BACKGROUND PAPER

BP/10/05

IMF Performance in the Run-Up to the Financial and Economic Crisis: Bilateral Surveillance of the United Kingdom

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December 9, 2010

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IEO Background Paper
Independent Evaluation Office
of the International Monetary Fund

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ABBREVIATIONS

BIS	Bank for International Settlements
BOE	Bank of England
CDO	collateralized debt obligation
CRT	Credit Risk Transfer
EUR	European Department
FSA	Financial Services Authority
FSR	*Financial Stability Report*
FSAP	Financial Sector Assessment Program
FSSA	Financial Sector Stability Assessment
G-7	Canada, France, Germany, Italy, Japan, United Kingdom, and United States
ICM	International Capital Markets Department
IFS	Institute for Fiscal Studies
LTV	loan-to-value ratio
MBS	mortgage-backed securities
MCM	Monetary and Capital Markets Department
NIESR	National Institute of Economic and Social Research\
OECD	Organization for Economic Cooperation and Development
SIPs	selected issues papers
SIV	structured investment vehicle

I. Introduction[1]

1. This case study investigates to what extent the IMF identified in advance the vulnerabilities in the U.K. economy and financial system that contributed to the crisis that emerged in 2007, and the effectiveness of the IMF in identifying and warning about the risks involved. It focuses on assessments made in Article IV reports, associated selected issues papers (SIPs) and other reports over the period 2005–07, including follow-up to the 2003 FSAP. It also briefly examines the 2008 Article IV consultation (which was completed in July 2008, a few weeks before the crisis entered its most critical phase) to see what judgments were made about continuing vulnerabilities and risks and the likely future course of the crisis.[2]

2. Section II seeks to summarize the structural and policy weaknesses that contributed to the crisis as it affected the U.K. Section III analyzes the assessments of these vulnerabilities made at the time by the IMF, and the relevant policy advice given. Section IV looks at assessments that were made at the same time by other institutions, including the BIS, OECD, and Bank of England: Would the IMF's analysis have been more prescient if staff had paid more attention to what others were saying at the time? Section V summarizes what the Fund got right, what it got wrong, and why, and draws some provisional conclusions about how surveillance could be done better in future.

II. Context

3. This section gives a brief summary of the way the crisis unfolded in the U.K., and of the structural and policy weaknesses that contributed to it.

4. The underlying weaknesses were summarized in October 2008 by the Bank of England in the following terms (2008: 5):

> "… weaknesses within the financial system ... developed during an extended global credit boom: rapid balance sheet expansion; the creation of assets whose liquidity and credit quality were uncertain in less benign conditions; and fragilities in funding structures.

[1] This paper has benefited from comments from IEO colleagues and others. The author was an IMF Executive Director between 1990 and 1994, and served as an official in the U.K. Treasury until 1998.

[2] During the evaluation period, IMF staff conducted three surveillance missions: December 2004 (for the consultation completed in March 2005); December 2005 (for the consultation completed in March 2006); and December 2006 (for the consultation completed in February 2007). The mission for the 2008 Article IV consultation, which is also briefly covered in this study, took place in May, and the consultation was completed in July 2008.

> [By 2008] rising macroeconomic uncertainty, partly due to tightening credit conditions, helped expose these weaknesses. Falling asset prices and a weakening economic outlook added materially to expected losses and increased uncertainty about the value of banks' asset portfolios. As counterparty risk rose, lenders became progressively more reluctant to offer term financing, accentuating pressures on institutions with a high dependence on wholesale funding. Banks and other financial institutions sought to protect their balance sheets through asset sales and tighter credit supply. But that led to further asset price falls and increased uncertainty about economic prospects and banks' viability, as an adverse cycle began to develop."

5. The Bank of England's detailed analysis made at the same time mentions a number of the factors that have come to be accepted as sources of the crisis. Most observers would now accept that some or all of the following factors contributed to the crisis both internationally and as it affected the U.K., and that the crisis or its severity resulted from a combination of these factors rather than any single one:

- Borrowing in the U.K., as in a number of developed countries, increased over an extended period, fuelled by low real long-term interest rates and in part financed by inflows of foreign capital, including high savings and current account surpluses in Asia which also led to accelerated global integration of financial markets. One result was a rapid expansion in banks' balance sheets. In the U.K., balance sheets of major banks nearly tripled between 2001 and 2007, and this understates the expansion by excluding the rapid growth of off-balance sheet conduits and structured investment vehicles. And as domestic U.K. saving fell, the surplus of major bank lending to domestic customers over deposits from customers rose by £700 billion between 2001 and 2008, much of this increase in wholesale funding being ultimately sourced overseas.

- The prolonged period of benign economic conditions with low inflation and interest rates not only led to increased credit demand and supply, but also led to banks and other investors taking progressively higher risks in the search for higher yields, including high loan-to-income ratios, financing leveraged buy outs, sub-prime lending, higher market risks including through the use of off-balance sheet investment vehicles, and increased dependence on potentially volatile wholesale funding.

- The willingness to extend credit on more risky terms contributed to inflated asset values, especially in housing and commercial property where a price bubble took prices well above long-term sustainable levels. U.K. house prices doubled in nominal terms between 2001 and 2007. This disguised risk; as has been the case in previous asset bubbles, lenders did not give sufficient weight to the risk of a future downward adjustment in prices.

- The increase in risk was further disguised by a second factor. The development of new complex financial products such as collateralized debt obligations (CDOs) appeared to reduce risks, but in fact carried risk characteristics that were less than fully understood. This "originate and distribute" model of doing financial business also helped drive the decline in credit risk assessment standards, the increased national and international interconnectedness of financial markets and institutions, and the increased reliance by some on wholesale market funding:

    - It reduced incentives for originators of credits to assess risks fully, and later led to uncertainties as holders of securities and insurers of risk lacked links with ultimate borrowers and hence were not well placed to assess changes in their circumstances.

    - It led to increased interconnectedness between banks and other financial institutions, with risks assumed or securities held often by institutions that did not fully understand the risks involved, and some banks becoming reliant in their business model on access to wholesale financial markets.

