inequality.

The global economy has changed dramatically over the past two decades. World trade has grown fivefold since 1980, and its share of world output has risen from 36 to 55 percent. Trade integration accelerated in the 1990s as the former Eastern bloc countries entered the global trading system and developing countries in Asia progressively dismantled trade barriers. The globalization of financial flows has also been rapid. Total cross-border financial assets more than doubled as a share of output between 1990 and 2004, from 58 percent to 131 percent of global GDP. The advanced economies continue to *(continued on page 2)*

The Current Account of Oil-Exporting Countries

Irineu E. de Carvalho Filho



As oil prices soared to historically high levels in the summer of 2008, so did the current account balance of oil-exporting countries. With the more recent retreat in oil prices, these large surpluses have narrowed sharply and for some countries, there is even the expectation of small current account deficits in 2009. Such sharp swings in the current account balance are a recurring feature for oil-exporting countries. Another noticeable characteristic of these countries is a tendency to run, on average, large current account surpluses, and as a consequence, a tendency to accumulate net foreign assets. This article briefly surveys recent IMF research related to the current account behavior of oil exporting countries.

The intertemporal approach for the current account views the current account balance as the outcome of forward-looking dynamic saving and investment decisions. In its simplest form, it applies the logic of Milton Friedman's permanent income hypothesis (PIH) to countries. The basic intuition of the PIH model is that households attempt to smooth fluctuations in their *(continued on page 4)*



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Does Trade and Financial Globalization Cause Income Inequality?	1
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Visiting Scholars	6
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Does Trade and Financial Globalization Cause Income Inequality?

(continued from page 1)

lead the trend in financial integration, but other regions are beginning to catch up. How have these developments affected people's incomes and the gap between the rich and the poor within countries?

The debate on the distributional effects of globalization is often polarized between two points of view. One school of thought argues that globalization leads to a rising tide of income that raises all boats. Hence, even low-income groups come out as winners from globalization in absolute terms. The opposing school argues that while globalization may improve overall incomes, the benefits are not shared equally among the citizens of a country, with clear losers in relative and possibly even absolute terms.¹ Moreover, widening income disparities may not just raise welfare and social issues, but may also limit the drivers of growth, as the opportunities created by the process of globalization may not be fully exploited (Birdsall, 2006; World Bank, 2006).

While there is by now a well developed and extensive body of work investigating the effects of globalization on growth and volatility,² there has been less attention to the potential effect of globalization on income inequality. Jaumotte, Lall, and Papageorgiou (2008) aim to fill this gap by examining the impact of both trade and financial globalization, whereas the existing literature has focused only on trade, with little attention paid to financial globalization (exceptions are Behrman, Birdsall and Székely, 2003; Claessens and Perotti, 2007). The cross-country analysis employs a new dataset on income inequality—based on Chen and Ravallion (2004, 2007) and Luxemburg Income Studies datasets—that produces greater methodological consistency in survey-based inequality measurements across countries and over time.

The analysis of the available data by Jaumotte, Lall, and Papageorgiou (2008) yields two main conclusions. First, the main factor driving the recent increase in inequality across countries has been technological progress. Technological progress alone explains most of the increase in the Gini coefficient from the early 1980s, supporting the view that new technology, in both advanced and developing countries, increases the premium on skills and substitutes relatively

¹See “Growth is Good,” *The Economist*, May 27, 2000; and J. Forsyth (Oxford United Kingdom), letter to the editor, *The Economist*, June 10, 2000.

²For a comprehensive review of this literature, see Prasad and others (2007) and Kose and others (2009).

low-skill inputs. Interestingly, among developing countries, the effect of technological progress is stronger in Asia than in Latin America, possibly reflecting the greater share of technology-intensive manufacturing in Asia.

Second, globalization has had a much smaller effect relative to technological change, reflecting the opposing influences of trade and financial globalization on inequality. On the one hand, trade globalization has actually contributed to reducing inequality. The positive effect of trade on reducing income inequality is particularly noticeable for agricultural exports, especially in developing countries where agriculture still employs a large share of the workforce. The net impact of tariff reduction is also found to be positive in reducing income inequalities. For advanced economies, rising imports from developing countries are associated with declining income inequality, presumably through the substitution of lower-paying, low-end manufacturing jobs in advanced economies with higher-paying service sector jobs such as retailing and consumer finance. On the other hand, foreign direct investment (FDI) has had a disequalizing impact on the distribution of income, as higher FDI inflows have increased the demand for skilled labor, while outward FDI in advanced economies has reduced the demand for relatively lower-skilled workers in these countries.

