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The IMF and the International Financial Crisis

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Abstract

As recently as 2007, the relevance of the International Monetary Fund (IMF) to global finance was questioned. Today, its influence is evident in both developed- and developing-country settings as world leaders respond to a global economic crisis. In this paper I examine the onset of the international financial crisis and its implications for the world economy. I consider the IMF's role in this crisis in three dimensions: forecasting the crisis, acting as lender of last resort, and providing expertise in designing and supervising macroeconomic reforms. Evidence suggest that its skill in forecasting is no greater than other agencies, but that its "lender of last resort" and reform expertise have been its comparative advantage in this crisis period.

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On 23 September 2007, Dominique Strauss-Kahn was named the Managing Director of the International Monetary Fund (IMF). In his speech on that day, he summarized the challenges facing the IMF as follows: “relevance and legitimacy”.¹ Eighteen months later, the Group of 20 meeting of April 2009 voted to triple IMF lending capacity and authorized a substantial expansion in the stock of special drawing rights in circulation.² The IMF has gone in short order from a supernumerary role to a central place on the world stage. What brought about this shift?

In the first section I describe the causes and effects of the international financial crisis. In the second section I turn to the IMF, both as it began in the 1940s and as it evolved, especially in response to criticism in the last decade. In the third section I analyze the shift of the IMF to center stage in this crisis. Is it due to a greater ability to anticipate the crisis and its effects? Is it due to its facility in lending cum conditionality? Or is it simply a manifestation of a “lender of last resort” function – when other financial intermediaries are reluctant to lend, the IMF once again becomes relevant? In the fourth section I conclude that based on the evidence of the last few years the IMF’s ability to forecast the effects of financial crisis does not cause it to stand apart. Its central role seems rather to stem from (a) a global desire to re-establish a lender of last resort for the crisis and (b) a perceived need on the part of creditors for the IMF’s traditional lending-cum-conditionality product.

1. What is the international financial crisis?

By the “international financial crisis” I refer to the economic crisis that affected advanced economies first and foremost beginning in 2008, and then spread to emerging and developing economies through both trade and financial channels. As Table 1 illustrates, output growth in the advanced economies began its collapse earlier and became more recessionary than in most emerging and developing economies. Among the emerging and developing economies, those countries with closest economic links to Europe and the US were on average more strongly affected (Eastern Europe and CIS for Europe, Western Hemisphere for the US). In early 2010, the World Economic Outlook (2010, p. 6) predicted a “multi-speed” recovery over the next few years – IMF shorthand for rapid growth among emerging and developing markets coupled with an anemic recovery in the advanced economies.

A. What caused the crisis?

This financial crisis, because of its heavy negative impact in advanced economies and its largely unpredicted onset *ex ante*, has led to a tsunami of research papers. There is widespread agreement that the trigger for the crisis was the downturn in housing values in US real estate markets in the mid- to late-2000s. The controversy begins with the possible explanations for why such a relatively minor event should cause a global recession on the scale represented in Table 1. I will provide a brief summary of the arguments, and encourage the reader to visit the original sources for a detailed analysis.

- **Psychological factors.** Economists refer to “irrational risk taking” among those issuing mortgages and those purchasing collateralized debt obligations based on those mortgages. Akerlof and Shiller (2009) provides a nice summary, while Shefrin (2009) reminds us that what some people call “irrational” is really just “behavioral corporate finance” – incentives within the

¹ As reported in Weisman (2007).

² The Final Communiqué from the meeting is found at <http://www.g20.org/Documents/final-communication.pdf>.

firm are not aligned with what economists will identify as “rational behavior”. In this view, the crisis stemmed from a lack of appreciation among market participants of the riskiness of the financial instruments.

Vaubel (2009, p. 1) puts this point in a less pathological way. “Error is inevitable in any innovative activity.” Financial innovation created opportunities, but also created uncertainty about how the financial instruments would work. This uncertainty was so fundamental that the analysts could not define a probability distribution for future outcomes: there was no track record from which those probabilities could be estimated. Instead, analysts forecast outcomes based upon an approximate distribution that proved in retrospect to be flawed in important respects. Overbye (2009) provides a fascinating *post mortem* for one such method.

- **“Overleverage” of financial institutions.** As Dooley (2010) puts quite cogently, financial institutions have an economic incentive to “lever” their equity – to undertake borrowing valued at many multiples of their equity in order to purchase assets that promise payoffs in excess of the cost of borrowing. The natural counterbalance to overleveraging in the bank’s calculus is the risk that the asset will lose value – or, in the extreme, that the asset’s issuer will default on its obligations. Some financial institutions hedged against this risk through the purchase of credit default swaps, and did not consider the risk that these swap contracts might not be honored. Others simply assumed that they had purchased essentially riskless assets. In this, the risk rating agencies such as Standard and Poor’s share responsibility for having identified many of the mortgage-based securities as low risk (i.e., AAA rating).

The overleveraged financial structure led to an augmentation of the crisis. A reduction in the value of one bank asset in the absence of substantial equity will lead to the financial institution either selling equity (to retire liabilities) or defaulting in turn on its liabilities. As Brunnermeier (2009) notes, this also had cascading effects through the network of interbank borrowing.

- **Lax regulation and supervision.** The financial institution’s incentive to overleverage and the consequent effect on other participants in the financial system are the rationale for government regulation of this sector. In recent years in the US, however, this regulation and supervision had become less stringent. Claessens et al. (2010) provide a discussion: while commercial banks were supervised, there were many financial institutions that were not regulated or supervised as closely: hedge funds and investment banks are examples of these. Furthermore, commercial banks had become adept at evading regulation through the creation of special investment vehicles. Regulators at the Federal Reserve System, Federal Deposit Insurance Corporation and Securities and Exchange Commission had adopted a *laissez faire* approach to financial activities that did not directly concern the deposit-taking from the population. This allowed the “irrationality” of behavior and the “overleveraging” of financial institutions to expand rapidly.

Dooley (2010) draws a bright line between regulation and supervision. He argues that governments already have sufficient regulatory powers, and that creation of new regulations will simply cause financial institutions to find creative ways to evade them. The failure, in his view, has been in supervision and oversight of existing regulations.

- **Global imbalances.** Excess saving in Asia (primarily Japan and China) paired with the excess spending in the US created a global imbalance. Bernanke (2005) posits that this excess saving kept US interest rates low. It also encouraged the accumulation of debt by consumers as well as corporations and financial institutions, thus increasing the “overleveraging” of the US economy. Dooley (2010) disputes this logic, since this imbalance had existed throughout the decade. Blanchard and Milesi-Ferretti (2009) agree that global imbalances did not cause the crisis, but assert that they did amplify the effect. Brunnermeier (2009) notes the dynamic of continuing low interest rates encouraged investors to take increasingly risky positions.

Claessens et al. (2010) ask an interesting question: How did this financial crisis differ from those observed in previous years? When compared to the Asian crisis, for example, they find three salient differences. First, this crisis involved the use of complex and not easily valued financial instruments. Second, the degree of overleveraging by financial institutions was much greater. Third, the household sector in the US played a central role.

At its base, this international financial crisis is similar to those that came before in that it was rooted in a speculative bubble. Kindleberger (2000) was an early expositor of this behavior, and documented that speculation will lead to a rapid run-up in price followed by a crash. In the current instance the bubble is found in the US real-estate market. While the speculators believed that their purchase of credit default swaps had hedged their risks, the failure of AIG, the major issuer of these swaps, appeared to return the risk to the speculators. Laibson and Mollerstrom (2010) investigate this “bubble” behavior in a simulation model and conclude that it provides a persuasive description of the current financial crisis.

B. What propagated the crisis across borders?

The rationale given above is sufficient to explain why the US economy fell into crisis, but it does not explain why the other advanced economies so quickly fell into crisis as well. The rapid propagation can be attributed to three features of the behavior of financial institutions in advanced economies.

- Collateralized debt obligations provided an opportunity for speculators throughout the world to participate in the bubble. As von Peter and McGuire (2009) point out, commercial banks throughout the world expanded their assets through purchase of USD-denominated claims on non-bank entities. These were typically USD-denominated debt instruments (collateralized debt obligations, corporate bonds) and were financed through the issuance of own liabilities (for example, on interbank markets). These assets lost value as the US crisis intensified, causing commercial banks in advanced countries to reduce their liabilities in synchronized fashion. Kamin and De Marco (2010) called this propagation channel “direct contagion”, and found that it was a relatively minor transmission channel.
- The expansion of bank balance sheets throughout the world was disproportionately financed through issuance of USD-denominated short-term liabilities. When the crisis began, all commercial banks had difficulty in “rolling over” these liabilities. When rolling over was not possible, the banks had to sell assets at fire-sale prices in order to retire the liabilities. Raddatz (2010) demonstrated that for banks in 44 countries, those

with large non-deposit liabilities experienced a significantly larger fall in equity value in the aftermath of the AIG nationalization.

- Kamin and De Marco (2010) attribute the majority of the propagation effect across borders to what they call “indirect contagion”. In their view, financial actors throughout the advanced economies observed the US experience. They also observed that banks in other countries had adopted a similar, highly leveraged, business model. This observation triggered a synchronized “run” on the banks in advanced economies. Blanchard (2008) also notes the importance of “bank run” mentality in the amplification of the crisis and its spread across borders.

As a result of these propagation channels, the financial crisis in each country took similar form. There was (1) a subset of financial institutions that became insolvent due to their bets on these collateralized debt obligations, (2) a large percentage of financial institutions that faced a shortage of liquidity (short-term borrowing) in the aftermath of the crisis, and (3) a majority of commercial borrowers in the advanced economies that found that short-term borrowing was either very costly or impossible.

C. What was the impact on emerging and developing countries?

As noted in Table 1, the impact of the crisis on emerging and developing countries varied substantially among regions. This was due to the dual channels for transmission to these countries. While it was not common for emerging-economy financial institutions to hold the speculative collateralized debt obligations, some emerging economies faced substantial financial shock due to the crisis. In addition, the reduction of growth in the US, Japan and Europe led to a reduction in demand for emerging- and developing-economy exports.

While it seems long ago now, there was a period from early-2007 to mid-2008 when the emerging markets appeared insulated from the crisis in the advanced economy. Dooley and Hutchison (2009) study the propagation of the crisis to emerging economies, and find that the “decoupling” period existed. They also find that the emerging economies “recoupled” completely, so that by Lehman Day (15 September 2008, when Lehman Brothers declared bankruptcy) the emerging economies were once again integrated with, and sharing the shocks emanating from, the advanced-economy financial markets.

