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in the Asian-Pacific Region:
Deepening Economic Interdependence and Risk Management
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**Challenges and Risks Arising
from Globalization of
Financial and Capital Markets:
Statistical Implications**



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Disclaimer

- **The views expressed are those of the presenter and do not necessarily reflect the views of the IMF or IMF policy.**

Outline

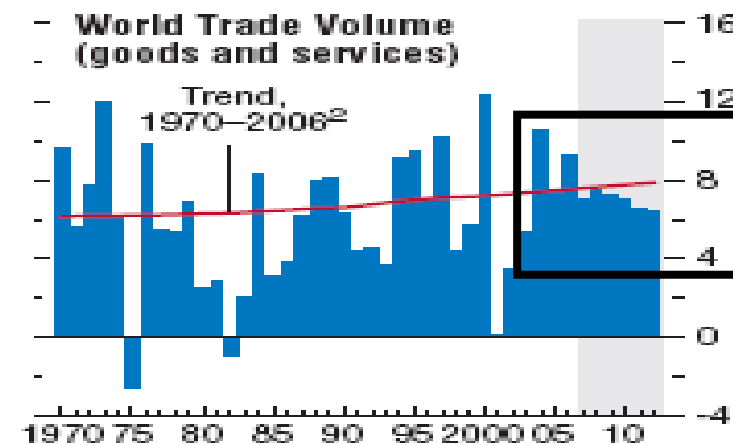
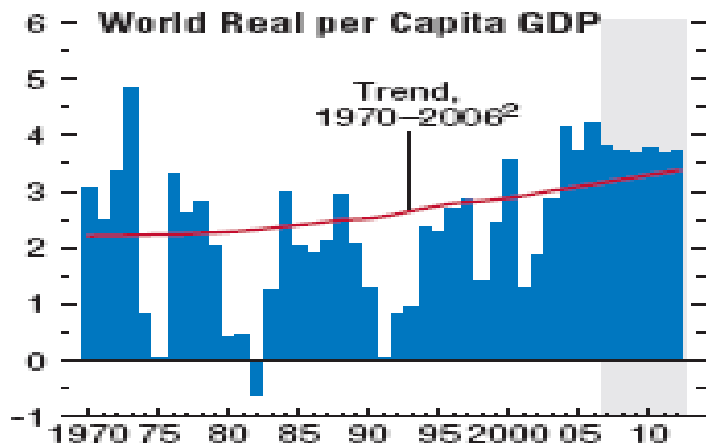
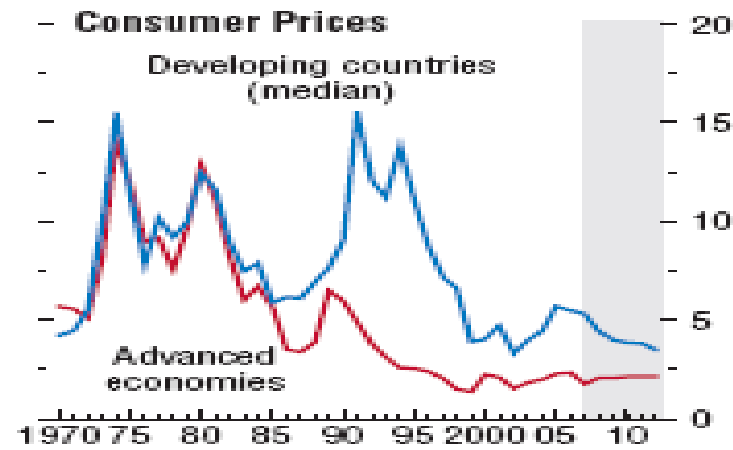
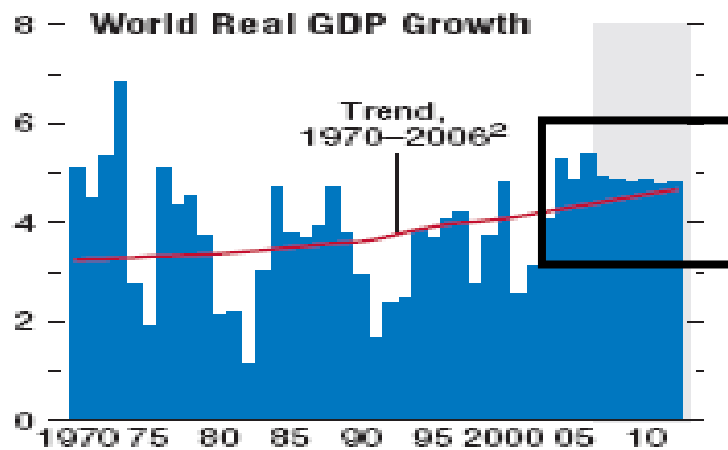
- I. Globalization, an overview
- II. Globalization of financial and capital markets
- III. Statistical issues emerging from globalization of financial and capital markets
- IV. Statistical needs emerging from globalization of financial and capital markets
- V. Response by the IMF to statistical issues arising from globalization
- VI. Framework that integrates various IMF data initiatives
- VII. Concluding remarks

I. Globalization: an overview

Unprecedented increase in the cross-border movement of goods, services, income, financial flows, and people.