What do these findings imply for policymakers as countries become increasingly integrated through trade and financial flows? Overall, technological progress and FDI are associated with higher growth, and their disequalizing effect reflects an increase in the returns from acquiring higher skills. The appropriate policy response is therefore not to suppress FDI or technological change, but to make increased access to education an important priority. This would allow less-skilled and lower-income groups to capitalize on the opportunities from both technological progress and the ongoing process of globalization. Similarly, broadening access to finance, such as by improving institutions that promote pro-poor lending, could help improve the overall distribution of income even as financial development broadly continues to support overall growth.

A complementary approach to the cross-country analysis of the impact of globalization on inequality is based on country studies (Goldberg and Pavcnik, 2007). The advantage of intra-country studies is that they focus on more detailed measures of inequality (i.e., wage inequality), and at a finer level of disaggregation geographically or by sector. In addition, they also utilize more detailed data on other variables such as tariffs and social policies. As a result, such studies tend to have a country-specific focus and provide a useful complementary perspective to that gained from

cross-country work. Recent studies on Mexico, China, and India illustrate the usefulness as well as the limitations of country studies.

Mexico undertook radical reforms between 1985 and 1994 to open its economy to trade and capital flows. Over the same time period, the earnings gap between high- and low-skilled workers began to widen, generating a substantial literature examining whether this was caused by the process of opening up. Hanson and Harrison (1999) find that 1984 industry tariffs are negatively correlated with the 1984 industry ratio of white-collar to blue-collar employment. However, the 1984–90 change in industry tariffs is positively correlated with this employment ratio, implying that trade protection was initially higher in less skill-intensive sectors, and was reduced by more in these sectors during reform. If these tariff changes were passed through to changes in the prices of goods, then this would imply that the relative wage of skilled labor would have risen. Robertson (2004) finds evidence in support of this conclusion, with the relative price of skill-intensive goods in Mexico rising during 1987–94 and raising the relative wage for white-collar labor. Other studies with a slightly different focus find that, while globalization may have contributed to widening earnings inequality in Mexico, low-skill workers are better off in absolute terms as a result of the policy changes (Nicita, 2004; Hanson, 2007).

The dramatic increase in trade openness in China has been accompanied by striking increases in income inequality, with the Gini coefficient rising sharply from 0.28 in 1981 to 0.42 in 2004. However, a closer look at the data reveals that such aggregate numbers may present a slightly distorted view of underlying changes. Wei and Wu (2007) examine the effect of trade globalization on Chinese income inequality using new methods and two unique datasets on Chinese regions. The analysis reveals that an increase in openness reduces urban-rural income inequality, leads to a modest increase in intra-urban inequality, and decreases intra-rural inequality. Summing up the three components of inequality, the authors estimate the effect of openness to modestly reduce overall inequality. This finding is in contrast with the popular perception that trade openness has contributed to the rise in income inequality in China.

India intensified reforms aimed at opening up the economy in the early 1990s through the reduction in tariffs and nontariff barriers, barriers to FDI and restrictive domestic regulations. Topalova (2007) examines the variation in the preliberalization industrial composition across districts in India and the degree of liberalization to foreign trade and FDI across industries. Results from this work indicate that

trade liberalization led to an increase in inequality, especially in urban districts, where the incomes of the richest and those with higher education rose substantially faster relative to households in the bottom of the income distribution. Moreover, there does not appear to be any relationship between FDI and inequality within a district in either the rural or urban samples. An important qualification of this exercise is that it does not study the country-wide effect of globalization on inequality. While liberalization may have had an overall effect of increasing or lowering inequality, the difference-in-difference methodology tests whether this effect was unequal, and whether certain districts benefited more from globalization than others. Other studies on the effects of tariff changes on wages in Indian districts find mixed results (Dutta, 2004; and Kumar and Mishra, 2008).

In summary, intra-country analyses of globalization and inequality reveal an intricate picture of their interrelationship that cannot be captured in cross-country studies. The evidence suggests that the mechanisms through which globalization affects inequality are country-, case-, and time-specific, reflecting the vast heterogeneity of countries and the nature and timing of their trade reforms. Such analyses also demonstrate that intra-country studies address questions somewhat different from those in cross-country studies.

