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DATA PROVISION TO THE IMF FOR SURVEILLANCE PURPOSES: RECENT ASSESSMENT AND A PRELIMINARY VIEW OF THE VALUE ADDED OF KEY DATA INITIATIVES FOR THE SURVEILLANCE OF THE "SUBPRIME" CRISIS

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Data Provision to the IMF for Surveillance Purposes: Recent Assessment and A Preliminary View of the Value Added of Key Data Initiatives for the Surveillance of the "Subprime" Crisis

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Abstract [1]

Data adequacy for economic analysis and policy making improved in the last decade, but remains an issue for many countries. The IMF and member countries have worked in recent years to implement key data initiatives aimed at informing economic analysis and policy. The most recent review of data provision to the Fund highlighted the importance of those initiatives, particularly of those in the areas of: (i) cross-country positions and exposures; and (ii) exposures of the financial sector. The review also highlighted that, although improvements are necessary in some dimensions, the emphasis should be on adapting and expanding current initiatives, rather than creating new ones. In that context, this paper makes a preliminary assessment of the value added of these initiatives to understand salient features of the "subprime" crisis. This preliminary assessment suggests that the initiatives have substantive value added regarding the assessment of cross-country exposures, moderate value added regarding the roots of the crisis, and lower value added regarding the liquidity channels observed in the crisis. Future work should focus on: (a) improving the coverage, timeliness, and frequency of those initiatives related to cross-country exposures; and (b) improving measurement of maturity mismatches in the financial sector, along with the measurement of off-balance sheet risk.

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I. BACKGROUND

1. **Data are crucial for economic analysis and policy making**. The Fund obtains data for its economic surveillance from: (i) countries, through the data provision framework; and (ii) from other sources, such as international organizations and private sector providers (e.g., high frequency data for financial sector surveillance).

2. **Data provision to the Fund for surveillance purposes is centered on the Articles of Agreement and relies on a cooperative approach** between members and the Fund. Some data are of mandatory reporting, a subset of which is monitored in the Table of Common Indicators Required for Surveillance (TCIRS, see Table 1), attached to every surveillance report to the Board. In practice, however, countries report much more data than the minimum required. For instance, countries provide an extensive range of macroeconomic data for inclusion in Statistics Department publications such as *International Financial Statistics*, the *Balance of Payments Statistics Yearbook*, *Direction of Trade Statistics*, and the *Government Finance Statistics Yearbook.*

3. **The Fund has worked with countries in recent years to implement several important data initiatives aimed at informing economic surveillance and policy making**. Beyond the establishment of the Special Data Dissemination Standards (SDDS) and the General Data Dissemination Standards (GDDS), these initiatives, which had their origin in the lessons of the crises of the 1990s, have focused on measuring: (i) positions and exposures of a country vis-à-vis the rest of the world (e.g., improvements in the area of International Investment Positions, creation of the Reserves Template, and creation of the Coordinated Portfolio Investment Survey); and (ii) positions and exposures of the financial sector (e.g., implementation of the Standardized Report Forms for monetary data—SRFs, and the collection of Financial Soundness Indicators—FSIs).

4. **The rest of this document is organized as follows**: Section II discusses the conclusions of the review of data provision to the Fund, with emphasis on those conclusions in the area of evolving data needs. Section III presents a preliminary view of the value added of key data initiatives in the period preceding the subprime crisis and points to data relevant for monitoring future developments. Section IV concludes.

II. THE 2008 REVIEW OF DATA PROVISION TO THE FUND FOR SURVEILLANCE PURPOSES

5. **The data provision framework is reviewed periodically. The last data provision review took place in May 2008** (2008 DPR henceforth). The review found that data adequacy for surveillance improved in the last decade, but that it remains an issue in many countries: close to half of IMF staff reports note data deficiencies—albeit of varying seriousness—that affect surveillance. The review also found that current data initiatives remain appropriate, but that improvements in some areas are necessary to keep pace with emerging data needs (see next section).