Those emerging economies that shared most completely in the financial crisis were those in which multinational banks had become dominant and less regulated. Cetorelli and Goldberg (2010) provide empirical evidence of three financial transmission channels to emerging markets: (1) direct reduction in cross-border lending by multinational banks, (2) contraction in local lending by multinational-bank affiliates in emerging markets, and (3) reduction in local-bank lending due to a “sudden stop” in interbank lending received from a multinational bank. They find econometric evidence of each channel providing a negative funding shock to emerging markets. Canales-Krijlenko et al. (2010) make the same point through a case-study comparison of financial systems in Eastern Europe and Latin America. In Eastern Europe, multinational banks and their affiliates were in the majority, and were vehicles for lending internationally secured funds. In Latin America, the penetration of multinational banks was less pronounced and the lending activities undertaken were more highly regulated. Dooley (2010) remarks that the Asian countries were largely spared the financial shock because they continued the close supervision of their home financial sectors begun in the aftermath of the Asian crisis. Financial

institutions there were not allowed to become overleveraged or to follow the “risky business” model of the advanced-economy financial institutions, and so were largely insulated from the financial shock.

The emerging and developing economies that dodged the financial shock did not escape unscathed from the crisis. In the large study by te Velde (2010) for the Overseas Development Institute, reporters from developing and emerging economies around the world reported a list of negative effects of the crisis on their economies through changing advanced-economy behavior:

- Reduction in portfolio investment flows (due to the flight to safe havens);
- Reduction in direct foreign investment in emerging and developing economies (due to the economic downturn);
- Reduction in remittances (due to the economic downturn);
- Reduction in exports of tradable goods and services to the advanced economies.

Chor and Manova (2010) identify a credit-related effect on exports: the crisis caused a reduction in trade credits that led to greater reductions in emerging-economy exports that rely most heavily on those credits.

D. What worked best to insulate economies from the financial crisis?

Dooley (2010) identifies one key factor: the degree of government supervision of the financial sector. Countries with strict supervision, whether advanced (Canada) or emerging (China), escaped the worst of the financial shock. This supervision discouraged the speculation in collateralized debt obligations, but also discouraged the overleverage that amplified the crisis in other countries.

Åslund (2009) and Berkmen et al. (2009) identify the exchange-rate regime as a critical factor. Åslund, in his analysis of Eastern European countries, concludes that those with fixed exchange rate did systematically worse than those with flexible exchange rate. Berkmen et al. examine the output growth record for a larger sample of developing and emerging economies, and concludes that a fixed exchange rate contributes significantly to output reduction in his sample. Filho (2010) makes the same point from a different perspective in finding that countries with “inflation targeting” monetary policies performed significantly better in response to the financial shock than those with “exchange-rate targeting” policies: “inflation targeting” requires a flexible exchange rate.

Emerging economies had accumulated large stocks of foreign-exchange reserves prior to the crisis as a form of self-insurance against international shocks. Dooley (2010) concludes, though, that these reserves were not very effective by themselves in insulating an economy. Borrowed reserves, as in the precautionary lending and flexible credit line from the IMF, were not effective in that regard either. No matter how large they seemed *ex ante*, they were generally insufficient post-crisis to replace for long the evaporated streams of commercial credit.

2. What does the IMF do?

The Articles of Agreement of the International Monetary Fund define two responsibilities for that organization. First, the IMF extends short-term credit to countries with balance-of-payments deficits,

“conditional on the country’s commitment to implement economic policies that will restore equilibrium.”³ Second, the IMF conducts periodic consultations with member governments about their exchange-rate arrangement and external balance, and provides advice as appropriate on macroeconomic and exchange-rate policy reforms.

As Kenen (1986) notes, the IMF was first envisioned as a type of international credit union: countries subject to adverse external shock would approach it for credit; there would be no distinction between creditor and borrower country, since each member would be both at different times. It has, of course, evolved into a different group activity, with a large number of recidivist borrowers and a smaller number of advanced economies that rarely or never use the credit facility.⁴ Kenen concludes that by 1986 it was operating more like a bank than a credit union, intermediating funds from creditor-members to borrower-members.

Tirole (2002) advanced a more complex view of the IMF’s role. While its form may be similar to a stand-alone bank, its unique contribution to the international financial market stems from its ability to complete an incomplete contract between private lenders and borrowers. Tirole characterizes the contract between the private lender (e.g., Deutsche Bank) and the private borrower (e.g., Latvia’s electricity corporation) as subject to dual agency.⁵ The private lender enters a contract with the private borrower, but recognizes that the ability of the borrower to repay will depend critically upon the actions of the sovereign government (e.g., the government of Latvia). IMF programs with the sovereign government “complete” the contract and encourage private lending.⁶ As Jeanne et al. (2008) put it, the IMF is more effective than uncoordinated private investors in eliciting policy adjustments from crisis countries. It has its own technology associated with lending that creates a commitment device for government adjustment. This “conditionality” is welfare-improving in the absence of moral hazard. Moral hazard (less than optimal government adjustment *ex ante* because of the understanding that the IMF will be there to assist during crises) can lead to welfare reduction.⁷ This highlights the importance of “*ex ante*” conditionality.

If it is a bank, it is a bank with a decided disadvantage until very recently in attracting customers. The IMF practice of attaching conditionality to its credit, while enshrined in the Articles of Agreement, has traditionally been a very unpopular feature of its lending.⁸ There have been periods in which IMF lending was in heavy demand, including the period after the dissolution of the Soviet Union and the

³ See Boughton (2006, p. 19).

⁴ Conway (2007) provides a detailed look at this bifurcation and the way in which the split has evolved over time.

⁵ He also discusses the importance of common agency in international financial contracts, but this is less important in the context of IMF activity.

⁶ The extensive empirical literature on the catalytic effect of IMF lending (e.g., Bird and Rowlands (2008) for a recent example) represents a test of this view.

⁷ Vaubel (1983) presents a strong statement of the negative consequences of moral hazard, and continues the logic to argue that the IMF should not lend under any circumstance. There have been numerous empirical tests of moral hazard created by IMF activity; Conway (2006) provides a survey of the literature that includes Dreher (2004) and Dreher and Vaubel (2004).

⁸ Williamson (1983) provides an early summary of the critique of IMF conditionality. Jeanne et al. (2008) is an excellent recent summary of the evolution of IMF conditionality.

period subsequent to the Asian financial crisis. However, as Figure 1 indicates, by the beginning of 2008 the use of its credit was at a recent low.

In the aftermath of the Asian Crisis of 1997 and the Russian Crisis of 1998 there was a loud and concerted objection to the IMF's implementation of its crisis lending program. Many informed observers (e.g., Sachs (1997), Feldstein (1998), IFIAC (2000), Stiglitz (2002)) attributed the slow recovery from the crisis to the IMF's behavior. The critique was targeted at both tactical and strategic choices of the IMF.

- On the tactical front, Sachs, Feldstein and Stiglitz criticized the conditionality that the IMF attached to its lending to crisis countries in Asia. While they differed in particulars, they agreed that the IMF's insistence on widespread financial-sector reform as condition for lending was inappropriate. Sachs (1997) viewed the crisis as analogous to a "run on the bank". The IMF's insistence upon market-reform conditions in this context just deepens the loss of confidence that caused the "bank run" while causing the country to undertake unnecessary and costly policy changes. Feldstein (1998) argued that the IMF recommended austerity measures inconsistent with the Asian countries' economic needs just because that is the customary policy reform. Stiglitz (2002) echoed these criticisms, adding that the IMF insistence on contractionary monetary policy during the crisis was counterproductive.
- On the strategic front, Feldstein (1998) and International Financial Institutions Advisory Commission Report (IFIAC, 2000) argued that IMF-supported programs by their nature bail out unwise private lenders and create moral hazard in international lending. IFIAC, also known as the Meltzer Commission, called for the IMF to cease lending except to emerging economies having met specific economic and financial pre-conditions.

These criticisms led to substantive reforms at the IMF in lending and in surveillance. In the early 2000s, the IMF came up with new guidelines for program (now known as *ex post*) conditionality. One of the hallmarks of the new approach was to be "country ownership" of the program, as outlined in IMF (2001) and Boughton (2006). Another was to be greater flexibility, with less stress on meeting quarterly targets before tranche disbursements can occur (IMF (2002)). The IMF also introduced the Contingent Credit Line (CCL) in 1999: a precautionary line of defense for members with sound policies but vulnerable to contagion effects from capital account crises in other countries (IMF (2004)). Under the facility, an IMF member that met the eligibility criteria (now known as *ex ante* conditionality) could draw on a large pre-specified amount of resources if hit by a financial crisis due to factors outside of the member's control. This was a direct response to the IFIAC recommendation, but in its five-year existence no country chose to complete the necessary pre-certification. The IMF established an internal Vulnerability Exercise for Emerging Market Economies (VEE) in 2001 to focus the surveillance efforts of Fund staff on weaknesses in sectoral fundamentals.

3. The IMF Role in the International Financial Crisis.

A. What was the IMF's role in causing the crisis?

There is no direct connection between the IMF and the collapse of the sub-prime housing market in the US. While the IMF has been accused in the past with creating an environment in which international lending to developing countries is excessive and in which developing-country governments

take insufficient steps to address systemic economic problems (two aspects of moral hazard; see Conway (2006)), this crisis erupted in parts of the international economy in which an IMF “guarantee” carries no weight.

To the extent that Bernanke’s (2005) “savings glut” explanation is accepted as a cause of the financial crisis, it is inappropriate to treat the IMF as an intermediary for that saving. As is evident from Figure 1, the IMF’s role in international lending was declining during the period that Bernanke identifies with the “savings glut”.

B. Did the IMF see the US financial crisis coming?

Yes, and no. It saw a US-driven crisis as a possibility, but not this one. The US has annual Article IV consultations with the US government about international financial issues, just as it does with all its members. In 2005, for example (IMF (2005)), the key advice from the IMF concerned global imbalances, and specifically means to raise US saving and reduce the US current account deficit. The IMF found itself in broad agreement with the US monetary policy of the time. By 2008, as Faruque (2008) reports, the IMF recognized that the financial crisis would cause economic slowdowns in the US and Europe – and saw that as good news in part because it reduced global imbalances. Blanchard (2008), currently chief economist of the IMF, had a similar focus on the threat of global imbalances.

The IMF’s projections of the impact of the crisis in the US and Europe are in retrospect very similar to those of government agencies. Figures 2a and 2b indicate the consensus forecasts of real economic growth in the US by the IMF and the Federal Reserve’s Federal Open Market Committee, respectively.⁹ While the IMF projections appear closer to target for 2008 and 2009, this is possibly due to different calculations of growth rates by the two agencies.¹⁰ Neither agency anticipated the magnitude of the drop in 2009 growth prior to 2009.

C. Did the IMF see the potential for transmission of the financial crisis to emerging economies earlier than others?

A definitive answer to this question requires more systematic research than I’ve completed to date. However, we can get a provisional response to this question from examining a specific case study. In this section I examine the case of Latvia. My null hypothesis is that the IMF’s forecast of the risk of transmission of the crisis to Latvia was not appreciably earlier than that drawn by rating agencies and private country risk evaluators.