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(continued on page 6)

The Current Account of Oil-Exporting Countries

(continued from page 1)

consumption by saving more during good times, thereby accumulating assets that might sustain consumption levels in the event of a negative shock, such as an unemployment spell. Translating it to the analysis of countries, windfalls in export revenues due to transitory terms of trade shocks ought to be saved and put aside in a rainy day fund, and that is how countries seem to behave (Kent and Cashin, 2003).

Oil-exporting countries, however, present a special case. Not only do most movements in oil prices seem to be transitory (see Barnett and Vivanco, 2003), but because oil reserves are finite and exhaustible, the whole stream of oil revenue from beginning of exploration through depletion can be seen as transitory from a longer-term perspective. To the extent that current generations value the welfare of their children, some of the oil wealth will be saved and shared with future generations and this will be reflected in the behavior of the current account. The desire to spread the oil wealth across generations is often called the intergenerational equity motive.

There is a plethora of IMF research applying this intuition for specific oil-exporting countries, both for the determination of the current account and the fiscal balance. Typically in this literature, the authors derive an “optimal” path for the current account or fiscal balance that is consistent with a specific distribution rule (e.g., oil wealth should be consumed in equal amounts every year from today to eternity). Unfortunately, economic theory does not have much to say about how oil wealth should be distributed across generations. This choice in theory rests on a moral question, but ultimately depends on the aggregation of the preferences of policymakers and consumers. That is not a trivial issue because the optimal current account and fiscal balance paths predicted by the intergenerational equity motive are highly sensitive to the choice of oil wealth distribution rule. For instance, in a country with a growing population, the size of savings required to sustain constant aggregate consumption out of oil wealth indefinitely is substantially smaller than if the goal were to sustain constant per capita consumption out of wealth.

This point has also been observed in a number of recent studies. Maliszewski (2009) presents a welfare comparison of different fiscal rules for oil countries. Authors have differed on how they propose the sharing of oil wealth over time. The basic intergenerational equity model was used by, among others, de Carvalho Filho (2007) for Trinidad and Tobago; Leite (2004) for the Republic of Congo; Kim (2005)

for Timor-Leste; Segura (2006) for São Tomé and Príncipe; Takizawa (2005) for Kuwait; and MCD Working Group on Exchange Rate Assessments (2008) for Middle Eastern oil producers. Bailen and Kramarenko (2004) analyzed both cases of constant and growing consumption out of oil wealth for the Islamic Republic of Iran; Lohmus (2005) considered the case of a constant per capita non-oil deficit for Kazakhstan.

Some applications of the PIH model have found large discrepancies between actual fiscal or current account balances and the levels required for an equitable distribution of oil wealth across generations. In search of more realism, some authors also incorporated habit in consumption in order to model a gradual transition toward the “optimal” path (e.g., Leigh and Olters, 2006, on the fiscal balance for Gabon; Carcillo, Leigh, and Villafuerte, 2007, on the Republic of Congo) or explicit adjustment costs (e.g., Engel and Valdés, 2000); and differences between underlying discount rates and the rate of return on financial assets are modeled as a consumption-tilting term in Thomas, Kim, and Aslam (2008).

However, the exhaustibility of oil reserves is not the only peculiarity of oil-exporting countries. Almost by definition, the exports of oil countries are typically less diversified and their prices are more volatile than for other countries, and that is directly reflected in higher volatility of terms of trade and income more generally. While in theory some small oil exporters might be able to hedge future oil prices—more on this later—in practice (in most cases) they do not. The observation that oil exporters are exposed to the vagaries of oil prices motivates Bems and de Carvalho Filho (2009a) to explore the importance of the precautionary savings motive in the current account of oil-exporting countries, building on the precautionary saving analysis by Ghosh and Ostry (1997). The intuition is that in the absence of explicit insurance, oil countries need to rely on self-insurance, and therefore they might save more during boom times than warranted by intergenerational equity.

The model by Bems and de Carvalho Filho (2009a) implies that precautionary savings are positively related to the weight of exhaustible resources in economic activity, i.e., less diversified countries have a stronger motive to run larger current account balances as a mechanism of self-insurance. This prediction seems to be borne out by the data. The cross-sectional distribution of current account balances generated by the calibrated model has a surprisingly good fit to the actual data. Interestingly, Shabsigh and Ilahi (2007) argue that oil-exporting countries that

self-insure through the establishment of oil funds also manage to reduce the volatility of broad money and lower inflation.