6. **The 2008 DPR found that the focus of ongoing data initiatives has been appropriate and that priority should remain on moving these initiatives forward** and adapting them, rather than creating new ones. Data on positions and exposures across domestic sectors (particularly of the financial sector) and vis-à-vis the rest of the world are critical in assessing vulnerabilities, and have gained further prominence in light of recent global economic developments.

7. **The 2008 DPR also supported specific work that the Fund has been conducting** and provided comments and guidance, particularly in the following two areas:

A. Initiatives Related to the Measurement of Positions and Exposures vis-à-vis the Rest of the World

8. **Monitoring countries' IIP has become more important for Fund surveillance. In this context**:

- Many Directors stressed at the conclusion of the 2008 DPR the importance of data on cross-border and intersectoral exposures and risks in advanced economies.

- Directors decided in the 2008 DPR to include the IIP in the TCIRS. Since the IIP was already of mandatory reporting—subject to the member's capacity to do so—this measure does not constitute a new data requirement. It is expected, however, that this measure will improve the monitoring of IIP data since the TCIRS would provide a periodic reporting of the frequency and timing with which IIP data are reported.

- The 2008 DPR also highlighted the need to: (i) expand country coverage of IIP data (about 80 economies do not yet report IIP data for the Balance of Payments Statistics Yearbook); (ii) move forward with the work program on sovereign wealth funds (SWFs)[2]; (iii) improve our measurement of valuation changes (particularly those related to exchange rate movements); (iv) improve our measurement of the geographic breakdown of positions. The planned Coordinated Direct Investment Survey (CDIS) is expected to be a useful contribution to achieve the last two objectives (along with the already existing Coordinated Portfolio Investment Survey, CPIS).

9. **The reporting of international reserves and foreign currency liquidity has significantly improved with the introduction of the Reserves Template, but some**

[2] Many Directors supported the various data initiatives the Fund is undertaking as part of a wider effort to facilitate and coordinate work on a set of voluntary principles for SWFs, while, at the same time, many Directors emphasized that data initiatives should not run ahead of collaborative and voluntary efforts to identify such principles.

refinements are necessary. In particular, the Fund agreed in the 2008 DPR to expand the data required from countries in order to capture pressures on reserves coming from central bank's liabilities and derivatives linked to the exchange rate but settled in the domestic currency.

10. **The 2008 DPR also noted the importance of data on currency composition of international reserves (COFER data) for surveillance over the global economy and reserve currency economies.** In this context, it encouraged countries that do not report to the initiative on confidential reporting of currency composition of official foreign exchange reserves (COFER) to join it.

B. Initiatives Related to the Measurement of Intersectoral Positions and Exposures

11. **Financial systems now transfer much more risk than in the past**, on account of: (i) more sophisticated financial instruments (notably complex financial derivatives); (ii) deeper linkages between banks and other financial institutions (e.g., hedge funds)—which are usually less regulated; and (iii) stronger cross-country liquidity and risk spillovers.

12. **Immediate priorities are to continue expanding reporting and coverage of the SRFs**. Many countries are yet to adopt SRF reporting and, even in countries that have, there remains significant scope for increasing coverage of financial institutions.

13. **It is also important to move existing initiatives forward in the area of financial sector stability**. In this regard, the recent introduction of Supplementary Data Report Forms for monetary statistics (SDRFs) and the decision to move the initiative on Financial Soundness Indicators to a regular cycle are steps forward.[3]

III. Performance of Key Data Initiatives for the Surveillance of the "Subprime" Crisis

A. Salient Features of the Crisis: A Preliminary View

14. **While it is still much too early to fully characterize the current crisis and/or draw lessons from it, some preliminary considerations can help us assess the value added of key data initiatives for surveillance**. Developments so far suggest the following salient features of the crisis:

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[3] The SDRFs are a set of supplementary data aimed at complementing the reporting of the SRFs. A prototype format was included in the *Monetary and Financial Statistics: Compilation Guide* (April 2008) and includes data on maturity composition of assets and liabilities, financial derivatives, off-balance sheet items, and income statements. The FSIs initiative was created with the objective of compiling a set of financial indicators that were largely comparable across countries. The first set of indicators was compiled using 2005 data and the initiative will become a regular exercise in 2009.