Latvia experienced a number of years of rapid economic growth during the mid 2000s. This growth was in large part financed through a credit boom. The Latvian financial sector, dominated by local subsidiaries of Scandinavian banks, intermediated the credit through its own borrowing from European commercial banks. Latvia participated in IMF-supported programs beginning in 1992, but by

⁹ Projections are reported for the year of the report as well as the subsequent years. For later forecasts, I insert actual data (from the US Economic Report of the President) for the earlier years. For example, the April 2010 forecasts include historical data for 2007-2009. The Federal Reserve forecast for Figure 2b is created by taking the midpoint of the reported “Central Tendencies” range of forecasts by Federal Reserve presidents and board members.

¹⁰ Federal Reserve forecast growth rates are fourth quarter over fourth quarter, while IMF are year-over-year. The historical data are also year-over-year.

2004 had no outstanding loans from the IMF.¹¹ The Latvian government, just as for other member governments, conducted annual Article IV consultations with the IMF about macroeconomic performance. In the appendix I summarize excerpts of published IMF documents prepared subsequent to these IMF consultations between 2004 and 2008. All except the last (an official request for a new Stand-by Arrangement) were written subsequent to Article IV consultations. As is evident in the text of these, IMF staff expressed increasingly strong concerns about Latvia's credit boom, excessive growth and financial-sector vulnerability. By April 2007 the mission is counseling an urgent and immediate contractionary demand-management policy. In December 2008 the IMF and the Republic of Latvia announced the current Stand-by Arrangement.

IMF advice in the context of Article IV consultations can be taken or left by the host government. It does not have the force of conditionality if the host country is not negotiating an IMF-supported program. The advice given here does anticipate a crisis, but not necessarily due to the world financial crisis; it seems more a prediction of the adverse consequence of a Latvian speculative bubble than of the transmission of the shock from the international crisis. This conclusion is reinforced by examination of IMF forecasts prepared bi-annually for the publication *World Economic Outlook* (WEO). Every six months IMF staff prepared a forecast for Latvia's real economic growth, and it is reasonable to believe that staff concerns about transmission of the international financial crisis will be reflected in these forecasts. In Figure 3a I summarize the forecasts provided in each successive edition of the publication between April 2007 and April 2010.¹² As is evident, the forecasts in April 2007 and October 2007 predict only a small downturn in economic growth in 2008. In April 2008 the forecast is for lower but still positive growth in 2009-2011, while in October 2008 the forecast is for small reductions in real GDP during 2008 and 2009. It is only in April 2009 that the large negative growth rate, similar to what was actually observed, is predicted for 2009. The IMF forecasts illustrated in Figure 3b for Latvia's current account also indicate a slowly evolving realization of the impact of the crisis. In 2007 the forecasts suggest that Latvia will be able to continue to finance its current account deficit of about 25 percent of GDP. In 2008 the forecasts predict a "soft landing" for Latvia – a slow adjustment in the current account deficit to smaller and smaller shares of GDP. It's only in October 2009 that the forecasts truly reflect the magnitude of the "sudden stop" that Latvia experiences. If the IMF foresaw the downturn experienced by Latvia, it is not evident in these WEO forecasts.

The ratings agencies (Fitch, Standard and Poor, and Moody are the large three) are also in the business of assessing risk. Their definition of risk is more focused than that of the IMF: the risk in question for the rating agencies is the risk that the issuer of a financial instrument (e.g., a bond or collateralized debt obligation) will be unable to service completely the obligations of that instrument. The agencies have distilled their rating into a letter designation (e.g., AAA) and an outlook designation (positive, stable, negative). They have faced criticism since the beginning of the financial crisis for their

¹¹ Latvia first entered a one-year Stand-by Arrangement (SBA) with the IMF in 1992, and negotiated a second SBA, this time for 18 months, in 1993. It drew down a total of 110 million SDRs from those two arrangements. Latvia also negotiated "precautionary" SBAs in 1995, 1996, 1997, 1999 and 2001, but did not make any drawings from these. Latvia made its final repayment on the 1992/1993 SBAs in 2004.

¹² For the more recent forecasts, historical data are inserted for earlier years. For example, the April 2010 forecast has historical values for 2005 through 2008.

inability, evident *ex post*, to value correctly the risk associated with various financial instruments. Collateralized debt obligations provided the first example of this failure: instruments with AAA ratings turned out *ex post* to have sizeable losses in returns on average.¹³ More recently, the rating agencies have been accused (e.g., de Grauwe (2010)) of overresponse in downgrading the ratings of sovereign debt issues in Europe. According to this logic, the unanticipated failure of Dubai World to honor its bonds on time led the ratings agencies to become overly conservative in rating other sovereign bonds, including those of Greece.

There is one financial instrument for which the rating agencies' evaluation should be comparable to the IMF forecast, and that is in the rating of sovereign bonds. In Figure 4 I illustrate the ratings given by Standard and Poor's and Moody's for medium-term foreign-currency-denominated bonds issued by the government of Latvia.¹⁴ The agencies began relatively early to reduce their rating for Latvia's sovereign bonds. The Standard and Poor's rating was reduced in two steps in the first quarter of 2007 from A- (stable) to BBB+ (negative). Moody's rating remained higher (at an equivalent of an A) but was reduced from positive to stable outlook in September 2007. Both ratings remained above the investment-grade cutoff during this period. The large downgrading of Latvian sovereign debt began in August 2008, subsequent to a run on Parex Bank, Latvia's second largest (and largest domestic-owned) bank, and bottomed out in the last quarter of 2009. The ratings agencies, thus, showed a modest increase in their assessment of risk in early 2007, but the largest downgrades only occurred after the run on Parex Bank – when everyone recognized that a crisis was in full swing.

A final risk indicator is available from the International Country Risk Guide, a private assessment of country risk prepared by the PRS Corporation. The ICRG compiles indicators of economic risk and financial risk, each on a scale from 0 to 50.¹⁵ I report the monthly indicators of that risk for Latvia from 2006 to the present in Figure 5. The ICRG indicators of economic risk trend down slowly until November 2008, then dive in December 2008 and recover somewhat in January 2009, with slow recovery thereafter. The financial risk index is quite different, marking a precipitous decline in February 2007 that is partially reversed in November 2007; thereafter, the index stays roughly the same through the bank run and IMF program introduction. These are not forecasts, since they are aggregated from current data.

¹³ I use the nomenclature of Standard and Poor's throughout. AAA is the highest rating for Standard and Poor's and Fitch and corresponds to Aaa rating for Moody's. The highest rating is designed to indicate the greatest likelihood that the issuer is willing and able to mobilize resources to honor its obligations in timely fashion.

¹⁴ To create a comparison of the two ratings, I based both AAA and Aaa at a value of 22. I then subtracted 1 point for each step down (e.g., AA+ is 21, AA is 20, AA- is 19 in the Standard and Poor's ratings.) The ratings agencies also provide outlooks paired with the ratings (for Standard and Poor, the three outlooks are positive, stable and negative). Stable outlook is viewed as the default for each rating; a positive outlook is treated as a 0.5 upward shift over stable and a negative outlook as a 0.5 downward shift.

¹⁵ The economic risk index is the sum of ratings for five variables: per capita GDP, real GDP growth, annual inflation rate, budget surplus as percent of GDP and current account as percent of GDP. The financial risk index is also the sum of ratings for five variables: foreign debt as a percent of GDP, foreign debt service as a percent of export value, current account surplus as a percent of export value, net international liquidity as a percent of import value, and nominal exchange rate volatility. In each index, each variable is rated on a scale from 0 to 10 except for current account/GDP and current account/exports receiving 15 and per capital GDP and net international liquidity receiving 5. A score less than 25 is considered by ICRG to be very high risk, 25 to 30 is high risk, 30 to 35 is moderate risk, 35 to 40 is low risk, and 40 to 50 is very low risk.

Exploring more deeply, this large decline in the financial index is due to large reported swings in the current account ratio, the foreign debt ratio and the debt service ratio – but it isn't clear from historical data what justifies these swings.¹⁶ This indicator provides the earliest indicator of financial risk, although it does not translate into economic risk until after the run on the Parex Bank.

A possible objection to the previous comparison is that the WEO is an exercise undertaken by mathematical modelers within the IMF. If one wishes to know the “best forecast” for a country within the IMF, one should use the forecasts by staff working directly on those countries. This is possible through use of the Monitoring of New Arrangements (MONA) database of the IMF. In earlier work (Atoyan et al., 2004) I and coauthors examined the accuracy of IMF forecasts using this database. In Figure 6 I provide a comparison of two forecasts from WEO and two from MONA for Latvia's real economic growth. The dates of the forecasts do not coincide, but it is evident that the WEO and MONA databases of comparable dates provide very similar forecasts of real economic growth. My earlier conclusions do not appear to be overturned by switching to the MONA forecasts.

Latvia has not been a continuous participant in IMF-supported programs throughout this period, and thus we cannot use IMF program forecasts for Latvia to evaluate its forecasting accuracy over a long period. To do so, we can examine the IMF's program forecast record for Turkey. Turkey negotiated a SBA in 2004, and in the course of that arrangement went through six reviews of macroeconomic performance with the IMF. On each occasion, the IMF provided its forecast of future macroeconomic performance and recorded it in the MONA database. In Figure 7 I illustrate the IMF's forecast of real Turkish economic growth in May of 2005, 2006, 2007 and 2008. I also report the historical growth rate through 2009. It is evident that even as late as May 2008 the IMF staff working with Turkey did not anticipate the degree of economic downturn that Turkey would experience in 2008 and 2009.

D. IMF lending activity since the crisis began: International lender of last resort?

Bagehot (1873) provides the definition of “lender of last resort”: one with responsibility for accommodating demands for high-powered money in times of crisis at penalty interest rates to “solvent but illiquid” banks. In the international context, I follow Tirole (2002) in describing it as an institution that provides short-term liquidity to a country when commercial lenders no longer want to supply funds. Tirole doesn't see the need for the IMF to play this role; as he says (Tirole, 2002, pp. 111), “the case for a LOLR is weaker than in the case of domestic liquidity because there is plenty of international liquidity to go around... The limit is not [their] overall availability, but [their] availability to a country with limited international collateral.”

¹⁶ From January to February 2007, the underlying data used in constructing the financial index current account/exports ratio went from -0.15 to -0.30; the debt service/exports ratio went from 0.05 to 0.76, and the foreign debt/GDP ratio went from 0.25 to 1.10. The historical annual figures as reported by the IMF are:

	2005	2006	2007	2008
Foreign Debt/GDP	1.00	1.14	1.34	1.29
Current account/Exports	0.37	0.73	0.79	0.47
Debt service/Exports	1.92	1.76	1.70	2.26

I can't explain the differences, and the ICRG firm was unwilling to discuss the provenance of their figures. It is evident here, though, that there is no extreme jump in the annual indices from 2006 to 2007 that would justify the jump in the ICRG financial statistics.