Another stream of IMF research has used panel data methods to estimate the medium-run determinants of the current account balance for oil exporters and other countries (MCD Working Group on Exchange Rate Assessments, 2008; Bems and de Carvalho Filho, 2009b; Morsy, 2009; Arezki and Hasanov, 2009). This research draws on the so-called “macroeconomic balance” approach, which is based on the equilibrium relationship between current account balances and a set of fundamentals (measured, when relevant, as differences from trading partners’ averages). These fundamentals include variables such as the fiscal balance, demographics, the oil balance, and economic growth, which are all robust determinants of the current account balance in a panel including advanced and emerging market countries (Lee and others, 2008), and fundamentals specific to oil countries such as oil wealth and the degree of maturity in oil production (Morsy, 2009).

Focusing first on those variables found to have similar effects on the current account balance in oil exporters and importers, the estimates imply that the effects of demographic variables and per capita GDP growth are statistically and economically indistinguishable across oil exporters and importers. On the other hand, changes in the non-oil fiscal balance (i.e., the fiscal balance excluding oil revenues) and the oil balance (oil exports minus oil imports) have a stronger positive effect on the current account balance for oil exporters than for importers; and an increase in relative income raises the current account balance significantly more in oil countries than in other countries, perhaps because of precautionary savings (MCD Working Group on Exchange Rate Assessments, 2008; Bems and de Carvalho Filho, 2009b). Morsy (2009) also finds that oil wealth has a significant negative impact on the medium-term current account, but her results are inconclusive on the effect of the degree of maturity of oil production. Arezki and Hasanov (2009) also find that fiscal balances have a much stronger effect on the current account of oil exporters than other countries.

While one could question the strength of the evidence about the relative importance of intergenerational equity and precautionary savings motives, there is little doubt that the incomes of oil-exporting countries have been more volatile than for other countries in similar levels of development. Borensztein, Jeanne, and Sandri (2009) argue that hedging future oil prices may generate large welfare gains, as

it reduces the need for precautionary savings or improves a country’s ability to borrow against future income. It is puzzling that so little commodity price hedging occurs. Daniel (2001) argues that governments have held back from the use of explicit insurance, mainly because of political constraints. Mexico has recently set an example, as its hedging of 2009 oil exports seems to have been profitable.

Finally, some other questions have also received attention in this literature. For example, Takizawa, Gardner, and Ueda (2004) argue that when there are positive external effects of public spending and the economy has too little capital, then spending oil wealth up front may be better than spreading it across generations. Enders (2009) builds a simple two-sector model to illustrate the joint determination of the current account and the real exchange rate in oil-exporting countries. Wiegand (2008) finds that sharp changes in the flows of savings from oil-exporting countries may be disruptive to oil-importing countries that rely on bank loans to finance external deficits, as do many central and eastern European countries.

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(continued on page 6)

Visiting Scholars, July–September 2009

- Paola Giuliano; 6/26/09–8/2/09
 Jean Imbs; University of Lausanne, Switzerland;
 8/10/09–8/20/09
 Kajal Lahiri; University of Albany, State University of
 New York; 8/18/09–8/20/09
 Enrique Mendoza; University of Maryland;
 9/1/09–4/30/10
 Chris Rodrigo; 8/17/09–2/26/10
 Guido Martin Sandleris; Universidad Torcuato Di
 Tella; 9/8/09–9/11/09
 Bharat Trehan; Federal Reserve Bank of San Francisco;
 8/17/09–8/24/09
 Romain Wacziarg; UCLA Anderson School of Man-
 agement; 8/18/09–8/21/09
 Kenneth West; University of Wisconsin;
 8/2/09–12/31/09

The Current Account of Oil-Exporting Countries

(continued from page 5)

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Does Trade and Financial Globalization Cause Income Inequality?

(continued from page 3)

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IMF to Launch New Research Journal

The International Monetary Fund has announced the launch of a new research publication entitled *IMF Economic Review*. The first issue will be published in mid-2010.

IMF Economic Review will succeed the Fund's current official research journal, *IMF Staff Papers*. The new journal will be dedicated to publishing peer-reviewed, high-quality, academic research by leading authors on such topics as global economic policies, open economy macroeconomics, and international finance and trade.