- *The subprime crisis has exhibited substantive cross-country exposures*: The period preceding the crisis was characterized by large current account deficits in the US, with corresponding surpluses in oil-exporting countries and in Asia. The crisis has also had substantive direct spillovers. In particular, the financial sectors of many countries—mostly European—have been directly exposes to losses associated with their holdings of US assets.

- *The roots of the crisis were in the US financial system*. The following factors have been at the center of the crisis: (i) pervasive weaknesses in the underwriting of mortgage loans, perhaps associated with the growth of the "originate-to-distribute" model, which lead to a rapid increase in lending to households; (ii) the complexity of mortgage-related structured products, which may have reduced the capacity of investors to fully appraise the risk they were taking and lead to excessive reliance on rating agencies; (iii) the opaque nature of over-the-counter market where structured products were being traded; (iv) the large amount of leverage and heavy dependence on short-term funding; and (v) the risk exposures of many financial institutions to off-balance sheet vehicles that were not transparent to counterparties or the market in general.

- *The crisis has displayed unforeseen connections in financial markets through liquidity channels*: the interbank markets froze as a result of counterparty uncertainty (and perhaps also due to uncertainty about banks' future own liquidity needs) and providers of short-term funding withdrew from markets unrelated to subprime mortgages.

15. **In the rest of this section we focus on how some key data initiatives (IIP, CPIS, SRFs) help Fund surveillance better understand the salient features highlighted above**. As we argue below, these initiatives seem to have substantive value added regarding the assessment of cross-country exposures, moderate value added regarding the roots of the crisis, and lower value added regarding the liquidity channels. The analysis below focuses primarily on the period preceding the crisis (i.e., 2002-2006) since we are particularly interested on the value added of the initiatives for Fund surveillance. Nevertheless, we also devote some attention to what information embedded in the data initiatives under study will be important to monitor in the near future.

B. Assessing Cross-Country Exposures: The value added of IIP data and the CPIS

16. **The current crisis was preceded by an episode of large and growing global imbalances (Figure 1)**. An already high US current account deficit increased continuously between 2002 and 2006, with corresponding surpluses in oil-exporting countries and Asia. The Euro Area and Switzerland also exhibited current account surpluses, albeit more moderate, while the UK had current account deficits.

17. **The direct international exposures to the US have, however, exhibited a pattern that contrasts sharply with the current account patterns**. In particular, European financial institutions have been hit much harder than financial institutions in Asian or in oil-exporting countries.[4]

18. **IIP and CPIS data shed important light on the contrasting pattern between current account developments and exposures to US financial assets**. As the upper panel of Figure 2 describes, the US current account deficit was largely financed by the issuance of debt securities after 2001 (these securities were issued both by the US government and by private entities). The lower panel of Figure 2 shows that European countries were acquiring large amounts of these securities, much larger than, for instance, Japan even though the latter had a much bigger current account surplus (Figure 1) (see, however, next paragraph for an important qualification).[5]

19. **The IIP and CPIS data do not, however, tell the full story**. First, key countries—such as China and several oil-exporting countries—are not covered in the CPIS. Second, countries that report to the CPIS do not report the geographical distribution of their reserve assets. So, the build up of exposures via reserve assets is not captured (e.g., so, the CPIS does not allow us to fully assess the exposure of countries that accumulated reserves in the period under study, such as Japan).[6] Third, the CPIS does not disclose information on the sectoral composition from the liability side (e.g., we know ex-post that European banks were acquiring liabilities issued by the US private sector, but it was not possible to know that ex-ante by just looking at the CPIS data).[7] Fourth, the CPIS covers only portfolio investment.

20. **Based on this experience, future work on the CPIS should focus on continuing expanding the country coverage and capturing the composition and sectoral allocation of the assets**. The need of having information on both sectoral allocation and geographical allocation of the assets has been an interesting feature of this crisis. For instance, assets associated to the US banking sector have lost substantial value, while US government securities have been seen as safe assets and, hence, gained in value.