Since the beginning of the current financial crisis, the IMF has moved swiftly to expand its lending. The IMF created a successor to the CCL. The Flexible Credit Line (FCL) was established in March 2009, requiring *ex ante* conditionality and providing unrestricted access to large amounts of credit (up to 10 times quota in some cases). Mexico, Poland and Colombia have already been approved for these lines of credit, with unrestricted access to \$82 billion in total. The Group of 20 (G-20) meeting of 2 April 2009 voted to triple the IMF lending capacity in the current crisis, from roughly \$250 billion to \$750 billion, through an expansion of the IMF's existing Arrangements to Borrow.¹⁷ The G-20 also supported the issuance of a new allocation of special drawing rights valued at \$250 billion to increase liquidity in the world economy.

As Figure 1 illustrates, the IMF's lending activity has expanded substantially from its low at the beginning of 2008. Table 2 lists the total value of lending programs in place as of 30 April 2010. Note that the programs in the left-hand column (Stand-by, Extended and Flexible Credit Line facilities) were all arranged after the beginning of the financial crisis.

The programs in the right-hand column are for the most part lending to least-developed countries through the Poverty Reduction and Growth Facility, and represent only about 3 percent of total IMF commitments at this time.¹⁸ Presbitero and Zazzaro (2010) document this underservice of least-developed countries; they also conclude that the IMF lending that has been done during this crisis is skewed towards countries that share political position with the largest funders of the IMF.

I'd conclude based upon this record that Tirole was correct, but that he did not anticipate the speed with which the definition of "international collateral" could change with the financial crisis. The crisis centered in the financial sector forced financial intermediaries to retrench and to restrict their lending. This has triggered "sudden stops" for many emerging economies – countries with sufficient international collateral to borrow pre-crisis found themselves with no takers when they attempted to float new obligations to roll over their earlier debts.¹⁹ Latvia is one example, but only one of many. For these countries, the IMF credit is lending of last resort designed to lessen the impact of the sudden stop on the emerging economy.

E. Completing the contract: IMF Participation in the EU Financial Stability Plan.

The recent experience of Greece in the international bond markets has led to a number of initiatives to support Greece, the Euro and financial stability. In May 2010 Greece reached agreement with the International Monetary Fund (IMF), the European Commission, and the European Central Bank (ECB) on a focused program to stabilize its economy, become more competitive, and restore market confidence with the support of a €110 billion (about USD \$145 billion) financing package. Simultaneously, the European Community created the European Stabilization Mechanism "to present

¹⁷ The information in this paragraph not otherwise given citation is drawn from Moghadam (2009) and <http://www.imf.org/external/np/exr/faq/sdrfaqs.htm>.

¹⁸ There is a difference between the total "credit outstanding" in Figure 1 and the total value of IMF lending programs reported in Table 2. The table reports the initial contractual value of the loan or credit line, while the figure reports the amount of the loan or credit line outstanding. Some loans are partially repaid; other loans or credit lines are not yet disbursed.

¹⁹ Calvo (1998) is a good explanation of this phenomenon from its original expositor.

financial stability in Europe” by providing guarantees of up to €500 billion (about USD \$660 billion) sovereign borrowing from international capital markets.²⁰ The ECB for its part amended its operating procedures to allow purchases of public and private debt obligations from member countries. The ECB quickly put the plan into action, buying government bonds of Greece, Ireland, Portugal, Spain and Italy.²¹

This episode has many fascinating strands. There is a “run on the bank” feature, with the ECB playing the role of lender of last resort to Greek commercial banks. There is a heavily indebted sovereign government forced to pay destabilizingly high interest rates to roll over its debts, with the European Community willing to provide guarantees to bring those interest rates down to manageable levels. And there’s the IMF’s participation: but why? It would seem that the EU and ECB institutions span the set of mechanisms necessary to deal with this crisis.

I have no definitive word on this, but here are some possible rationales:

- **Bridge financing.** EU action through the European Stabilization Mechanism will ultimately be massive, but disbursements cannot occur immediately. The IMF can provide short-term debt finance until that mechanism is operational.
- **IMF expertise in designing and supervising policy conditionality.** There is agreement within the EU that reforms will be necessary in Greece. EU governments do not want to be seen dictating policy to a fellow member, and there may in fact be no consensus among members for the specific conditions to be placed on Greece. The EU thus delegates its condition-design and monitoring role to the IMF. This is a specific example of the Tirole (2002) and Jeanne et al. (2008) view of IMF comparative advantage. In this case the IMF can also serve to defuse common-agency problems when existing EU members favor different macroeconomic reforms for Greece.
- **Burden-sharing.** Including IMF financing in this program will lessen the exposure of European countries to the rescue efforts. The increased resources of the IMF have come from many countries, only a few of which are within the EU. By including the IMF in the European initiative, the US, Japan, China and other IMF member countries will provide part of the financing necessary.

F. Positive effects from previous conditionality.

I do not have systematic results to report here, but only a provocative conjecture. As the world talks about a multi-speed recovery from the financial crisis, the countries with above-average growth rates include those from Asia for which the IMF insisted upon financial-sector conditionality in the Asian crisis. This conditionality was considered excessive at the time (e.g., Sachs (1997), Feldstein (1998)), but according to Dooley (2010) the increased supervision that resulted paid dividends during the current international crisis. Diamond and Rajan (2009) provide the theoretical underpinnings for the argument that financial-sector reform is necessary during the crisis to improve subsequent resource allocations.

²⁰ <http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/10/173>.

²¹ Blackstone, B.: “Amid the Storm, Questions about Bank’s Role”, Wall Street Journal, 11 May 2010.

4. Conclusions and next steps.

The IMF was invented in the beginning to sustain a fixed-exchange-rate regime. Its activities were designed in essence to keep small crises from becoming big ones, to keep local imbalances from becoming global crises. Times have changed, and the IMF is now best known as a crisis manager, with a mandate to keep big crises from getting bigger.

The international financial crisis has reminded the world community of the IMF's *raison d'être* and has given further evidence of the IMF's comparative advantage. Early warning of impending crisis is not evidently one of these advantages: based upon the evidence provided here, the IMF was no quicker than any other agency in identifying the global risks, and seemed fixated on warning of a "global imbalances" crisis when an entirely different crisis was in store. It has distinguished itself in two other areas. First, its role as lender of last resort has been crucial in providing some cushion to emerging economies buffeted by the global financial crisis and economic downturn. Second, its role in designing and supervising macroeconomic reforms has been reaffirmed in the current efforts to establish European financial stability.

I plan a few next steps that in the future will provide evidence to strengthen the analysis of this paper.

- The analysis of ability to forecast crisis in this paper is largely driven by consideration of one country's experience. While I believe Latvia provides a good example of the transmission of the financial crisis, it will be important to expand the analysis to a larger set of countries.
- Ruben Atoyán and I are returning to our "projections vs. reality" analysis of IMF forecasts (Atoyán et al. (2004)) using the MONA database. With data through 2009, we should be able to provide more precise decomposition of forecast error.
- I'll be listening carefully during our sessions to learn more of the Financial Stability Plan. There are no doubt many nuances of this that I've missed in my trans-Atlantic observations.

Bibliography

- Akerlof, G. and R. Shiller: Animal Spirits: How Human Psychology Drives the Economy, and Why it Matters for Global Capitalism. Princeton, NJ: Princeton University Press, 2009.
- Aizenman, J., M. Chinn, and H. Ito: “The Financial Crisis, Rethinking of the Global Financial Architecture, and the Trilemma”, ADB Institute Working Paper 213, 2010.
- Aslund, A.: “The East European Financial Crisis”, CASE Study 395, 2009.
- Atoyan, R., P. Conway, M. Selowsky and T. Tsikata: “Macroeconomic Adjustment in IMF-Supported Programs: Projections and Reality” Independent Evaluation Office BP/04/02, 2004.
- Bagehot, W.: Lombard Street: A Description of the Money Market. London, UK: H.S. King, 1873.
- Berkmen, P., G. Gelos, R. Rennhack, and J. Walsh: “The Global Financial Crisis: Explaining Cross-Country Differences in the Output Impact”, IMF Working Paper 09/280, 2009.
- Bernanke, B.: “The Global Savings Glut and the US Current Account Deficit”, processed, 2005.
- Bibow, J.: “Global Imbalances, the US Dollar, and How the Crisis at the Core of Global Finance Spread to ‘Self-insuring’ Emerging Market Economies”, Levy Institute Working Paper 591, 2010.
- Bird, G. and D. Rowlands: “Catalyzing Private Capital Flows and IMF Programs: Some Remaining Questions”, *Journal of Economic Policy Reform* 11/1, 2008, pp 37-43.
- Blanchard, O.: “The Crisis: Basic Mechanisms and Appropriate Policies”, MIT Working Paper 09-01, 2008.
- Blanchard, O. and G. Milesi-Ferretti: “Global Imbalances: In Midstream?”, IMF Staff Position Note 09/29, 2009.
- Boughton, J.: “Who’s in Charge? Ownership and Conditionality in IMF-supported programs”, chapter 1 in G. Ranis, J. Vreeland and S. Kosack: Globalization and the Nation State. New York, NY: Routledge, 2006.
- Brunnermeier, M.: “Deciphering the Liquidity and Credit Crunch 2007-2008”, *Journal of Economic Perspectives* 23/1, 2009, pp. 77-100.
- Caballero, R. and P. Kurlat: “The ‘Surprising’ Origin and Nature of Financial Crises: A Macroeconomic Policy Proposal”, MIT Working Paper 09/24, 2009.
- Calvo, G.: “Capital Flows and Capital-Market Crises: The Simple Economics of Sudden Stops”, *Journal of Applied Economics*, 1998, pp. 35-54.
- Canales-Kriljenko, B. Coulibaly and H. Kamil: “A Tale of Two Regions”, *Finance and Development*, March 2010.