"To navigate the global crisis, and to take the best policy decisions, will require mobilizing and extending the knowledge we have about open economy macro, from the implications of liquidity traps, to the dangers of large fiscal deficits, to macro-financial interactions, to the contours of a better international monetary and financial system," commented Olivier J. Blanchard, IMF Economic Counsellor and Research Department Director. "My hope and my expectation is that the *IMF Economic Review* will be central to the effort."

IMF Economic Review will emphasize rigorous analysis with an empirical orientation that is of interest to a broad audience, including academics and policymakers. Studies will borrow from, and interact with, other fields such as finance, international trade, political economy, labor, and economic history and development.

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"There is great need for a rigorous academic publication that addresses the key global macro questions of our times," stated Gourinchas. "This is what the *IMF Economic Review* aims to be."

The journal's Editorial Board includes distinguished researchers from the IMF and academia, including Christian Broda, Ariel Burstein, Stijn Claessens, Giancarlo Corsetti, Gita Gopinath, Gian Maria Milesi-Ferretti, Maurice Obstfeld, Chris Papageorgiou, Romain Ranciere, Martin Schneider, Antonio Spilimbergo, Linda Tesar, Carlos Vegh, Jaume Ventura, and Kei-Mu Yi.

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IMF Staff Papers

Volume 56 Number 3

Trade Openness and Growth: Pursuing Empirical Glasnost

Andreas Billmeier, and Tommaso Nannicini

Public Debt, Money Supply, and Inflation: A Cross-Country Study

Goohoon Kwon, Lavern McFarlane, and Wayne Robinson

Net Capital Flows, Financial Integration, and International Reserve Holdings: The Recent Experience of Emerging Markets and Advanced Economies

Woon Gyu Choi, Sunil Sharma, and Maria Strömqvist

Special Section: Current Account Sustainability in Major Advanced Economies

Introduction

Akito Matsumoto

Expected Consumption Growth from Cross-Country Surveys: Implications for Assessing International Capital Markets

Charles Engel and John H Rogers

Global Dispersion of Current Accounts: Is the Universe Expanding?

Hamid Faruquee and Jaewoo Lee

How Long Can the Unsustainable U.S. Current Account Deficit Be Sustained?

Carol C. Bertaut, Steven B. Kamin, and Charles P. Thomas

Asset Prices and Current Account Fluctuations in G-7 Economies

Marcel Fratzscher and Roland Straub

Global Imbalances, Productivity Differentials, and Financial Integration

Suparna Chakraborty and Robert Dekle

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Seven Questions about Policy Options for Emerging Market Countries

Marcos Chamon, Chris Crowe, and Jun Il Kim



There has been a vibrant discussion about the policy options for emerging market countries to cope with the global financial crisis. What kind of countercyclical policies might be



feasible? How can harmful balance sheet effects be avoided? What is the role for the International Monetary Fund? Based on the results of recently-issued IMF Staff Position Note by the authors along with Rex Ghosh and Jonathan Ostry,¹ this article provides

brief answers to seven commonly asked questions about how emerging market economies can best respond to the current global crisis.

Question 1: Are the policy options available to emerging market economies trying to cope with the current crisis different from those in previous crises?

There is an important distinction between emerging market economies that were ripe for a home-grown crisis associated with the end of unsustainable credit booms or fiscal policies, and those that were just bystanders caught up in the storm. For the first group, the options are fairly limited, and, as with previous emerging market economy crisis episodes, may entail painful adjustment measures. But a number of emerging market economies have taken advantage of the benign external environment prior to the crisis to make their economies more resilient by pursuing sound macroeconomic policies. Thus, unlike in previous crises episodes, many emerging market economies now have room to pursue countercyclical policies, and we encourage them to explore their options.

On more specific points of departure, the Staff Position Note raises questions on the effectiveness of an interest rate defense of an exchange rate peg, which was once a common

¹“Coping with the Crisis: Policy Options for Emerging Market Countries,” IMF Staff Position Note 09/08, April 23, 2009 (Washington, International Monetary Fund).

feature in IMF-supported programs (although tight monetary policy is still likely to be necessary in the aftermath of a devaluation in order to prevent an inflation-depreciation spiral; see Ghosh and others, 2002). On fiscal policy, the note makes the case for a countercyclical policy provided there is enough fiscal space to pursue it (which is often not the case for countries in the midst of a crisis).