    - It also led to much-increased interconnectedness internationally, with substantial foreign investments in U.S.-originated mortgage-backed securities (MBSs) and CDOs.

- The search for yield and acceptance of higher risk was in part driven by banks' compensation packages for their staff that in effect rewarded undue risk taking.

- Financial regulators in many developed countries, including the U.S. and U.K., though in general terms aware of some of these risks, took little action to offset them, relying instead on a regulatory model that assumed banks themselves had adequate systems in place to assess and contain risk, and also paying too little attention to systemic risks of a kind that individual banks might be less well placed to assess. In the U.K., there were also weaknesses in the public deposit guarantee arrangements, which provided inadequate reassurance for depositors in a crisis, and in the regime for providing an orderly workout for a financial institution in crisis.

6. These vulnerabilities, which had developed over a long period, eventually began to be triggered in the summer of 2007 by rising defaults in the U.S. sub-prime market. Securitization markets broke down; valuation uncertainty rose sharply, especially for complex products; uncertainty premia rose; and access to liquidity became more difficult and in some cases nearly impossible. In the U.K., it was Northern Rock's inability to access wholesale funding that led to the run on this bank in September 2007 and the subsequent government rescue, with a range of measures taken by the authorities to support the bank, to provide wider liquidity support to the market, and to extend the public guarantees given to all retail bank deposits.

7. While at that stage (Fall 2007) some observers thought the turmoil would be short-lived, in fact the underlying vulnerabilities discussed above were more deep seated:

- Bank balance sheets that had expanded much faster than the real economy;
- Growth of assets whose underlying value was uncertain and whose nature had in some cases led to diminished attention to risk;
- Liability structures overly reliant on wholesale funding, often ultimately sourced overseas;
- Levels of bank capital that were too low given these risks; and
- An underappreciated rise in the interconnectedness between financial institutions nationally and internationally.

8. Once these vulnerabilities began to materialize, an adverse spiral developed. Despite progressive cuts in official interest rates, falling prices of financial and real assets and falling consumer confidence and increased job insecurity fed back to financial institutions.[3] This undermined confidence and led to sharper tightening in credit conditions, making access to capital and wholesale markets more difficult and fuelling further falls in real activity. In February 2008, Northern Rock was taken into public ownership. In April, at the behest of the authorities, major U.K. banks raised substantial amounts of new capital. At the same time, the Bank of England launched its Special Liquidity Scheme, providing market liquidity to U.K. banks including on the security of mortgage-backed securities and the introduction of wholesale funding guarantees.

9. Ultimately, towards the end of the summer of 2008, and despite further falls in official interest rates in major economies, stress at the two largest U.S. mortgage corporations and the failure of Lehman Brothers were followed by severe strains in the global interbank funding network and widespread institutional distress. On October 8, the U.K. authorities announced a comprehensive system-wide support package to address weaknesses in U.K. banks' balance sheets, which led to majority public ownership of two of the largest U.K. banking groups. At the same time, there was a major extension of the Bank of England's Special Liquidity Scheme enhancing the liquidity support given to U.K. banks.

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[3] According to figures cited by the Bank of England (2008: 10, 12), U.K. house prices fell 13 percent between October 2007 and October 2008 and commercial property prices fell by 24 percent between June 2007 and September 2008.

III. EVALUATION OF IMF SURVEILLANCE BEFORE THE CRISIS

10. This section assesses IMF surveillance of the U.K. economy over the years before the crisis, by reviewing written documents (public and internal), supplemented by interviews with IMF staff involved and with U.K. government officials including from the Treasury, Bank of England, and Financial Services Authority (FSA). It focuses on IMF staff views on each of the sources of vulnerability set out in Section II, as expressed in Article IV reports and SIPs and in the February 2006 FSAP Follow-Up. It looks at the extent to which the staff's analysis and discussion did or did not highlight risks and vulnerabilities discussed in that section and suggest appropriate policy responses in advance. It includes a comment on the assessment of prospects and continuing risks made in the 2008 Article IV consultation, which was completed in July 2008, shortly before the crisis entered its most critical phase.

A. Overall Judgment

11. Staff appraisals made in U.K. Article IV reports over the period up to early 2007 clearly did not warn of the risks of a crisis of the nature, scale, or severity of the one that occurred. Many of the individual risks were examined, in some cases in depth, but in general the conclusions reached were reassuring, partly because the chances of their occurring were perceived as low and partly because their impact should they occur, while "high," was not seen as anything like as severe as what happened. Perhaps critically, little consideration was given to the risk of the different sources of financial and macroeconomic vulnerability interacting to create the more serious difficulties that occurred. Of the major risks that *were* foreseen[4] one—a collapse in the dollar and/or a sharp rise in global interest rates—has not occurred; and one—a correction in U.K. house and property prices—contributed to a much more significant impact than predicted, through its interaction with global financial events and their combined impact on U.K. financial institutions and markets. In these, as in other aspects, staff views were similar to those of the U.K. authorities at the time: in the words of the 2006 Article IV Consultation Staff Report "convergence of the authorities' and staff views is high."

12. The staff appraisal for the U.K. 2006 Article IV Consultation Staff Report concluded that "… on the financial sector, which is in a position of strength, the authorities are appropriately promoting the system's resilience.[5] The key financial sector vulnerabilities are

[4] The text of the 2006 Article IV Consultation Staff Report (issued in February 2007) describes the following risks: "External risks are low-probability but potentially high-impact, particularly as the global financial center could transmit shocks to the domestic economy. Higher global interest rates could trigger a reassessment of asset valuations, including UK house prices. Slower global growth would dampen external demand for UK goods and services. A disorderly adjustment of the US dollar could put upward pressure on sterling, leading to a widening of the UK current account deficit and a worsening of the IIP, ultimately producing considerable exchange rate volatility."