- Cetorelli, N. and L. Goldberg: "Global Banks and International Shock Transmission: Evidence from the Crisis", NBER Working Paper 15974, 2010.
- Chor, D. and K. Manova: "Off the Cliff and Back? Credit Conditions and International Trade during the Global Financial Crisis", processed, 2009.
- Claessens, S., G. Dell'Ariccia, D. Igan and L. Laeven: "Lessons and Policy Implications from the Global Financial Crisis", IMF Working Paper 10/44, 2010.
- Conway, P.: "IMF Essays from a Time of Crisis", *Journal of Economic Literature* 40/1, 2006, pp. 114-141.
- Conway, P.: "The Revolving Door: Duration and Recidivism in IMF Programs", *Review of Economics and Statistics* 89/2, 2007, pp. 205-220.
- Diamond, D. and R. Rajan: "Fear of Fire Sales and the Credit Freeze", NBER Working Paper 14925, April 2009.
- Dooley, M.: "Central Bank Responses during Financial Crises", in *BIS Papers* 51, 2010.
- Dooley, M. and M. Hutchison: "Transmission of the US Subprime Crisis to Emerging Markets: Evidence on the Decoupling-Recoupling Hypothesis", *Journal of International Money and Finance* 28, 2009, pp. 1331-1349.
- Dreher, A.: "Does the IMF Cause Moral Hazard? A Critical Review of the Evidence", processed, March 2004.
- Dreher, A. and R. Vaubel: "Do IMF and IBRD Cause Moral Hazard and Political Business Cycles? Evidence from Panel Data", *Open Economies Review* 15, 2004, pp. 5-22.
- Faruqee, H.: "IMF Sees Global Imbalances Narrowing, But More to Be Done", *IMF Survey*, 19 February 2008.
- Martin Feldstein: "Refocusing the IMF", *Foreign Affairs*, March/April 1998.
- Filho, I. de Carvalho: "Inflation Targeting and the Crisis: an Empirical Assessment", IMF Working Paper 10/45, 2010.
- de Grauwe, P.: "Crisis in the Eurozone and How to Deal with it", *CEPS Policy Brief* 204, 2010.
- International Financial Institution Advisory Commission (IFIAC): Report. Washington, DC: Government Printing Office, 2000.
- International Monetary Fund: "IMF Reviews Strengthening Country Ownership of Fund-Supported Programs", IMF Public Information Notice 1/125, 14 December 2001.
- International Monetary Fund: "Guidelines on Conditionality", Legal and Policy Development and Review Departments, 25 September 2002.

International Monetary Fund: “The IMF’s Contingent Credit Lines”, IMF Factsheet, March 2004.

International Monetary Fund: “Staff Report for the 2005 Article IV Consultation”, 30 June 2005.

Jeanne, O., J. Ostry and J. Zettelmeyer: “A Theory of International Crisis Lending and IMF Conditionality”, IMF Working Paper 08/236, 2008.

Kamin, S. and L. DeMarco: “How did a Domestic Housing Slump Turn into a Global Financial Crisis?”, IFD Discussion Paper 994, Board of Governors of the Federal Reserve System, 2010.

Kenen, P.: Financing, Adjustment and the International Monetary Fund. Washington, DC: Brookings Institution, 1986.

Kindleberger, C.: Manias, Panics and Crashes, 4th edition. New York, NY: John Wiley, 2000.

Laibson, D. and J. Mollerstrom: “Capital Flows, Consumption Booms and Asset Bubbles: A Behavioral Alternative to the Savings Glut Hypothesis”, NBER Working Paper 15759, 2010.

Lücke, M.: “IMF Reform in the Aftermath of the Global Financial Crisis: Let the IMF Speak Truth to Power”, Kiel Policy Brief 8, 2009.

Moghadam, R.: “Review of Recent Crisis Programs”, IMF Report, 2009.

Overbye, D.: “Mathematical Model and the Mortgage Mess”, New York Times, 9 March 2009.

Panetta, F. and others: “An Assessment of Financial-Sector Rescue Programs”, BIS Papers 48, 2009.

Presbitero, A. and A. Zazzaro: “The Global Crisis in Low- and Middle-Income Countries: How the IMF Responded”, MOFIR Working Paper 35, 2010.

Raddatz, C.: “When the Rivers Run Dry: Liquidity and the Use of Wholesale Funds in the Transmission of the US Subprime Crisis”, World Bank Policy Research Working Paper 5203, 2010.

Sachs, J.: “The Wrong Medicine for Asia”, op-ed piece, New York Times, 3 November 1997.

Shefrin, H.: “How Psychological Pitfalls Generated the Global Financial Crisis”, in L. Siegel: Voices of Wisdom: Understanding the Global Financial Crisis. Charlottesville, VA: CFA Institute, 2009.

Stiglitz, J.: Globalization and its Discontents. New York, NY: W.W. Norton, 2002.

Takaji, S.: “Applying the Lessons of Asia: The IMF’s Crisis Management Strategy in 2008”, ADBI Working Paper 206, 2010.

Tirole, J.: Financial Crises, Liquidity and the International Monetary System. Princeton, NJ: Princeton University Press, 2002.

Vaubel, R.: “The Moral Hazard of IMF Lending”, The World Economy, 1983, pp. 291-304.

Vaubel, R.: “Lessons from the Financial Crisis: The International Dimension”, IEA Economic Affairs, 2009.

te Velde, W. and others: “The Global Financial Crisis and Developing Countries: Phase 2 synthesis”, Overseas Development Institute Working Paper 316, 2010.

Von Peter, G. and P. McGuire: “The US Dollar Shortage in Global Banking and the International Policy Response”, BIS Working Paper 291, 2009.

Weisman, S.: “IMF Faces a Question of Identity”, New York Times, 28 September 2007.

Williamson, J., ed.: IMF Conditionality. Washington, DC: Institute for International Economics, 1983.

Wyplosz, C.: “The Eurozone in the Current Crisis”, ADB Institute Working Paper 207, 2010.

Table 1: Growth Rates in World and Regional Output

	2006	2007	2008	2009	2010	2011
World	5.1	5.2	3	-0.6	4.2	4.3
Advanced Economies	3	2.8	0.5	-3.2	2.3	2.4
United States	2.7	2.1	0.4	-2.4	3.1	2.6
Euro Area	3	2.8	0.6	-4.1	1	1.5
Japan	2	2.4	-1.2	-5.2	1.9	2
Others	3.9	3.9	1.2	-2.3	3	3.4
Emerging and Developing Economies	7.9	8.3	6.1	2.4	6.3	6.5
Central and Eastern Europe	6.5	5.5	3	-3.7	2.8	3.4
CIS	8.5	8.6	5.5	-6.6	4	3.6
Developing Asia	9.8	10.6	7.9	6.6	8.7	8.7
MENA	5.7	5.6	5.1	2.4	4.5	4.8
Sub-Saharan Africa	6.5	6.9	5.5	2.1	4.7	5.9
Western Hemisphere	5.6	5.8	4.3	-1.8	4	4
Memorandum						
Value of World Output (in billions of US Dollars) at market exchange rates	49,155	55,392	61,221	57,937	61,781	65,003
Volume of Exports of Goods and Services						
Advanced Economies	8.6	6.3	1.9	-11.7	6.6	5
Emerging and Developing Economies	10.4	9.7	4	-8.2	8.3	8.4

Source: World Economic Outlook, April 2010, International Monetary Fund.

The results for 2010 and 2011 are projections.

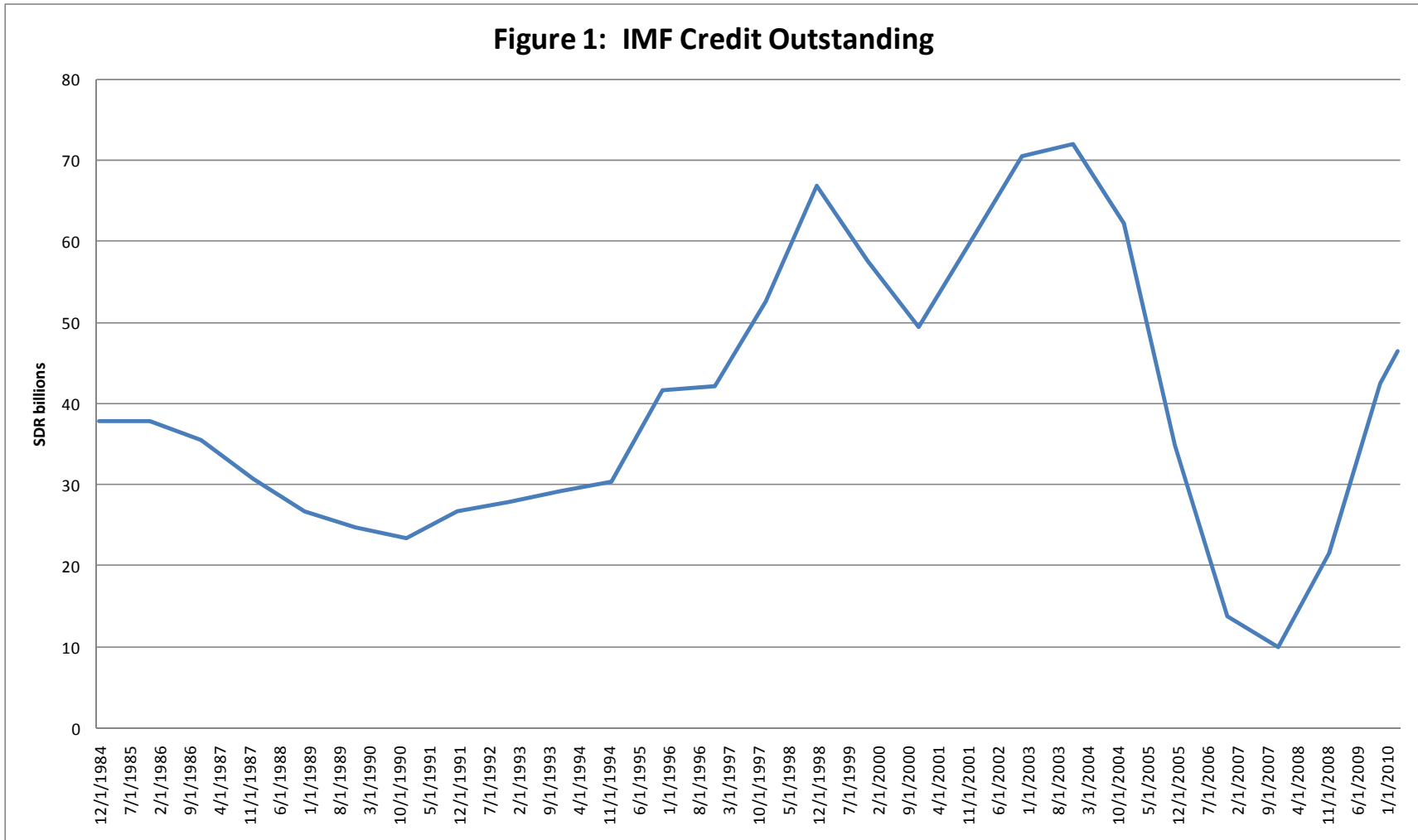
Table 2: IMF Lending Arrangements
(in thousands of SDRS, on 30 April 2010)