Question 2: Does the Staff Position Note reflect a real change with respect to previous IMF advice and thinking on these issues?

IMF advice has evolved in response to changing conditions in the global economy. The IMF’s policy advice has evolved not because it was wrong, although a few mistakes were made in the past (see IMF Independent Evaluation Office, 2003), but rather because the current crisis has many unique features, and conditions globally and among emerging market economies have evolved since the previous round of emerging market crises. As mentioned above, the pursuit of sound macroeconomic policies has created an unprecedented scope for countercyclical policies in many emerging market economies. And even countries facing a home-grown crisis can count on far greater levels of official assistance than would have been available in the past, thanks to recent changes in the IMF’s lending framework. In most cases, this has allowed for adjustment under much less strict conditions than before.

Question 3: Insolvencies and debt overhangs seem to be critical constraints in many emerging market economies hit by the current crisis. What kind of policies are likely to help with this?

We see four potential elements to an effective approach. The first step is to ensure there is sufficient domestic currency liquidity to prevent liquidity problems from evolving into solvency concerns. In some cases, insolvencies can be avoided by the provision of foreign currency liquidity, particularly where there are concerns about the effect of exchange rate depreciation on domestic balance sheets. Another key factor is the institutional and legal framework for resolving corporate bankruptcies. For instance, Djankov and others (2008) have demonstrated that insolvency proce-

dures across different countries currently vary significantly in quality and effectiveness. The inefficiencies associated with the least effective regimes are likely to be particularly costly for emerging market economies during the current crisis. Finally, some governments may have to provide fiscal support for debt restructuring, particularly where debt overhangs would otherwise imperil the banking system. This support could include the conversion of foreign currency banking system assets to domestic currency, or recapitalization of domestic banks.

Question 4: What is the appropriate balance between different macroeconomic policies such as exchange rate, monetary and fiscal policy?

There is no one-size-fits-all prescription, and the appropriate policy mix depends on the particular circumstances in each country. Except for countries already in a home-grown crisis, the basic thrust of macroeconomic policies should be towards easing. But there are a number of important trade-offs that should be taken into account. In easing monetary policy, for instance, central banks need to be mindful of the trade-off between the benefits of lower interest rates and a weaker exchange rate for economic activity, and the negative impact of depreciation on unhedged balance sheets. How much to let the exchange rate depreciate may depend on a number of factors—including initial overvaluation, the exchange rate regime, balance sheet effects, and the possible regional contagion and systemic implications. Similarly, fiscal easing may be counterproductive if it jeopardizes policy credibility and the sustainability of the public finances.

Given a targeted level of aggregate demand, a more expansionary monetary policy can compensate for a less expansionary fiscal policy—though both may be relatively ineffective if domestic credit markets are impaired. Substituting for monetary easing by fiscal expansion can be constrained by debt sustainability concerns, as both relatively higher interest rates and fiscal spending will worsen the debt dynamics.

Question 5: Can emerging market economies afford the same kind of fiscal stimulus packages that we've seen in some advanced countries?

In general, no. Fiscal space is often much more constrained in emerging market economies than in advanced economies. Given generally weaker budgetary processes, many emerging market economies have far less scope than advanced countries for fiscal expansion without under-

mining confidence in debt sustainability, and hence facing higher borrowing costs. In fact, fiscal policy in many emerging market economies has tended to be procyclical, since the business cycle is often driven by capital flows, and when inflows dry up, financing an expansionary fiscal stance becomes much more difficult.

Nor is it clear that emerging market economies would derive as much benefit from a looser fiscal stance as advanced economies. The limited empirical evidence available suggests that fiscal policy tends to have smaller and more transient stimulative effects in emerging market economies (Spilimbergo and others, 2009; Ilzetki and Vegh, 2008; Ghosh and Rahman, 2008). This likely reflects the fact that these economies are typically more open, more constrained in their ability to support the fiscal expansion with a looser monetary stance, and more subject to market fears over debt sustainability. Many emerging market economy governments will also need to devote substantial fiscal resources to dealing with the debt overhang and banking sector problems discussed earlier. This will leave few resources available for other fiscal policy measures.