[5] The text of the 2006 Article IV Consultation Staff Report also contains the statement: "The UK banking system is in rude health...." Although unlike other statements in the relevant section of the report this view is

(continued…)

low-probability events with potentially severe consequences." The text makes it clear that the key risks referred to are of a sharp rise in global interest rates and/or a disruptive collapse in the dollar. But the text also identifies over-reliance on wholesale funding and increased international financial linkages as additional: "… reliance on wholesale funding is increasing.... This raises liquidity risks, as wholesale funding may be more difficult and costly to roll over during times of heightened stress." But the appraisal goes on to state that "In addressing these risks the authorities are right to insist on balancing the costs and benefits of regulation," i.e., regulation should not concern itself too much with low probability events.

13. Even as late as July 2008, as the crisis was unfolding, the staff appraisal in the 2008 Article IV Consultation Staff Report—in line with other external commentaries at the time—failed to correctly diagnose the depth of the underlying problems in the global financial system, or to foresee the risk of the crisis entering a more critical phase as transpired only a few weeks later:

> "In the staff's central projection, the slowdown this year [2008] will be followed by a gradual rebound that gathers pace during 2009.... These forecasts reflect the underlying resilience of the economy, and the view that risks of a pronounced credit squeeze are becoming less threatening following various actions, including introduction of the Special Liquidity Scheme (SLS) and capital-raising initiatives by banks."

14. The same 2008 report does discuss the "low probability" risk of a default by another medium-sized or larger institution: "... if another institution does fail, then the broader impact could be severe if the authorities prove unable to ring fence the problem." It seems clear from the context, however, that the risk being considered is the risk of a default by a U.K. institution, not the exposure of U.K. banks to the impact of a default (as occurred) by a U.S. institution.

15. The following paragraphs review what staff said before the crisis about the vulnerabilities that contributed to it. While staff did identify many of the potential sources of difficulty, it is striking that in each case either their headline message was reassuring or the text includes a strong element of reassurance. It is also striking that little consideration was given to the way that the different factors affecting the financial sector and real economy

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not attributed to the authorities, staff say it was intended to reflect authorities' views. It appears in a section titled "Convergence of the Authorities' and Staff Views is High." The internal staff report written on financial developments in the U.K. at the same time, which seeks to spell out the vulnerabilities in more detail, also says that the U.K. financial system is in robust health, having withstood a series of economic and market disturbances over the previous year.

could interact with each other, a failure also identified by the U.K. authorities as a weakness in their analysis at the time.

16. While the analysis is mainly based on what is said in published Fund documents, interviews with U.K. officials and Fund staff and a review of internal Fund documents confirm that the messages given in public documents were essentially those also given in private meetings. Throughout 2004–07, there were lively discussions in the course of consultations on some issues such as the fiscal stance, the amount of slack in the economy, and the size of wealth effects; and on these issues there was push back from the authorities, and staff conclusions were something of a compromise. But on the risks that contributed to the crisis, there seems to have been a meeting of minds that U.K. institutions were sound and well supervised and that risks were containable. On this, the only written evidence of a minor disagreement over the whole period is a statement in the mission chief's Back to Office Report from the December 2005 Article IV Consultation that "Treasury officials questioned the need for expanded attention to financial sector issues in the concluding statement but did not dispute its thrust." The only evidence of a disagreement on financial stability issues is an account of a lively discussion (noted in further detail below) in the course of the 2006 FSAP Follow-Up, of whether more data should be collected.

B. Increased Reliance of Lenders on Wholesale Funding and Funding from Overseas, and Rapid Expansion of Bank Balance Sheets During a Period of Benign Economic Conditions

17. There is little discussion in Article IV reports or SIPs or the February 2006 FSAP Follow-Up of the rapid expansion of bank balance sheets as a possible indicator of heightened risk, although the FSAP Follow-Up contains quite a comprehensive table of other financial stability indicators. Like the U.K. authorities, staff did not highlight gross leverage ratios which were increasing fast in U.K. banks (doubling between 2000 and 2007).[6] Staff did draw attention to the risks and benefits to the U.K. of growing international financial linkages, and the inherent risks of greater reliance on wholesale funding, but in every case they either reached a reassuring conclusion or injected a strong note of reassurance:

- February 2006 Article IV Consultation Staff Report: "Staff asked about risks posed by global imbalances. Officials responded that sudden shifts in international capital flows could disrupt a wide range of asset markets, potentially leading to costly and disorderly adjustments in banks' balance sheets. Staff and officials agreed that the banking system is well-positioned to absorb substantial shocks."

[6] Nor did the authorities volunteer the fact that, while overall capital ratios for the banking sector looked comfortable even on a risk-adjusted basis, some of the major U.K. banks were relatively thinly capitalized.

- February 2006 FSAP Follow-Up*:* "However, banks have been increasingly experiencing a funding gap since 2002 as credit growth outstripped deposit growth. As a result, greater use of wholesale funding by banks has been observed. This strategy has somewhat increased the liquidity risk for some banks, as wholesale funding may be difficult and costly to roll over during times of company-specific or market-wide stress. That said, with the rate of growth in bank lending and deposits from customers converging over the past year, the rate of growth in the funding gap has slowed."

- February 2007 SIP on the "Transmission of Shocks in the International Banking System and Implications for London as a Global Financial Center." This paper notes significant contagion risks: "… the accessibility, innovation, and integration that represent London's major competitive strengths also heighten participants' exposure to the risk of contagion through numerous channels when market events occur. Specifically, the banking sector is a potentially key conduit for contagion risk within the local financial sector and between financial systems across countries ..." It concludes that: "Our results highlight relationships which may require closer supervision and surveillance, and a more detailed understanding of linkages by the local authorities. Overall, the risk of contagion among local banks is highest, while interlinkages with foreign banks appear to have increased over time." But that "the U.K. authorities appropriately emphasize that responsibility for mitigating risks to the financial system is shared between the private sector and the public authorities…. In the private sector, risk management by banks has increasingly become more professionalized… However, the authorities have identified several areas where risk management could be improved." And that in spite of existing arrangements for international collaboration, "the U.K. authorities acknowledge that there is a need for further work on cross-border co-ordination and information sharing between national authorities in promoting financial stability." Nowhere does the paper discuss the possibility of a shock of the nature or severity of the one that occurred.