Stand-By and Extended Arrangements (SBA, EFF)				Poverty Reduction and Growth Trust Extended Credit Facility (ECF) 1/			
Member	Date of Arrangement	Expiration	Total Amount Agreed	Member	Date of Arrangement	Expiration	Total Amount Agreed
Angola	23-Nov-09	22-Feb-12	858,900	Afghanistan, Islamic Republic of	26-Jun-06	25-Jun-10	81,000
Armenia, Republic of	6-Mar-09	5-Jul-11	533,600	Burundi	7-Jul-08	6-Jul-11	46,200
Bosnia and Herzegovina	8-Jul-09	30-Jun-12	1,014,600	Central African Republic	22-Dec-06	30-Jun-10	69,620
Costa Rica	11-Apr-09	10-Jul-10	492,300	Comoros	21-Sep-09	20-Sep-12	13,573
Dominican Republic	9-Nov-09	8-Mar-12	1,094,500	Congo, Democratic Republic of	11-Dec-09	10-Dec-12	346,450
El Salvador	17-Mar-10	16-Mar-13	513,900	Congo, Republic of	8-Dec-08	7-Dec-11	8,460
Gabon	7-May-07	6-May-10	77,150	Cote d'Ivoire	27-Mar-09	26-Mar-12	373,980
Georgia	15-Sep-08	14-Jun-11	747,100	Djibouti	17-Sep-08	16-Sep-11	12,720
Guatemala	22-Apr-09	21-Oct-10	630,600	Gambia, The	21-Feb-07	20-Feb-11	24,880
Hungary	6-Nov-08	5-Oct-10	10,537,500	Ghana	15-Jul-09	14-Jul-12	387,450
Iceland	19-Nov-08	31-Aug-11	1,400,000	Grenada	18-Apr-10	17-Apr-13	8,775
Iraq	24-Feb-10	23-Feb-12	2,376,800	Guinea	21-Dec-07	20-Dec-10	69,615
Jamaica	4-Feb-10	3-May-12	820,500	Liberia	14-Mar-08	13-Mar-11	239,020
Latvia, Republic of	23-Dec-08	22-Dec-11	1,521,626	Malawi	19-Feb-10	18-Feb-13	52,050
Maldives	4-Dec-09	3-Dec-12	49,200	Mali	28-May-08	27-May-11	27,990
Moldova, Republic of	29-Jan-10	28-Jan-13	184,800	Mauritania	15-Mar-10	14-Mar-13	77,280
Mongolia	1-Apr-09	1-Oct-10	153,300	Moldova, Republic of	29-Jan-10	28-Jan-13	184,800
Pakistan	24-Nov-08	30-Dec-10	7,235,900	Nicaragua	5-Oct-07	4-Oct-10	78,000
Romania	4-May-09	3-May-11	11,443,000	Niger	2-Jun-08	1-Jun-11	23,030
Serbia, Republic of	16-Jan-09	15-Apr-11	2,619,120	Sao Tome & Principe	2-Mar-09	1-Mar-12	2,590
Seychelles	23-Dec-09	22-Dec-12	19,800	Sierra Leone	10-May-06	9-May-10	51,880
Sri Lanka	24-Jul-09	23-Mar-11	1,653,600	Tajikistan, Republic of	21-Apr-09	20-Apr-12	78,300
Ukraine	5-Nov-08	4-Nov-10	11,000,000	Togo	21-Apr-08	20-Apr-11	84,410
				Zambia	4-Jun-08	3-Jun-11	220,095
Total			56,773,196	Total			2,562,168
Flexible Credit Line (FCL)				Exogenous Shock Facility (ESF)			
Member	Date of Arrangement	Expiration	Total Amount Agreed	Member	Date of Arrangement	Expiration	Total Amount Agreed
Colombia	11-May-09	10-May-10	6,966,000	Ethiopia	26-Aug-09	25-Oct-10	153,755
Mexico	25-Mar-10	24-Mar-11	31,528,000	Kyrgyz Republic	10-Dec-08	9-Jun-10	66,600
Poland, Republic of	6-May-09	5-May-10	13,690,000	Maldives	4-Dec-09	3-Dec-11	8,200
Total			52,184,000	Mozambique	30-Jun-09	29-Jun-10	113,600
				Senegal	19-Dec-08	18-Jun-10	121,350
				Tanzania	29-May-09	28-May-10	218,790
				Total			682,295