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[4] For instance, as of end-September 2008 European banks had posted about USD 226 billion in writedowns, while Asian banks/firms had posted much lower writedowns (about USD 24 billion). See IMF's *Global Financial Stability Report*, Oct. 2008 (Box 1.3).

[5] Data for China and key oil-exporting countries are not available. Data for Russia are available, but the amounts are quite small and, therefore, not shown in Figure 2.

[6] This shortcoming has, however, a bright side in this case. Since countries do not list their geographical distribution of reserve assets, then the assets listed in the CPIS are likely to be those held by the private sector.

[7] The CPIS, however, already provides useful information about the sector of the asset holder. The information is, however, available only for a subset (about 50 countries) of all CPIS reporters.

C. Assessing Financial Sector Exposures: The value added of SRFs data

21. **As mentioned above, the current crisis was preceded by an episode of rapid lending to households** (paragraph 14, second bullet)**,** particularly by financial nondepository corporations. The data collected by the Fund via the SRFs are particularly well suited to illustrate these types of intersectoral exposures and can be used to populate the data needed for the Balance Sheet Approach in surveillance. [8] The data for the US—which has very good coverage—shows the following developments for the period 2001-2006[9]:

- Lending to "other resident sectors" (which includes households) grew by almost 30 percent of GDP (Figure 3). Lending to the nonfinancial corporations as a fraction of GDP declined in this period.

- Lending by both depository and nondepository corporations grew fast, but much faster in the latter group (Figure 4).

22. **While the microeconomic factors at the root of the crisis are, naturally, not expected to be reflected in the SRFs data, there are some aggregate developments that could be captured but seem to be missing.** In particular:

- The SRFs data do not reflect the presence of spillovers from the nondepository corporations to the depository corporations. The current crisis has shown that depository corporations where highly exposed to nondepository corporations, but the SRFs only show a small increase in direct exposures between 2001 and 2006. However, it is difficult to consider this a failure of the SRFs given that the two main channels of spillovers observed so far—via undrawn credit lines and reputational—are difficult to capture using balance sheet data (which are the source data of the SRFs).

- The SRFs data do not have sufficient information on the maturity structure of assets and liabilities, which reduces their value added in terms of assessing maturity mismatches. The IMF recently introduced a set of Supplementary Data Report Forms (SDRFs) which are designed to capture maturity information along with data from income statements and off-balance sheet data.

- The SRFs data do not show the complex interactions that have occurred within the other financial corporations. This may be a lesser problem for other countries, but

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[8] See Mathisen and Pellechio (2006) Using the Balance Sheet Approach in Surveillance: Framework, Data Sources, and Data Availability, IMF WP/06/100.

[9] The SRFs data are compiled by IMF staff from the US flow of funds data published by the Federal Reserve.

has turned out to be a relevant problem in the US given the complexity of its financial system (e.g., interactions between investment banks and hedge funds).

D. Monitoring Future Developments

23. The initiatives discussed above may also prove useful to monitor future developments. For instance:

- *Measuring valuation changes*: Comparing BOP and IIP data will be very important in the near future to assess how large valuation changes have been and how they have affected countries external positions. In this context, having IIP data at higher frequency—ideally quarterly—would be very valuable.

- *Monitoring changes in countries' investment portfolios*: The current crisis may produce large changes in countries' investment portfolios (e.g., across asset classes, currency of denomination, or geographical allocation). All these changes may have (or are already having) important consequences for assets prices, currencies, and countries. CPIS data, and COFER data, can provide valuable insights on these issues, but, as mentioned above, these data would not be able to provide the whole picture. Other complementary datasets will likely prove important for monitoring changes in investment portfolios, particularly the BIS data on banking statistics.

- *Monitoring exposures of the government and the central bank to the financial sector*: Many governments and central banks have now pledged support to their financial sectors. The size and trajectory of these positions will constitute an important piece of information for macroeconomic analysis, and the SRFs provide the necessary data.