- Increase was driven by:
 - major advances in ***communication technology***,
 - a virtually ***borderless financial market***,
 - ***deregulation*** of economies, and
 - ***employment*** opportunities in certain economies.

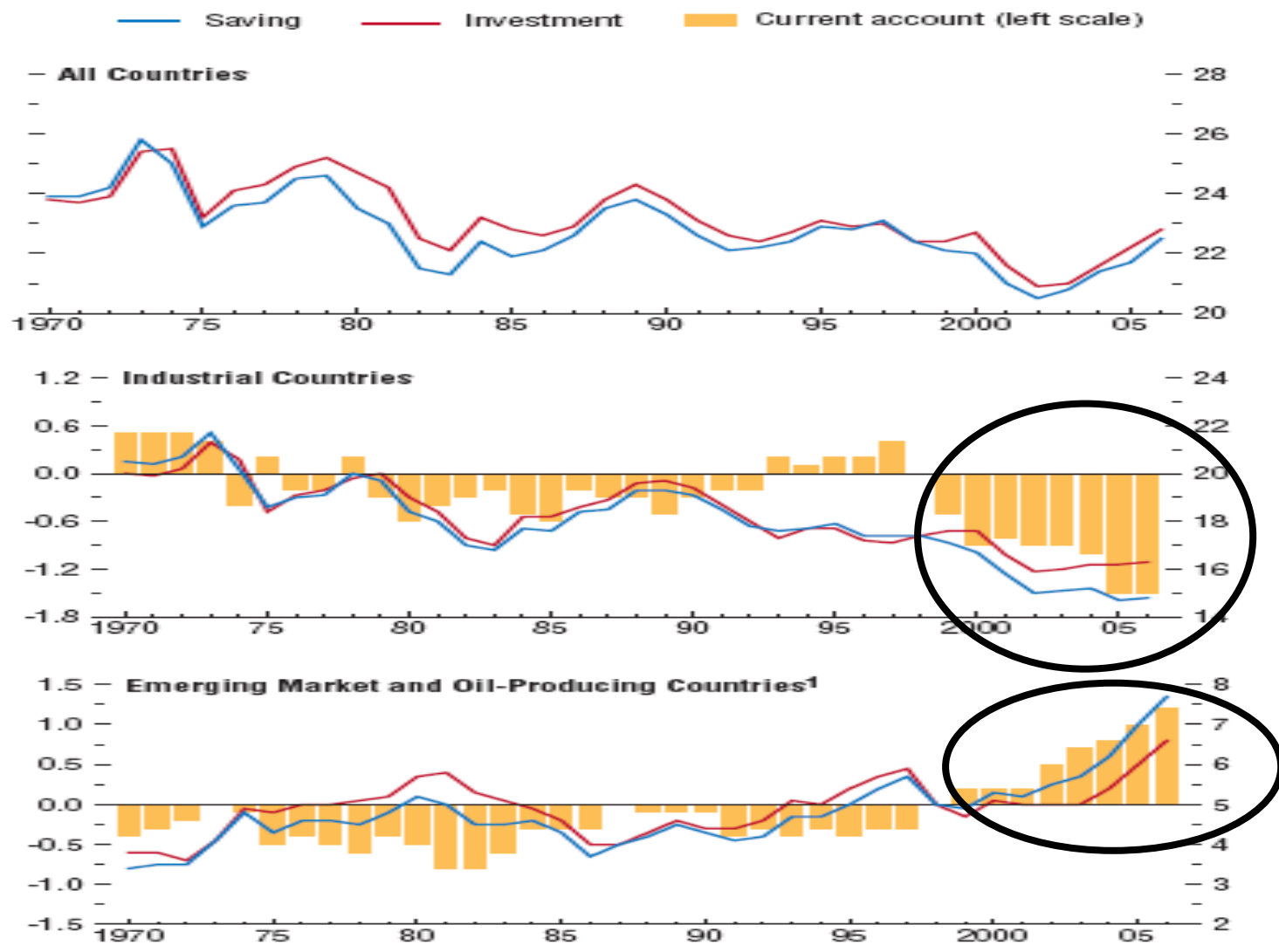
- ***Impact of Globalization***
 - Unprecedented level of country ***interdependency***.
 - Higher ***growth*** paralleled by increased ***vulnerability*** of domestic economies as evidenced by financial crises that spread across borders.