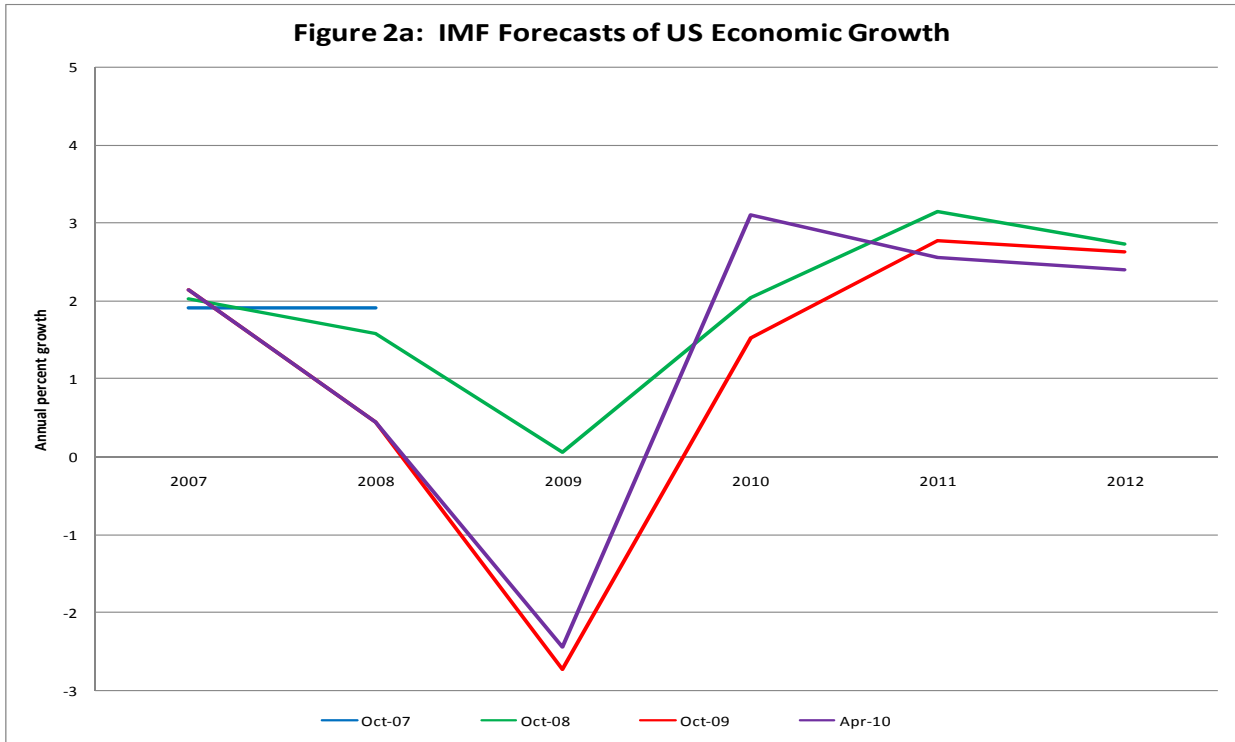
USD \$1 = 0.684 SDRs

1 SDR = USD \$1.462

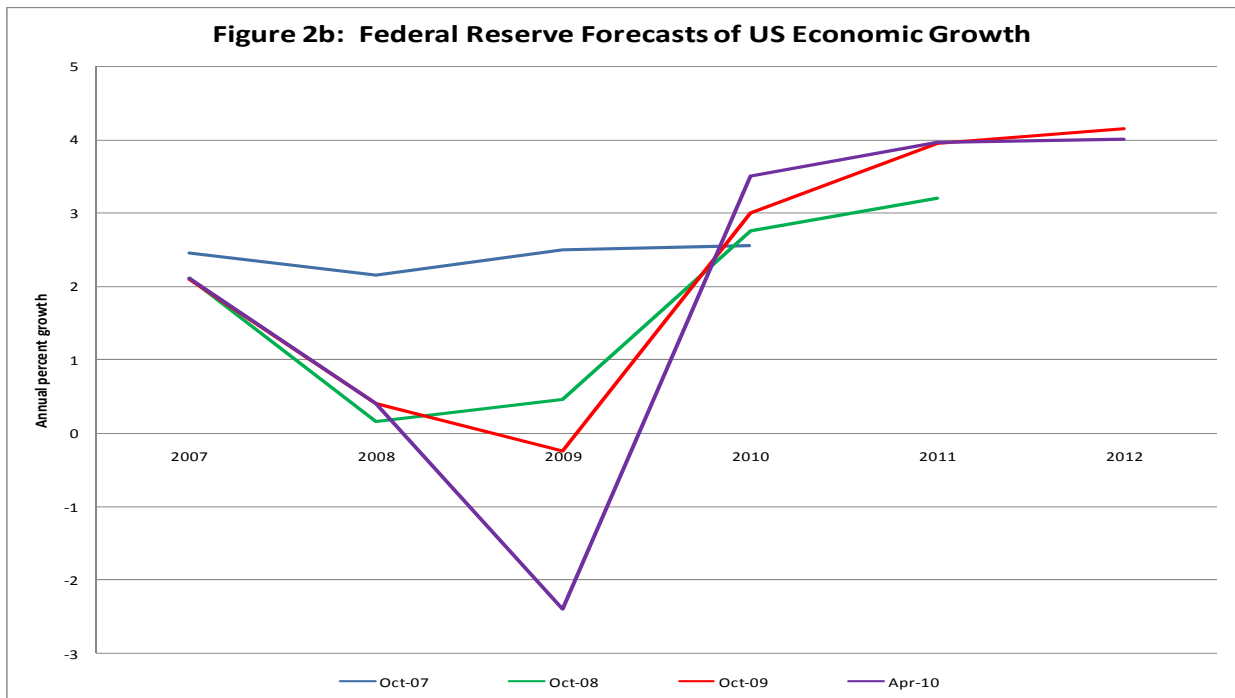
Source: International Monetary Fund



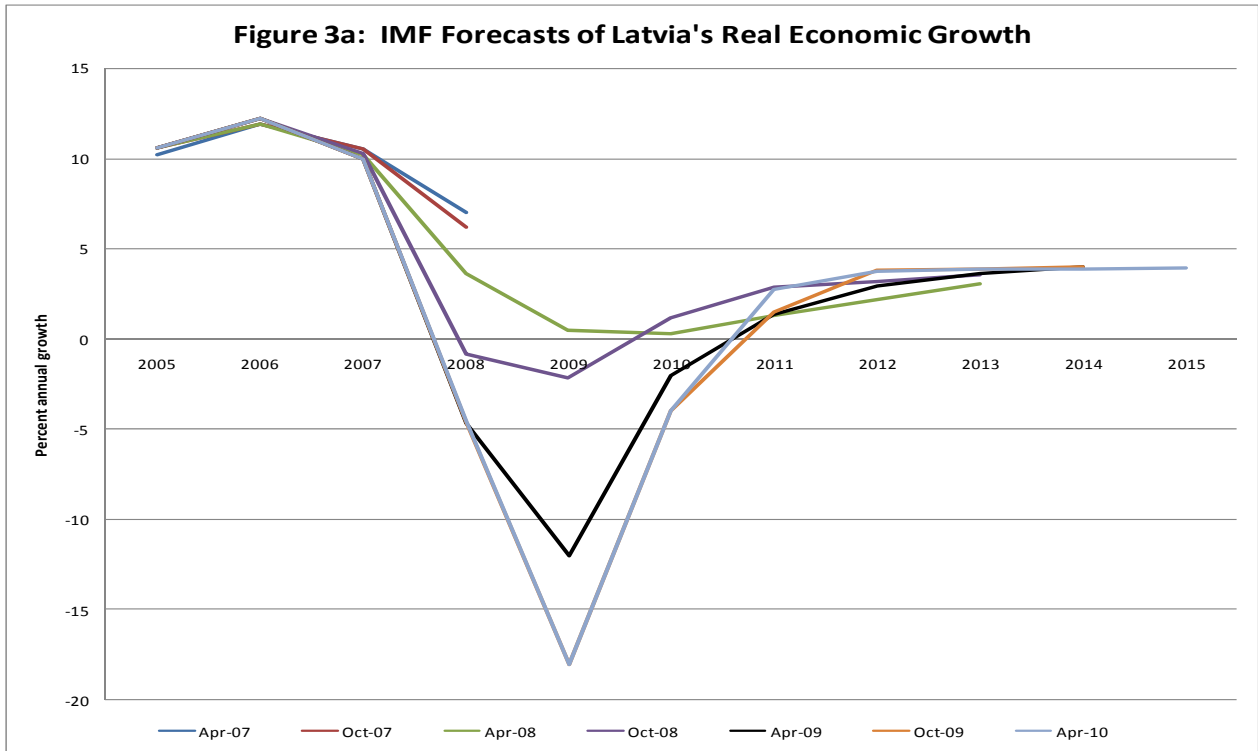
Source: International Monetary Fund. Includes both GRA and PRGT purchases.



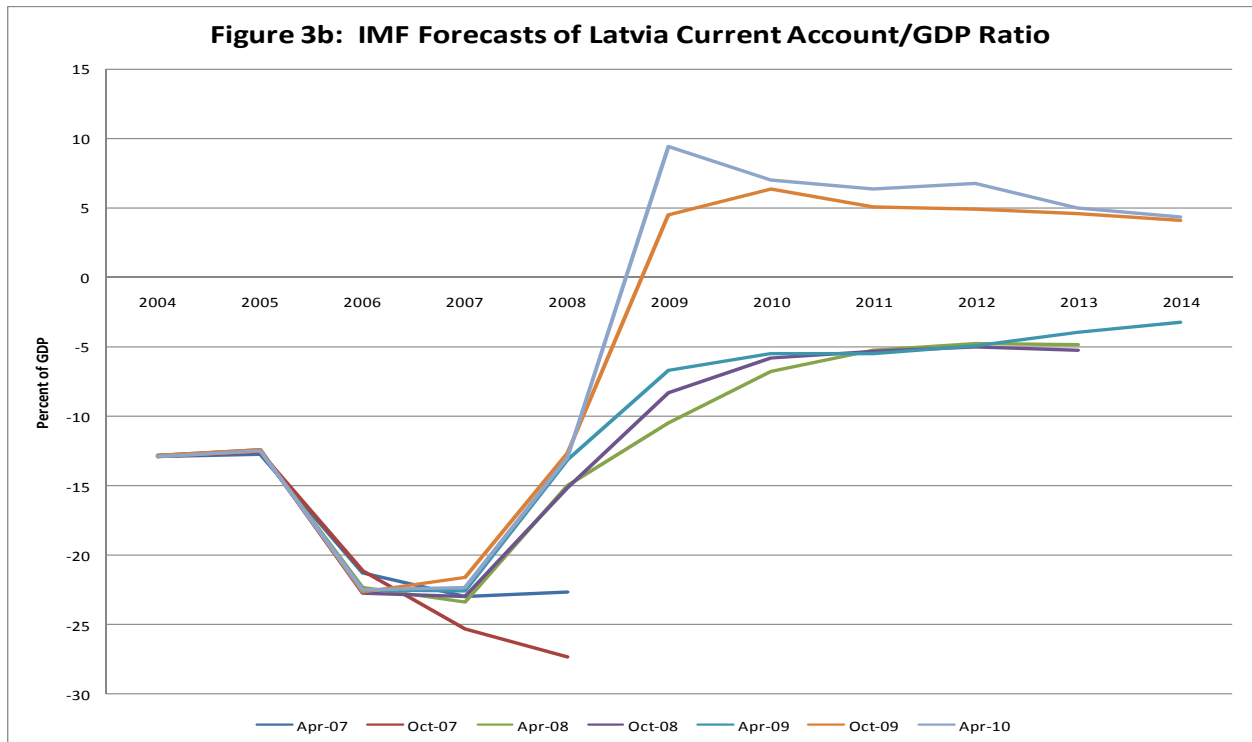
Source: World Economic Outlook, editions indicated.



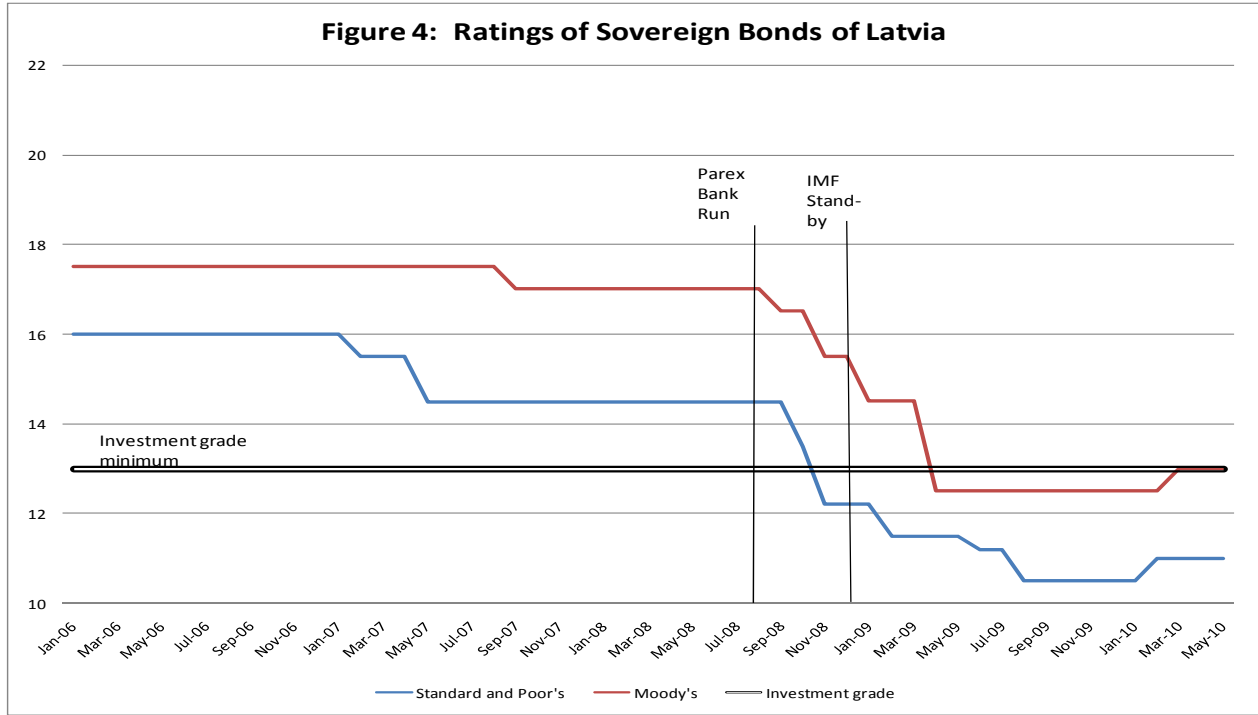
Source: Federal Open Market Committee Minutes, meetings indicated.



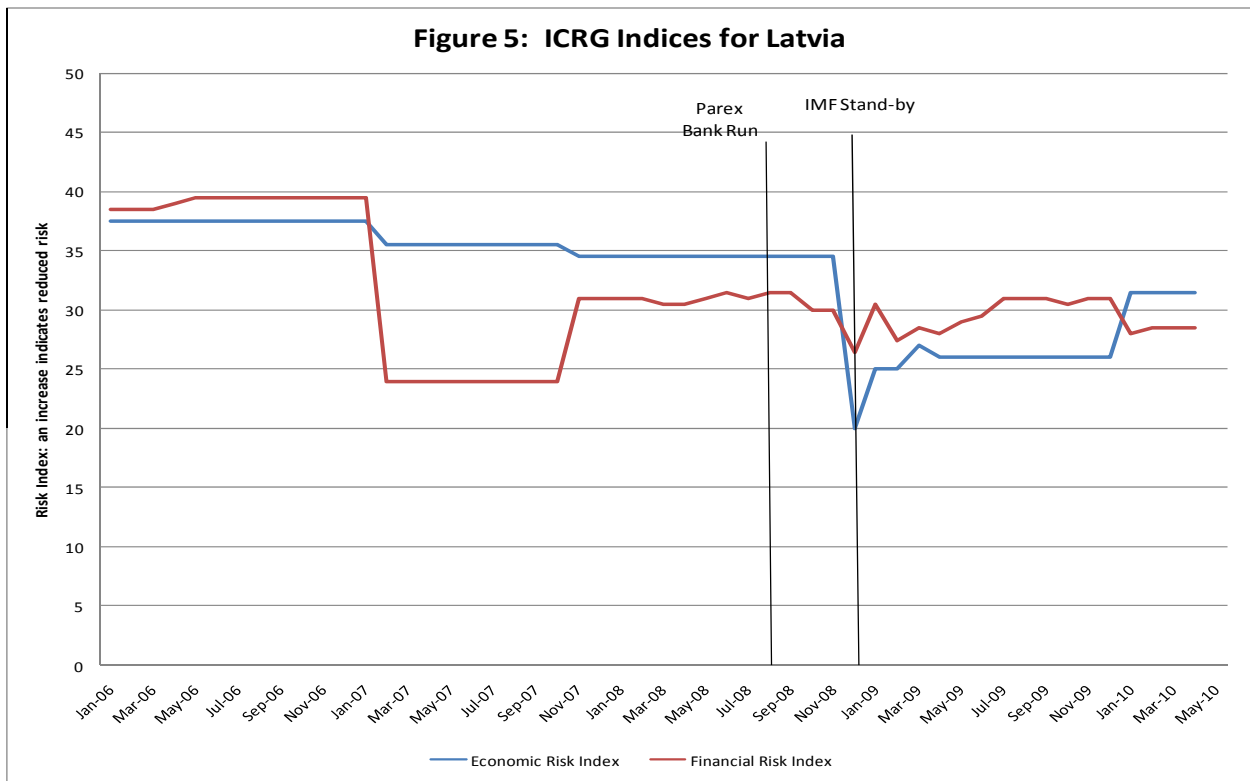
Source: World Economic Outlook, International Monetary Fund, various editions