IV. Conclusions

24. **Data are essential for economic analysis and policy making, and the current crisis is a reminder.** The increasing integration and complexity of the world economy and, notably, of its financial markets creates a need for data that can describe the interlinkages among countries and sectors.

25. **The preliminary views expressed above suggest that key data initiatives that the Fund and member countries have advanced in recent years have value added for economic analysis and policy making**. For instance, IIP and CPIS data seem to have substantive value added to understand the contrasting pattern between current account developments, on the one hand, and observed exposures to US financial assets, on the other. Also, the SRFs data help to understand the build up of vulnerabilities in the financial sector. In particular, SRFs data show well the rapid expansion of lending towards households and the increasing role that nondepository corporations played in channeling resources towards households.

26. **Nevertheless, further work is needed to expand the value added of these datasets**. In particular, (i) the coverage of the CPIS needs to be expanded and information is needed on the sectoral composition of the issuers of the liabilities; (ii) it would be important to improve the periodicity and/or timeliness of CPIS and IIP data: lowering the lag of reporting of CPIS data (currently about 11 months) and increasing the frequency in the reporting of IIP data (currently most countries report data at an annual frequency) would be ideal; (iii) The SRFs need to be improved along the maturity dimension and along the off-balance sheet dimension (this may be achieved soon with the implementation of the SDRFs).

27. **As the crisis is still unfolding, the preliminary assessment made here should be revised and/or expanded once the lessons from the crisis had been fully drawn.**

TABLE 1. TABLE OF COMMON INDICATORS REQUIRED FOR SURVEILLANCE

	Date of latest observation (For all dates in table, please use format dd/mm/yy)	Date received	Frequency of Data[7]	Frequency of Reporting[7]	Frequency of Publication[7]	Memo Items:[8]	
						Data Quality – Methodological soundness[9]	Data Quality – Accuracy and reliability[10]
Exchange Rates							
International Reserve Assets and Reserve Liabilities of the Monetary Authorities[1]							
Reserve/Base Money							
Broad Money							
Central Bank Balance Sheet							
Consolidated Balance Sheet of the Banking System							
Interest Rates[2]							
Consumer Price Index							
Revenue, Expenditure, Balance and Composition of Financing[3] – General Government[4]							
Revenue, Expenditure, Balance and Composition of Financing[3] – Central Government							
Stocks of Central Government and Central Government-Guaranteed Debt[5]							
External Current Account Balance							
Exports and Imports of Goods and Services							
GDP/GNP							
Gross External Debt							
International Investment Position[6]							

[1] Includes reserve assets pledged or otherwise encumbered as well as net derivative positions. **After December 31, 2008,** this footnote should read: Any reserve assets that are pledged of otherwise encumbered should be specified separately. Also, data should comprise short-term liabilities linked to a foreign currency but settled by other means as well as the notional values of financial derivatives to pay and to receive foreign currency, including those linked to a foreign currency but settled by other means.
[2] Both market-based and officially-determined, including discount rates, money market rates, rates on treasury bills, notes and bonds.
[3] Foreign, domestic bank, and domestic nonbank financing.
[4] The general government consists of the central government (budgetary funds, extra budgetary funds, and social security funds) and state and local governments.
[5] Including currency and maturity composition.
[6] Includes external gross financial asset and liability positions vis-à-vis nonresidents.
[7] Daily (D); weekly (W); monthly (M); quarterly (Q); annually (A); irregular (I); and not available (NA).
[8] These columns should only be included for countries for which Data ROSC (or a Substantive Update) has been published.
[9] Reflects the assessment provided in the data ROSC or the Substantive Update (published on ..., and based on the findings of the mission that took place during...) for the dataset corresponding to the variable in each row. The assessment indicates whether international standards concerning concepts and definitions, scope, classification/sectorization, and basis for recording are fully observed (O); largely observed (LO); largely not observed (LNO); not observed (NO); and not available (NA).
[10] Same as footnote 7, except referring to international standards concerning (respectively) source data, assessment of source data, statistical techniques, assessment and validation of intermediate data and statistical outputs, and revision studies.