¹Shaded areas indicate IMF staff projections. Aggregates are computed on the basis of purchasing-power-parity (PPP) weights unless otherwise noted.

²Average growth rates for individual countries, aggregated using PPP weights; the aggregates shift over time in favor of faster-growing countries, giving the line an upward trend.

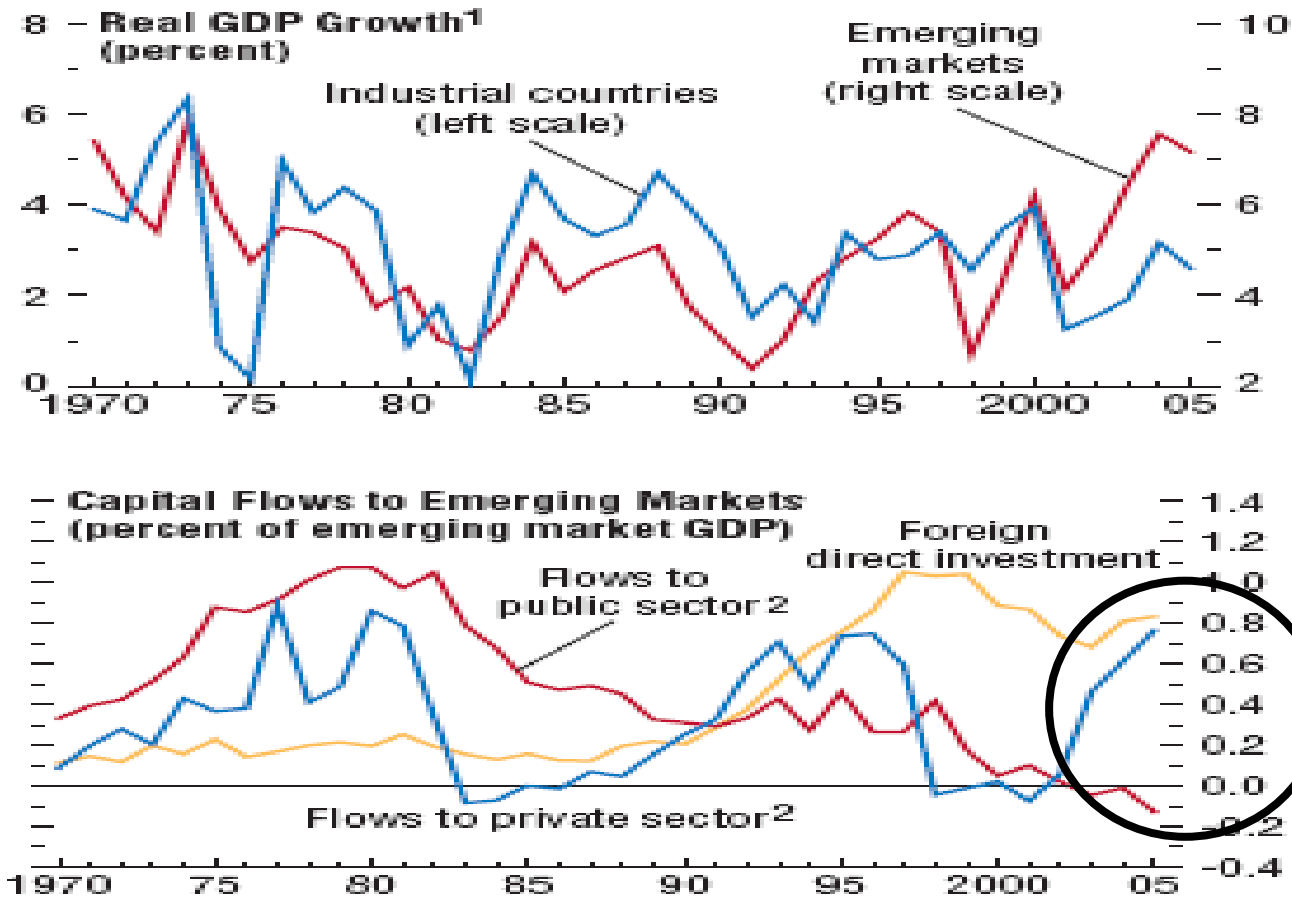
(Annual percent change unless otherwise noted)



Sources: OECD Analytical Database; World Bank, *World Development Indicators* (2006); and IMF staff calculations.
¹Includes Norway.