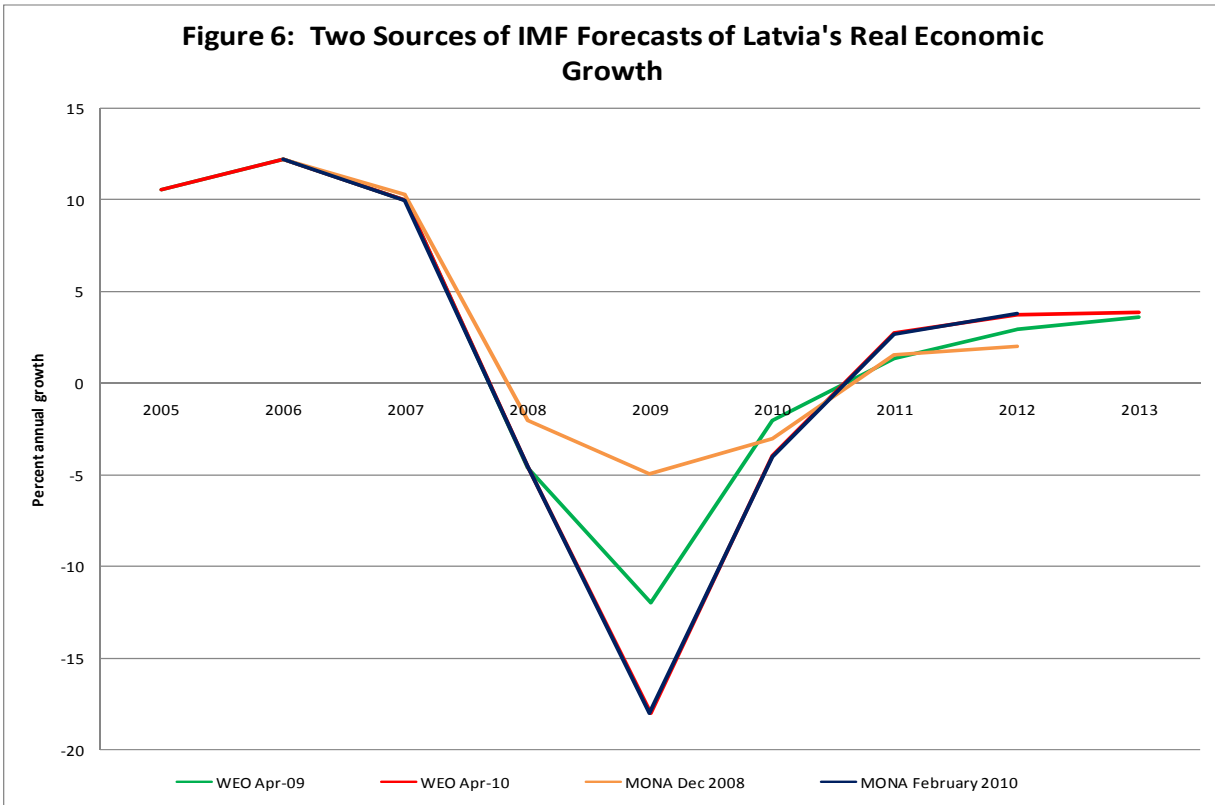
Source: World Economic Outlook, International Monetary Fund, various issues.



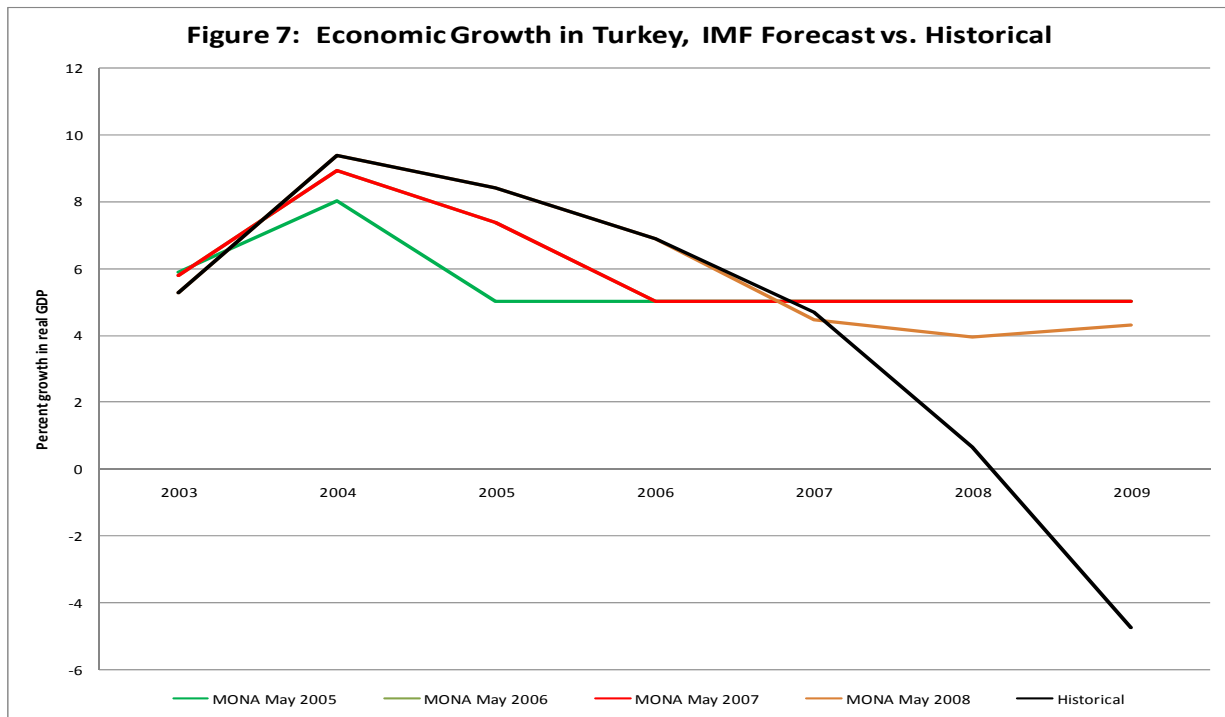
Sources: Standard and Poor's data; Moody's data; IMF documents online.



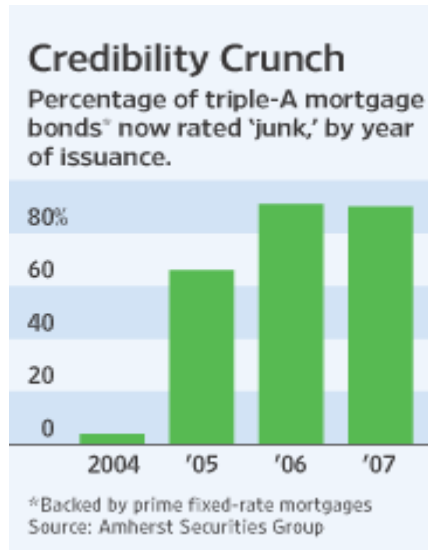
Source: PRS, Inc.



Sources: World Economic Outlook and MONA databases, International Monetary Fund.



Source: MONA database and WEO April 2010 database (for historical), International Monetary Fund



Wall Street Journal, 25 May 2010

Appendix: IMF communication concerning Latvia's economics status (excerpts).

1. IMF Staff Visit to the Republic of Latvia, October 13-15, 2004

Latvia's economy grew strongly during the past decade, supported by prudent monetary and fiscal policies and fundamental structural reforms. More recently, accelerating growth has been accompanied by a resurgence of inflation and a further widening of the current account deficit. Limiting macroeconomic imbalances will be critical to fostering conditions for sustained economic expansion and for moving forward on the path to euro adoption. At the current juncture, policies should be geared toward containing demand pressures and mitigating financial sector risks.

2. IMF Staff Visit to the Republic of Latvia, November 30-December 2, 2005. [bold in original]

The rapid pace of economic growth in Latvia has quickened income convergence, but has also brought unwelcome side effects. Current growth is outpacing the economy's capacity to generate goods and services and, with activity now somewhat above potential, price and wage inflation have increased and the external current account deficit has widened. Inflation, moreover, is likely to remain above the Maastricht threshold for some time.

Bursts of very high growth will frustrate, rather than support, Latvia's goal of sustained income convergence. Credit that serves to boost consumption and real estate will not expand the economy's long-term potential or generate the resources to repay debt. **With these risks in mind, it is important to take early action to contain overheating pressures and ensure the resilience of the financial system.** Steps are needed to dampen demand to a rate that is more in line with the economy's supply potential, and to slow the speed of credit to prevent the accumulation of financial sector vulnerabilities.

3. IMF Staff Visit to the Republic of Latvia, September 2006

Financial deepening, EU-funded spending, and real wage growth caused a surge in domestic demand that pushed the economy above capacity. GDP growth accelerated to 10¼ percent in 2005, and the current account deficit and inflation remained elevated. Foreign liabilities continued to build, while competitiveness weakened, banks' exposure to credit and market risks rose, and currency mismatches of households widened. High inflation will thwart plans to adopt the euro in 2008; while a new target date has not yet been set, market participants now expect euro adoption only in 2010 or later.

An upfront policy tightening is needed to contain near-term overheating and secure a soft landing. Fiscal restraint is needed to counter the sizable demand stimulus already in play. Moderating credit growth is essential to relieve overheating pressures. Risks from the credit boom and delayed euro adoption reinforce the need for a strong regulatory and supervisory framework for banks. Safeguarding competitiveness while narrowing the wage gap requires scaling the technology ladder.

4. IMF Staff Visit to the Republic of Latvia, April 2007.

Fast credit and wage growth has caused the economy to diverge from a balanced and sustainable growth path, with domestic demand outstripping Latvia's supply capacity. As a result, overheating has intensified, bringing higher price and wage inflation, a sharply wider current account deficit, and greater external indebtedness. Rapid credit growth in euros has left large currency mismatches on the balance sheets of households and corporates and a boom in housing prices that has diverted resources from the tradable sector. A pervasive "buy now-pay later" mindset has settled in and is heightening systemic risk. These developments, if not tackled firmly, will thwart a recovery of export growth.

There is an urgent need for decisive action to unwind overheating pressures and narrow external imbalances by sharply curtailing domestic demand. Notwithstanding actions by the Bank of Latvia to raise risk awareness, recent pressure on the lats signals growing investor impatience with the limited policy response so far. A comprehensive strategy is therefore needed to curb domestic spending and wage growth, and moderate real estate prices to rebalance incentives for investing in tradables sectors.

In our view the high level of imbalances and vulnerabilities warrants more decisive and comprehensive action. We therefore urge the Government, FCMC, and the Bank of Latvia to demonstrate unwavering commitment to a policy that would generate an appreciable near-term adjustment in the current account. A substantial front-loaded fiscal adjustment is essential to begin to counter demand buoyancy while helping convince the private sector of the government's willingness to shoulder its share of the burden.

5. December 2008: Stand-by arrangement.