Figure 1: Current Account Patterns
(percent of US GDP)

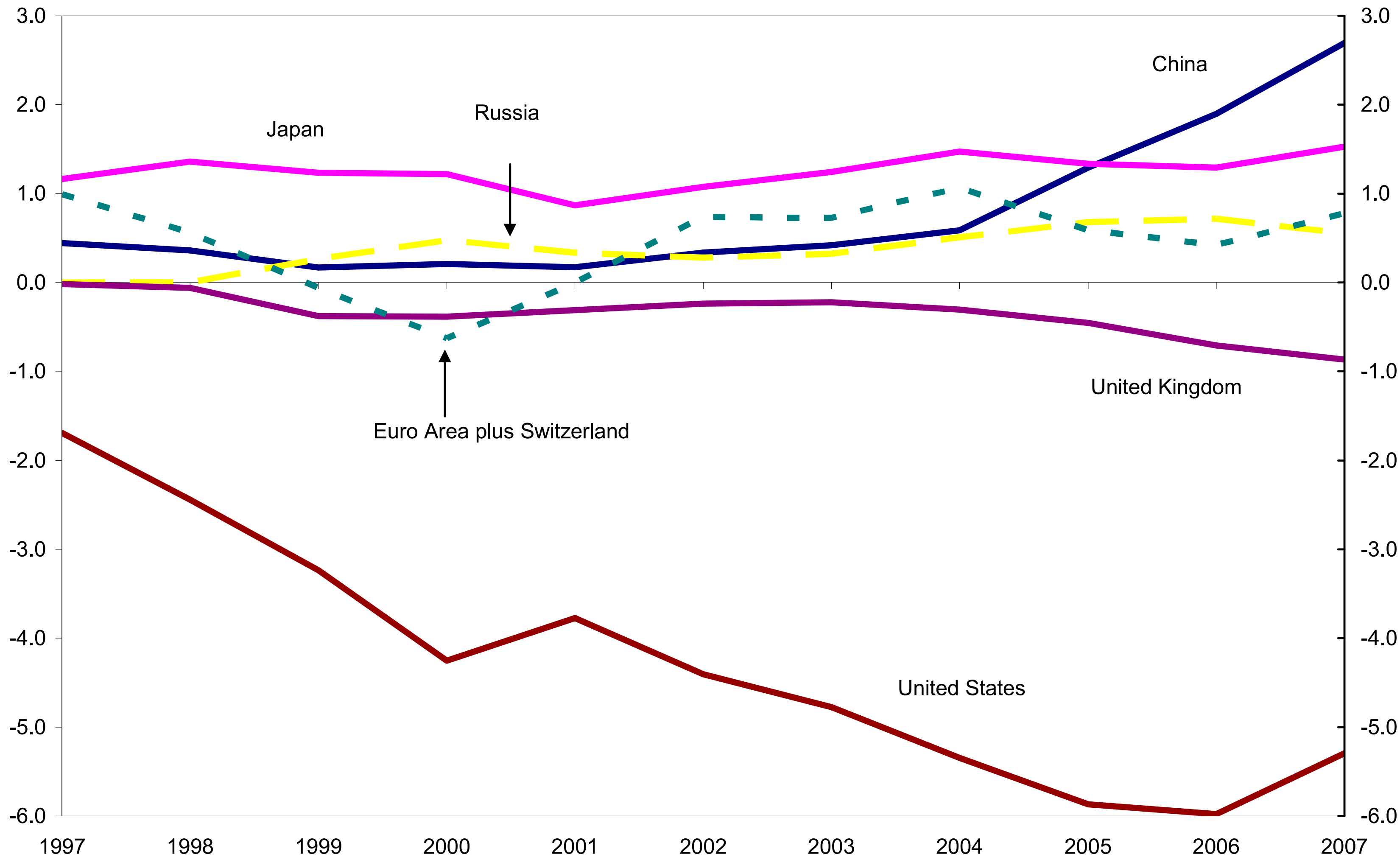