Having said this, where fiscal policy options are available, emerging market economy governments can and should use the tools at their disposal to offset the growth impact of the crisis. Automatic stabilizers—which typically generate fewer concerns over debt sustainability than discretionary measures—are a clear example. Discretionary measures need to be clearly targeted: for example, protecting the poor would not only have a stimulative impact (as the poor have a high marginal propensity to consume), but would also help to strengthen the social safety net.

Question 6: What about monetary policy? Do central banks in emerging market economies need to resort to unconventional policies?

While conventional policies should be used first, they may have a limited effect on credit markets if the standard monetary policy transmission mechanisms are impaired (for example, if the policy interest rate approaches the zero nominal bound, or if greater bank liquidity fails to translate into additional lending). Structural impediments to monetary transmission, such as excessive reserve requirements, should be reduced with prudence. If credit markets remain unresponsive to lower interest rates, or the central bank needs to engage in lender-of-last-resort operations in a systemic banking crisis, then the bank could resort to unconventional policies. For example, central banks can extend liquidity by increasing the range of accepted col-

lateral assets, by purchasing (and selling) specific assets with a view toward decreasing their yields (credit easing) or, albeit advisable only in extreme situations such as when the policy rate is already set to zero, by expanding their balance sheet to purchase assets such as longer-maturity government bonds (quantitative easing). Likewise, stabilizing the exchange rate in the midst of global deleveraging may only be possible through direct sales of central bank reserves in the foreign exchange market. Finally, the country could as a last resort regulate capital transactions—though these carry significant risks and long-term costs. Ariyoshi and others (2000) provide a comprehensive review of countries' experiences with capital controls; other evidence for and against their use is provided by Kaplan and Rodrik (2002) and Dornbusch (2002).

Question 7: One feature of the crisis has been widespread cross-border deleveraging by banks. How can emerging market economies make sure that bank credit does not dry up?

The decline in the availability of credit from domestic subsidiaries of foreign parent banks has been a pervasive feature of the current crisis, as during some previous episodes. In general, the greatest risks are posed to countries where credit growth has been particularly rapid, so that corporate and household borrowers face significant rollover needs and hence a real risk that illiquidity could rapidly translate into insolvency. A key issue is whether deleveraging reflects liquidity needs at parent banks (in which case funds will typically be pulled out of the better-performing, most liquid, markets first) or concerns about deteriorating asset quality in the emerging market economy in question. In the former case, policies to limit the fall-off in credit could have a positive impact; in the latter, they are more likely to make things worse.

Where appropriate, the provision of central bank liquidity, including foreign currency liquidity, can help, although there is also a risk that the additional liquidity simply facilitates capital outflows. We would expect that conventional monetary policy measures (e.g., reducing the policy interest rate) would have only a limited impact on credit markets where the credit contraction is driven mainly by forced deleveraging resulting from liquidity needs at foreign parents. Unconventional monetary policy measures, such as credit easing, could help to reduce specific spreads, such as that on inter-bank lending, although there is no real evidence that these measures have anything more than a transi-

tory effect. Finally, where the authorities have to resort to bank recapitalization measures, they could use their equity stake to ensure that recapitalized institutions to maintain credit lines. However, weak institutional quality in many emerging market economies, which has been associated in the past with financial suppression and corrupt or inefficient directed lending policies at state-mandated institutions, suggests that this kind of government involvement in credit allocation decisions is in general best avoided, except as a temporary measure.

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(continued from page 11)

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The conference provides a forum to discuss innovative research in economics undertaken by IMF staff and outside economists, and facilitates the exchange of views among researchers and policymakers. Ricardo Caballero will deliver this year’s Mundell-Fleming lecture.

The conference program includes contributions from Viral Acharya, Tobias Adrian, Lucian Bebchuk, Effi Benmelech, Nittai Bergman, Itay Goldstein, Zhiguo He, Kamil Herman, Deniz Igan, Sebnem Kalemli-Ozcan, Arvind Krishnamurthy, Wenli Li, Atif Mian, Prachi Mishra, Thomas Philippon, Philipp Schnabl, Hyun Shin, Amir Sufi, Thierry Tresselt, Harald Uhlig, Michelle White and Carolina Villegas-Sanches.

The conference will conclude with a policy panel on “Macro-Financial Policies after the Crisis” chaired by Olivier Blanchard. The panel will include Franklin Allen, Randy Kroszner, Larry Meyer, and Eswar Prasad.

More information about the conference can be found at <http://www.imf.org/external/np/res/seminars/2009/arc/index.htm>

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