- The February 2007 Article IV Consultation Staff Report notes that "Linkages between the U.K. financial system and financial systems in other countries are growing.... These growing linkages are both a strength and a vulnerability. They allow the impact of bad shocks to be more broadly dispersed (risk transfer) and thus more easily absorbed by individual institutions and the system as a whole. However, they also potentially allow the impact to be spread around the global financial system more widely and rapidly.... Given these growing cross-country linkages, global risks are particularly important to the U.K. financial system, more for their potential severity than for their likelihood of being realized. If global interest rates rise, unusually low risk premia reverse, or major currencies move sharply, credit and market risks in the U.K. financial system could be realized. Extended balance sheets in the domestic nonfinancial sector are a vulnerability. Leverage, especially among commercial property companies and arising from leveraged buyouts, has grown

rapidly. Household debt has also increased rapidly, mostly reflecting mortgage lending. Financial institutions' own balance sheets also contain vulnerabilities. Exposures to risky and potentially illiquid instruments are rising, including structured credit products, emerging market assets, commodities, and commercial property. At the same time, reliance on wholesale funding is increasing, as reflected in the gap between customer lending and customer funding through deposits. This raises liquidity risks, as wholesale funding may be more difficult and costly to roll over during times of heightened stress."

18. This last passage and other passages from the February 2007 Article IV Consultation Staff Report quoted below reflect a list of financial sector risks included in the pre-mission brief that staff considered as important "more for their potential severity than the likelihood of their being realized." Yet the overall conclusion in the February 2007 Article IV Consultation Staff Report was as recorded above: that the financial sector was in a position of strength, and that its key vulnerabilities were low-probability events such as a disorderly adjustment in the dollar or a rise in global interest rates. There is no sense that the different vulnerabilities identified could interact and reinforce each other, or that in some circumstances access to needed wholesale finance could dry up completely either for specific institutions—with potential contagion effects for others—as turned out to be the case for Northern Rock later in 2007, or for the system as a whole, as happened in September 2008.

C. Increased Risk Taking

19. Article IV staff reports completed in 2006 and 2007 mention the likelihood that financial sector risk had increased, but with no great sense of urgency.

- The February 2006 FSAP Follow-Up report concluded that "The U.K. banking system is one of the strongest among advanced economies, and the health of the insurance sector has improved substantially in recent years. That said, retail asset quality has deteriorated somewhat, with the uptick in personal insolvency rates, and banks' rapidly increasing exposure to commercial property. There has also been some easing in corporate lending standards within an intensely competitive, low-yield environment. Further, the rapid growth of the CRT market—while providing important diversification benefits—is also creating risks. For instance, the speed of innovation may have outstripped the development of market infrastructure and risk management systems of financial institutions. The authorities are well aware of the medium-term risks to outlook for the financial system, and continue to publicize these concerns, as well as the more general evidence that risk may be underpriced."

- The same FSAP Follow-Up report also noted a specific potential risk from the growth in sub-prime mortgage lending: "Sub-prime mortgage lending in the United Kingdom is reportedly increasing. This category of lending comprises products which are more flexible relative to the mainstream products. While this activity has largely been the

preserve of specialist lenders in the past, more mainstream lenders are reportedly entering the market, albeit at the less risky end of the sub-prime range initially."

- And the same report cautioned that "*medium-term* (emphasis added) risks exist, shaped by apparent expectations that benign credit conditions will continue indefinitely, and the intensifying interlinkages across different segments of the financial sector. There is some concern that risk may currently be underpriced, as investors leverage-up in their search for returns in a low-yield environment, while banks come under increasing competitive pressures in the lending market. Meanwhile, rapid financial innovation has allowed banks to transfer credit risk outside the banking sector to other financial institutions. While the development of the credit risk transfer market is clearly positive in enabling the diversification of existing risk concentrations, any major shock to the financial system could potentially be magnified by the increased linkages among these institutions."

- The February 2006 Article IV Consultation Staff Report notes that: "Increased macroeconomic stability and financial innovation are positive developments, but are also changing the landscape of risk. Low and stable inflation and less volatile economic growth have reduced uncertainty about future cash flows, but this may be leading some investors to be overly optimistic about policymakers' ability to offset macroeconomic shocks.... Together, macroeconomic stability and financial innovation have contributed to expectations of continued low asset price volatility and low risk premia, though some investors may be overly sanguine about the underlying risks of some financial products, particularly in the current low yield environment." But it goes on to note that: "Financial supervisors are skillfully meeting the challenge of overseeing a global financial center. Well-capitalized and cost-efficient, banks appear to be well-positioned to absorb losses that might arise from the most likely types of financial market disturbances. Supervisors' judgment that specific risks—including from exposures to commercial property, a possible loosening of corporate lending standards, and the growth of sub-prime lending—are manageable seems reasonable. Nevertheless, the authorities' warnings that investors may be underpricing risk, particularly given concerns about global imbalances, are welcome."

- And the February 2007 Article IV Consultation Staff Report notes: "Extended balance sheets in the domestic nonfinancial sector are a vulnerability. Leverage, especially among commercial property companies and arising from leveraged buyouts, has grown rapidly. Household debt has also increased rapidly, mostly reflecting mortgage lending. Financial institutions' own balance sheets also contain vulnerabilities. Exposures to risky and potentially illiquid instruments are rising, including structured credit products, emerging market assets, commodities, and commercial property."

D. Inflated Asset Prices

20. Successive Article IV reports warned of the risk of a correction in house prices:

- The February 2005 SIP[7] analyzed the potential impact of a significant fall in house prices on GDP, and the correct monetary policy response. It noted that house prices at that point could be 25–60 percent overvalued. The analysis however merely looked at the direct impact on consumption and demand. It did not examine the potential impact that such a fall in property prices could have through its impact on financial institutions.