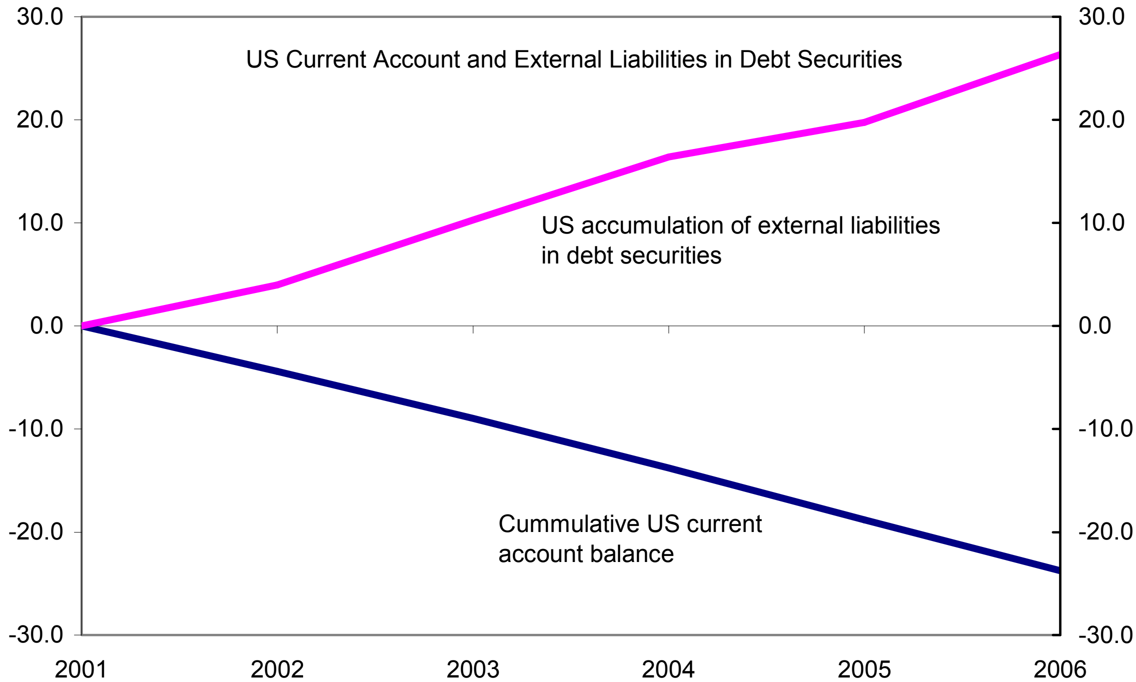
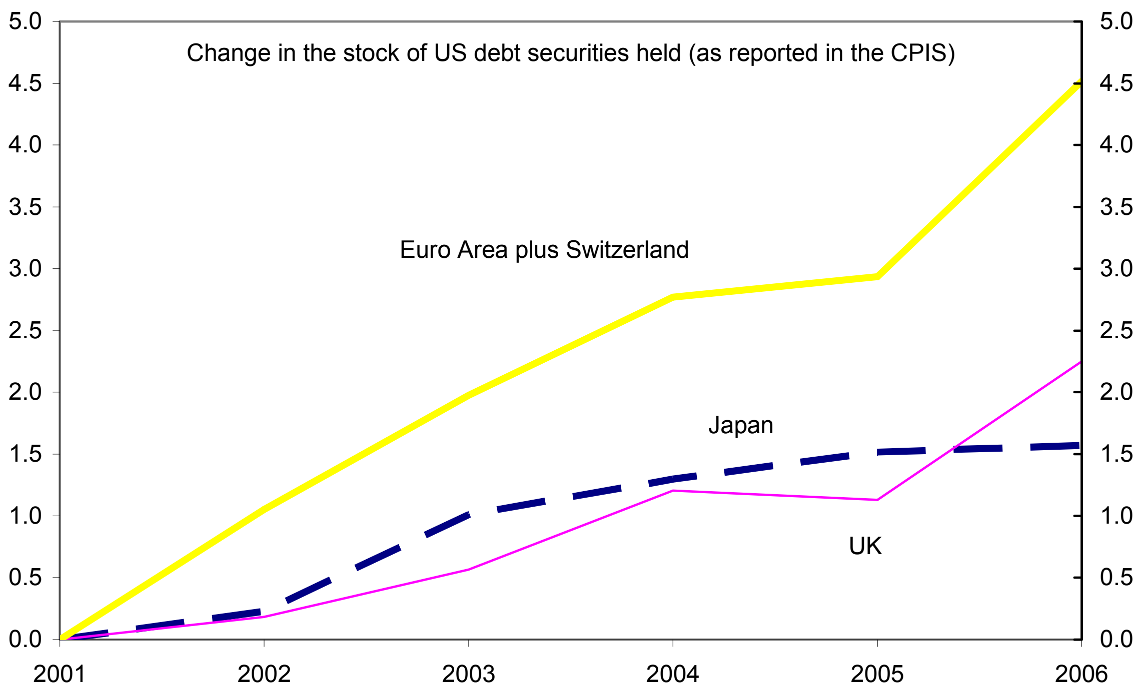


Figure 2. United States' Current Account and Accumulation of External Debt (percent of US GDP)





Source: CPIS, US IIP, US BOP
Data for the Euro area includes the original EU-12 members only.

Figure 3. United States: Claims of the Financial Sector on the Domestic Private Nonfinancial Sector, by destination (% of GDP)

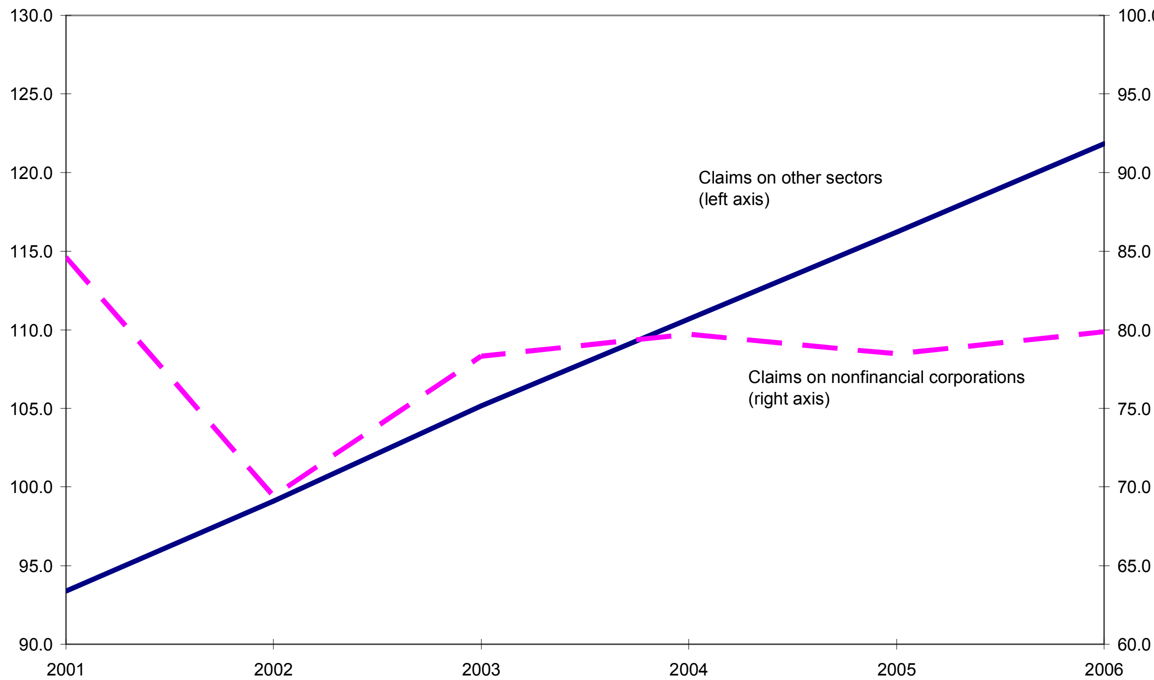


Figure 4. United States: Claims of the Financial Sector on the Domestic Private Nonfinancial Sector, by origin (% of GDP)