- The February 2005 Article IV Consultation Staff Report concludes that: "Indicators of the health of the financial sector remain favorable. [However] there are downside risks including unsecured lending to households [i.e., not mortgage finance], lending related to commercial property." It also noted a revision in staff views about the extent of overvaluation in the housing market: "BOE officials and staff agreed that house prices are likely still overvalued, noting the elevated ratios of house prices to average earnings and of house prices to rents. Moreover, estimates of overvaluation are highly sensitive to the level of real interest rates—an increase in interest rates would significantly increase estimates of overvaluation. However, the degree of estimated overvaluation is tempered by the growing number of households, constraints on housing supply..."

- The February 2007 Article IV Consultation Staff Report continued to note the risk of a fall in house prices: "In the short term, forward-looking indicators of housing market activity suggest that house price growth is likely to remain elevated. In light of estimates that house prices are already overvalued, this would increase the subsequent risk of an abrupt downward adjustment. The current strength of household balance sheets reflects in part high house prices."

21. There was remarkably little analysis of the potential impact on banks of a fall in property prices, and what there was appeared reassuring.

- The 2006 FSAP Follow-Up report noted that: "Banks' mortgage books do not appear to be a significant direct source of vulnerability. Although the proportion of new mortgages with higher loan-to-value (LTV) ratios has increased, the average LTV ratio remains extremely favorable, at 40−50 percent. Analysts estimate that property prices would have to fall by 30–40 percent before stresses are manifest in the banking sector. This scenario is considered highly unlikely—the housing market has been more resilient than expected, while the economy, particularly the low rate of

[7] See Chapter II, "How Should Policymakers Respond to a Decline in House Prices?"

> unemployment, remains supportive overall. Further, the concentration is largely in fixed-rate mortgages, which should mitigate the interest burden for households, in the event of a sustained rise in interest rates."

22. Staff did not at that point seem to have considered the possibility that the estimate they had made a year earlier—that house prices were between 25 percent and 60 percent overvalued—could turn out to be correct. Nor did they consider the possibility that the averages quoted could conceal the fact that particular lenders of significant size might have been concentrating on high LTV business and the buy-to-let market, and could therefore be vulnerable, despite the reassuringly low average LTV ratio. In evaluation interviews staff said they took the view at the time (probably in line with the U.K. authorities) that only the "Big Four" banks in the U.K. could pose a systemic risk and they were confident that these banks were not concentrating their business in this way. And they did not test the view attributed to "analysts" that the system could absorb a 30–40 percent fall in prices before stresses emerged. As it turns out, of course, a more modest fall was a contributing factor, although less important than the parallel and larger fall in commercial property prices, that helped trigger substantial problems, first in some significant lenders outside the "Big Four," including Northern Rock and HBOS, and then in the system as a whole.

23. Nor did staff explore the possibility that monetary policy could have contributed more to cooling asset prices and associated bank balance sheet growth. With hindsight, some staff now hold that higher U.K. interest rates could have contributed to slowing asset price rises alongside stronger prudential rules. Others point out that this could have led to a period of very low or even negative inflation and a higher exchange rate, at a time when the strength of sterling was already a legitimate policy concern. There is, however, no sign in Article IV reports that staff considered the possibility that interest rate policy should take greater account of asset prices; successive staff appraisals of monetary policy focused rather on the impact of global energy prices and the importance of wage restraint, and broadly endorsed decisions taken by the Bank of England:

- The February 2006 Article IV Staff Appraisal says: "… monetary policy decisions remain delicately balanced. In 2005 monetary policy successfully navigated the slowdown in demand and rise in energy prices. With no signs of second-round effects of the oil price increase but a sharp deceleration in demand, the ¼ percentage point cut in the policy interest rate in August acknowledged the downside risks to demand, while keeping the rate in a neutral range. Looking ahead, the immediate focus of policy should be on remaining risks of second-round effects from the oil price increase. Once such risks have eased further, interest rate decisions should be increasingly guided by whether demand remains on track to close the output gap."

- And the February 2007 Staff Appraisal says: "Monetary policy is well-positioned to respond to shocks, though taming the energy-price-related increase in inflation remains a challenge. With diminishing economic slack and possibly rising inflation

expectations, incentives are weakening for a timely adjustment in real wages to permanently higher energy prices. The tightening of monetary policy since August 2006 has therefore been appropriate to help ensure that inflation returns to target. For the immediate future, continuing to communicate the importance of wage restraint will help minimize the need for additional increases in interest rates. Depending on evolving prospects for wage growth, some further tightening of monetary policy may be required. More broadly, the BOE's efforts to disentangle the influences of globalization on inflation and monetary policy, and to communicate them to the public and financial markets, are appropriate."

E. Growth of Complex Financial Products and the Impact of the "Originate and Distribute" Model of Business

24. The analysis of the growth of new products, while pointing to some of the risks—of potential illiquidity and of risks not being fully understood—was again on balance reassuring. Much stress was put on the benefits such products were seen to bring as well as on their potential risks:

- The February 2006 SIP on "The Credit Risk Transfer Market and its Implications for Financial Sector Stability" contains a lengthy analysis of the U.K. CRT market and the growth of CDOs and similar instruments. It concludes that: "Our results indicate that the structured credit market may not pose a substantial threat to financial sector stability in the United Kingdom, at this point. The apparent diverse holdings across major financial institutions potentially active in the structured credit market may have limited the impact of any negative shock to the market. Further, insurance companies, at least the major publicly listed ones, appear to prefer the "safer" senior tranches. Overall, the challenge for regulators is to ensure adequate regulation, supervision, and surveillance of this rapidly growing market, while encouraging the development of this market."

- The February 2006 Article IV Consultation Staff Report notes that: "... rapid financial innovation, notably in derivative and securitization markets, has facilitated risk diversification, allowing banks in particular to transfer credit risk to a wide base of investors, and thus increased the capacity of the financial system to bear risk. However, the authorities and staff agreed that risk transfer markets have made the ultimate destination of these risks more opaque, complicated contract enforcement problems, and enabled the build-up of leverage." And the Staff Appraisal concludes that: "The rapid growth of credit risk transfer instruments, which are providing important diversification benefits, is also creating some risks."

- The February 2007 Article IV Consultation Staff Report emphasizes the beneficial aspects of new complex products: "The health of the banking system reflects improved risk management, geographical diversification, and growth of new business

> activities. In particular, financial innovation has allowed banks to transfer some of the risk that they negotiated, bilateral banking finance to arms-length finance through asset markets has facilitated consumption smoothing. Bank regulation and supervision have responded well to these developments."

25. There appears to have been no discussion with the authorities of the risk that the "originate and distribute" model of business could have reduced the incentives for originators to make adequate risk assessments or that it could lead to problems because of lack of links between asset holders and the ultimate debtors. Nor does the analysis consider, for example, the possibility of emerging serious exposure of U.K. institutions, through their holdings of U.S. CDOs, to the U.S. sub-prime market.

26. Interviews and Fund internal documents throw some further light on this failure in analysis. The November 2006 mission conducted in preparation for the subsequent 2007 Article IV Consultation received internal comments from MCM and ICM on their draft pre-mission brief, to the effect that the rise in the use of credit derivatives and the issuance of covered bonds and mortgage-backed securities by U.K. banks enhanced financial stability. Interviews with the U.K. authorities reveal that:

- Although they were aware of the existence of off-balance sheet vehicles such as SIVs they would have been shocked to learn of the scale of their use.

- Neither they nor in some cases banks themselves (because the assets were held by the treasury function) were aware of the scale of banks' exposure to U.S. CDOs and the U.S. sub-prime market.

Interviews with Fund staff reveal that they too were aware of the existence of off-balance sheet vehicles. They asked the authorities questions about the scale of such activity and pressed for collection of extra data, but the FSA objected pointing at the costs of collecting such data, the scale of the reporting burden already imposed on U.K. banks, and because staff could not specify what data they had in mind. In view of these objections and after a lively discussion with the FSA, the mission decided not to press the point further. Staff did write a 2007 SIP ("Transmission of Shocks in the International Banking System and Implications for London as a Global Financial Center") using published information to throw what light they could on the issue. With the benefit of hindsight, it seems that staff should have made this exchange with the FSA a theme of the Article IV appraisal.

F. Impact of Banks' Compensation Packages on Risk-Taking Behavior

27. There is no mention, anywhere, of the impact that bank compensation packages may have had in encouraging risk taking. This does not seem to have featured as an issue in either the Article IV Consultation or FSAP Follow-Up discussions.

G. Regulatory Weaknesses

28. In general, staff was highly complimentary about the quality of U.K. financial regulation: The 2006 FSAP Follow-Up report for example concludes that: "Overall, the financial sector is well-regulated. The FSA is generally perceived to be even-handed and professional in its approach to regulation and supervision." It goes on to note with apparent approval that "The regulator is obliged to be cost-effective, in order to ensure the 'proportionality' of any regulation it imposes. The cost of regulation is quantified, while benefits are assessed on a qualitative basis." The February 2006 Article IV Consultation Staff Report concludes that "financial supervisors are skillfully meeting the challenge of overseeing a global financial sector."

29. The 2006 FSAP Follow-Up was a follow-up to the full U.K. FSAP completed in 2003, and published as the 2003 U.K. Financial Sector Stability Assessment (FSSA). A central focus of the 2006 Follow-Up was payments system arrangements, which had been a focus of the 2003 recommendations. But the 2003 recommendations also covered two other issues which in hindsight seem more relevant. On deposit insurance, it noted that the success of the deposit insurance scheme was "highly dependent on ... safety nets [being] well understood by potential claimants;" and it noted that the authorities "are taking steps to address [this and should] consider whether a more explicit credit line from the government would be desirable." The FSSA also noted that the U.K. "has no special statutory regime to address the insolvency of financial institutions," and encouraged the authorities to consider this further. These points, however, were not picked up in later Fund surveillance, or in the FSAP Follow-Up (which gave priority to looking at follow-up to the 2003 recommendations on the payments system). Still, the February 2007 Article IV Consultation Staff Report refers, with approval, to ongoing efforts by the authorities to strengthen crisis management, and a 2006 internal staff note written on U.K. financial sector developments indicates that "the FSA appears comfortable with the United Kingdom's work towards dealing with a domestic financial crisis." It is possible that a more comprehensive check of progress on the 2003 recommendations could have promoted a more productive discussion of the issues.

30. In fact, in December 2006, the U.K. authorities conducted a simulation of a run on a U.K. bank that reached the conclusion that the existing deposit guarantee scheme was inadequate to provide the public assurance needed in such circumstances. The U.K. authorities did not share their thinking on this with the IMF mission, possibly because of confidentiality concerns. After the start of the crisis, the U.K. authorities took action to strengthen both the deposit insurance scheme and financial institution insolvency procedures, tacitly accepting the wisdom of the 2003 FSAP recommendations.

31. It is now clear that the U.K. authorities, like regulators elsewhere, did not pay sufficient attention to financial system stability issues, and the way that national and international economic, financial system, and regulatory events were interacting and could interact in future. Again with the benefit of hindsight, staff should have pointed out that

monitoring financial stability was being given less attention than it deserved, or that the function was in danger of falling between the responsibilities of the Bank and the FSA.

H. Triggers for a Crisis and Possibility of Vulnerabilities Interacting

32. In short, successive Article IV Consultation staff reports and their associated SIPs did identify some of the vulnerabilities that eventually led to the crisis. In each case, however, the concluding message was reassuring.

33. The key external risk discussed was that of a disorderly adjustment in the U.S. dollar and/or sharp rise in global interest rates. The risk that actually materialized and provided the trigger for the crisis—of problems in the U.S. housing market being transmitted to affect financial institutions across the globe—was not considered. A key internal risk, of a sharp fall in U.K. property prices, was identified early on. But the impact that could have on financial institutions and markets was not fully investigated. Nor, more generally, was the risk investigated that different sources of vulnerability could interact to reinforce each other.

IV. Analysis by Other National and International Institutions

34. Were others saying anything at the time that could have helped make the IMF's analysis more prescient? This section reviews what was being said by other international institutions, by the national authorities, and by U.K. commentators and think tanks about emerging risks before August 2007.

A. Other International Organizations

35. Among international organizations, the Bank for International Settlements (BIS) is generally held to have the best claim to have warned about the emerging global risks ahead of the crisis; and some of its officials, in particular, Bill White, the Head of the Monetary and Economic Department, spoke more directly about these risks in private than the BIS did in its publications. That said, a review of BIS quarterly reviews between 2004 and 2007 reveals little by way of specific warnings about potential problems in the U.K., other than a general concern about the level of property prices and the extent and scale of international linkages of the U.K. banking sector.

36. The U.K. economic surveys of the Organization for Economic Cooperation and Development (OECD) in October 2005 and September 2007 contain no relevant warnings. In 2005, the OECD mentioned a number of short- and longer-term challenges facing the U.K., but risks to financial stability did not feature among them. Even in September 2007, the OECD had nothing specific to say about weaknesses in financial regulation and risks to financial stability, other than that the recent financial turbulence could depress short-term growth prospects.

37. While IMF staff might usefully have paid more attention globally to the warnings of the BIS, there is little it could have learned specifically about the U.K. from reading the published assessments of either the BIS or OECD.

B. U.K. Authorities

38. As part of the Tripartite (the Bank of England, HM Treasury, and the Financial Services Authority) that has a shared Financial Stability objective, the Bank monitors risks to financial stability. The Bank has a "financial stability" wing and publishes its *Financial Stability Report* (FSR) twice a year. The FSR is specifically designed to give warnings of potential risks ahead. And to some extent it did. The July 2006 FSR identified six sources of risk: unusually low risk premia in global markets; large imbalances between major economies; rapid releveraging in the corporate sector; high U.K. household debt; insufficiently tested contingency arrangements; and growth of large complex financial institutions with expanding balance sheets and risk taking activities.[8] Subsequent FSRs in April and October 2007 tracked these risks, and noted the potentially serious impact each of them could have. Fund staff might perhaps have paid more attention to this analysis than they did, though, as set out above, successive Article IV staff reports in fact noted most of them. And in an interview, the Bank of England staff members accepted that although they had identified these individual risks they had failed to predict how they might coincide and interact with each other to bring about a crisis of the scale that subsequently emerged.

C. Outside Commentators and Think Tanks

39. None of the large think tanks that Fund missions regularly talk to, such as the National Institute of Economic and Social Research (NIESR) and the Institute of Fiscal Studies, claims to have foreseen the crisis. The NIESR did draw attention, repeatedly over the years, to one of the contributing factors—low national net savings—and in interview said they had suggested the Fund should pay more attention to that than to the public sector deficit.

40. Among other external commentators, there are one or two (for example Roger Bootle[9]) who have some, not entirely convincing, claim to have foreseen what might happen; but these were not among those regularly visited by Article IV missions.

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[8] As early as June 2004, the FSR highlighted risks to funding markets and the "search for yield" as concerns.

[9] Bootle's book, *Money for Nothing*, first published in 2003, predicts a bursting of the bubble in equity and property prices and the risk of a deflationary slump, but not other elements of the financial crisis as it emerged in the U.K.

D. Groupthink

41. While there is little that IMF staff could have learned from paying more attention to the external commentators with whom it is in regular contact, a deliberate attempt to reach out more to "contrarians" could have helped. Several of the commentators interviewed for this study said that the problem was essentially one of "groupthink" which affected the authorities, outside observers, market participants, rating agencies, and Fund staff alike. Fund staff respected the expertise and analysis of the Bank of England and the FSA, as is clear from their reports. All were influenced by the assessments of market participants and rating agencies. The BIS apart, no reputed outside body was predicting potential problems of the nature and scale of what subsequently occurred, and the BIS had little to say specifically about the U.K. How to escape from "groupthink" is one of the issues explored further in the next section.

V. Assessment of the IMF's Performance and Proposals for the Future

42. In hindsight, of course, the Fund's assessments of risks in the U.K. were wrong, like those of the U.K. authorities and others. While the Fund's consistent pressure throughout the period on fiscal policy and the operation of fiscal rules may have been justified, warnings on the financial sector issues at the heart of the crisis were limited. Staff did not foresee or warn of the possibility of a crisis of the scale, severity, and nature of the one that occurred, and in general their bottom line message was one of reassurance.

43. There is no evidence from internal documents or from interviews that this stance resulted from IMF Management or Board pressure on staff to soften messages. On the other hand, however, there is some written and interview evidence of pressure of this kind to tone down specific recommendations on fiscal policy issues. Fiscal issues were also the major issues of contention with the U.K. authorities (and on which there were discussions of the wording of the Article IV's concluding statement). Some have argued that these pressures reduced staff's appetite to challenge U.K. authorities regarding monetary policy, financial risk, or regulatory issues. There is more evidence, perhaps, that staff were influenced by the authorities' own analysis and strong reputation and expertise in handling financial sector issues. There was a large element of "groupthink" in the staff conclusions.

44. In assessing the Fund's performance, however, it is legitimate to ask whether it could or should have done better given its comparative institutional advantages. Despite the U.K. authorities' strong expertise and much greater firepower on both macroeconomic and, especially, financial stability issues, the Fund has at least four relevant institutional comparative advantages it can exploit to increase its leverage:

- Its reputation as an institution that errs on the side of caution and asks difficult "what if" questions with persistence;

- Its expertise and mandate in both financial stability and macroeconomic issues, and ability therefore to examine how the two interact;

- Its ability to bring cross-country experience to bear, drawing lessons from experience and policy actions in other countries to inform its policy dialogue with each member country; and

- Its analysis of global economic and financial events, and the ability to see individual country policy issues against a global background and the risks of events in one country impacting on those in another.

45. The analysis and interviews suggest a number of ways in which these comparative advantages might have been exploited better in the past and could be exploited better in the future.

46. ***Erring on the side of caution and asking difficult questions.*** A number of organizational suggestions emerged in the course of this study:

- Missions could go more out of their way to seek out contrarian views to use to challenge authorities. Also, on occasion missions could bring with them an outside expert, such as a retired central bank governor, who is ready to challenge groupthink and press difficult questions. Another suggestion is that the Fund could have an advisory panel of such eminent persons available to assist Article IV missions on occasion. And in general staff should be less concerned about being accused of "crying wolf." While this is a legitimate concern, experience is that asset bubbles and other major risks can persist for some years before their negative impact materializes.

- Staff should be more ready than they have been in recent years to give assurances about the confidentiality of some discussions and messages given in private. This would permit blunter messages to be given in private than in public, though in the U.K. case there seems to have been no wish to do that on financial stability issues at the point where such messages would have been most likely to be effective—that is, in discussions with Ministers and senior Treasury, Bank of England, and FSA officials. It might also help open the way to discussions of contingency arrangements (something the authorities appear to have been reluctant to discuss with staff, for instance when a late-2006 "war game" revealed gaps in the U.K. contingency arrangements).

- Staff should be more ready to challenge their own preconceptions. The Fund's support for securitization as a stabilizing influence is one such preconception that could usefully have been challenged more strongly. The U.K. experience also suggests that staff should have been more ready to challenge the "principles based" approach to regulation, more cautious in championing international financial flows,

and more ready to recommend using prudential instruments to address or prevent asset bubbles and influence levels of national saving.

- Article IV missions should make a regular practice in the U.K. of interviewing chief executive officers or chief risk officers of major banks (as well as bank economists) to give an opportunity to probe financial stability concerns. While the assessments by these officers would no doubt be reassuring, such interviews would give staff an additional opportunity to ask probing questions.

- Staff should be less ready to take comfort from average ratios, for example of loan-to-value in the mortgage market. As events have demonstrated, it is the tail not the average that contains the threat to stability, and staff should be ready to press for stress tests against tail events if needed.

- Where more data are needed to test a concern, such as their concerns about the scale of off-balance sheet vehicles and exposure to the U.S. sub-prime market, staff should not hesitate to press for extra data collection, and make recommendations either in published reports or in private. Similarly, staff should continue to press for enhanced transparency and publication of data already collected.

- Article IV and FSAP follow-up missions should, as a matter of good practice, ask about progress in implementing past FSAP recommendations. Had this been done it could have helped bring about a more productive discussion in late 2006 of continuing weaknesses in the U.K. crisis management arrangements.

- Given the experience of Board pressures leading to toned down conclusions, it could help sharpen the challenge process in the future if Article IV staff reports were not regularly reviewed by the Board. Cutting out this part of the process would also free up more staff resources for the surveillance function proper.

47. ***Using and integrating financial sector and macroeconomic expertise.*** The crisis resulted from an interaction of financial sector and real economy events with strong feedback between the two. The Fund, with its expertise and a mandate for both macro and financial stability issues, should have been well placed to explore such risks and to encourage the U.K. authorities to do the same. While the economics profession has yet to develop formal tools for exploring such links, this should not be an excuse for failure to consider them. In practice the focus of discussions in the U.K. was on the fiscal stance, despite staff concerns about a property asset bubble and concerns about low net national saving and reliance on financial inflows. Maybe there was a reluctance to accept regulatory measures as tools that could address these issues. A 2005 staff simulation of a house price collapse did not consider the possible impact on financial institutions. U.K. officials, in interviews for the IEO evaluation on *Interactions with Member Countries* (IEO, 2009) as well as for the current evaluation, claim to have been pressing staff for years to integrate the two analyses better:

- In countries such as the U.K. where the financial sector is such an important part of the economy there may be a case for full integration of Article IV and FSAP follow-up or update missions on an annual basis, so that the Article IV mission has regulatory expertise to match its macroeconomic expertise and so that potential feedback loops and the potential for using regulatory measures to cool asset prices and specific fiscal measures to reduce financial sector risks can be explored more fully.

- Part of this task should involve exploring whether the authorities themselves are devoting enough resources to tracking interactions between financial system and macroeconomic developments and the implications of these interactions for financial stability.

- Staff should also be more ready to recommend both regulatory and specific fiscal measures to address or prevent property and asset bubbles.

48. ***Bringing the Fund's cross-country experience to bear.*** A potentially powerful tool for the Fund in strengthening its influence is its ability to draw on its experience of other countries facing similar policy issues. This does not seem to have been done systematically. For example, in Spain, the regulatory authorities, with Fund support, had a tough upfront provisioning policy which in the event helped shield their banks from the crisis. In Ireland, the Fund supported measures to tighten capital requirements for high loan-to-value mortgages. There appears to have been no suggestion made by Fund staff that the U.K. could learn from either.

- Though mission staff say they currently rely on functional departments to bring such examples to their attention in comments on pre-mission briefs, the process is clearly not working. A more systematic approach to using the current or historical experience of other countries in providing Fund advice and in the design of stress tests should help improve the surveillance process. It could also help give staff advice more traction even in G-7 countries, despite the perceived unwillingness of these countries to accept the relevance of experience in smaller economies.

49. ***Bringing the Fund's analysis of global economic prospects and financial risks to bear.*** Staff did note the risks of a disorderly unwinding of global imbalances, with a collapse in the dollar and a rise in global interest rates, and the implications this could have for the U.K. economy and financial stability. As elsewhere, the Fund's failure to foresee the possibility of a crisis of the kind that occurred starting in the United States limited the relevance of their advice to the U.K. authorities. It also limited staff's traction in pressing for extra data.

- Obviously a better analysis of potential risks in the U.S. would have helped greatly. But for the future it might also help if staff identified more than one global crisis scenario against which to test countries' financial stability.

50. To summarize, IMF staff did not foresee the risk of a crisis of the scale, nature, or severity of the one that occurred in the U.K., and the focus of successive Article IV missions was on other issues, notably the fiscal stance. Insofar as they saw a potential global crisis with possible implications for U.K. financial stability, it was not the one that occurred. Many specific financial stability concerns were noted, although some were missed: but in the end the conclusions were reassuring. A short review did not find publications by outside commentators or international institutions that were better than the IMF at identifying the risks in the U.K. context. This report suggests a number of specific lessons for the future, and a number of ways that the Fund could better exploit its institutional comparative advantages.

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