(Percent of world GDP)

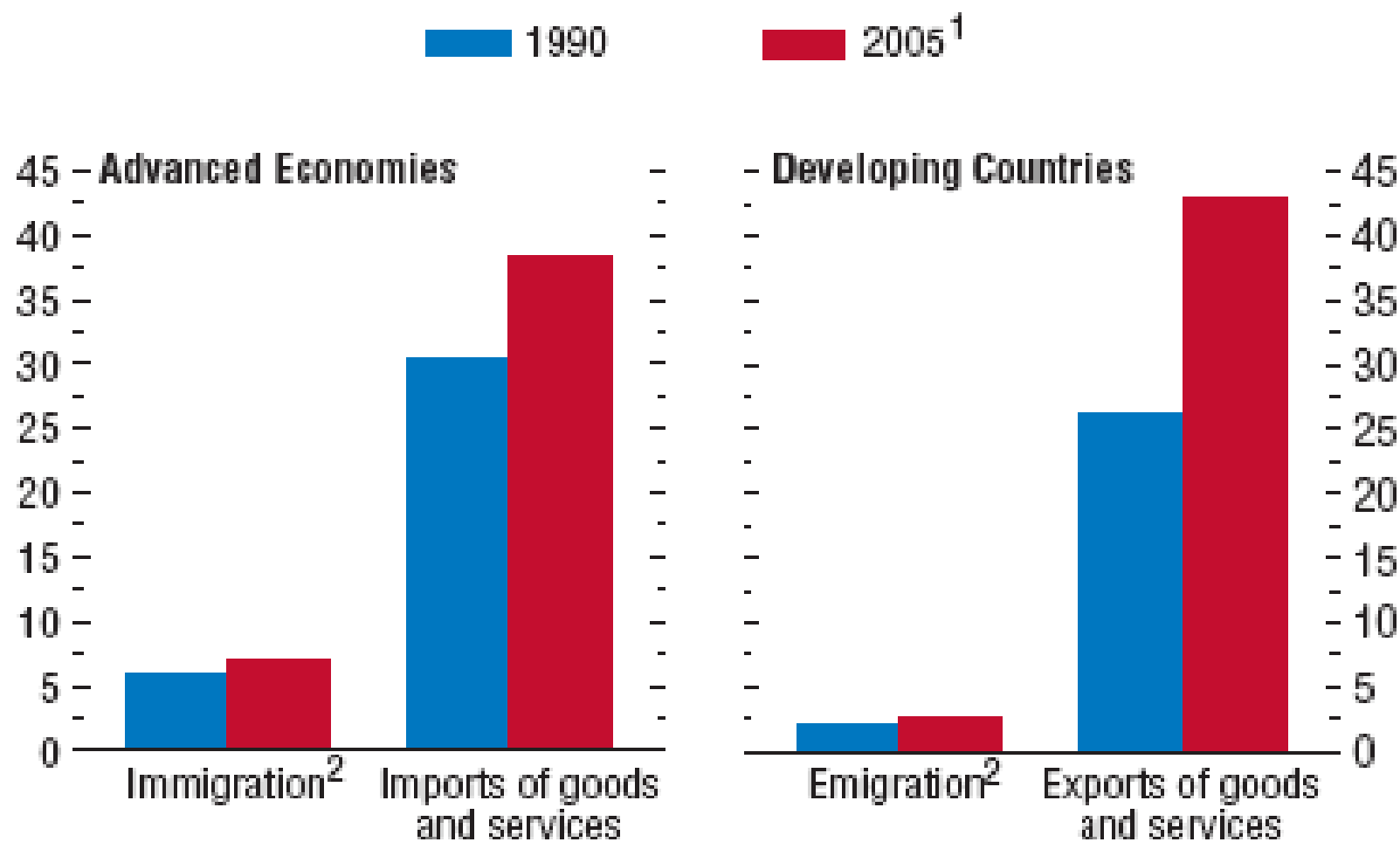
Business and Capital Flow Cycles in Emerging Markets



Sources: World Bank, *Global Development Finance*; and IMF staff calculations.

¹The correlation coefficient between industrial countries and emerging markets growth is 0.40.

²Excluding foreign direct investment.



(Percent of labor force and GDP, respectively)

Sources: Docquier and Marfouk (2005); OECD, International Migration Data; U.S. Census Bureau; and IMF staff calculations.

¹2000 data for immigration and emigration.

²Hong Kong SAR, Greece, Israel, New Zealand, Singapore, and Taiwan Province of China are not included in average immigration due to data limitations. Russia and Slovak Republic are not included in average emigration due to data limitations.

II. Globalization of financial and capital markets

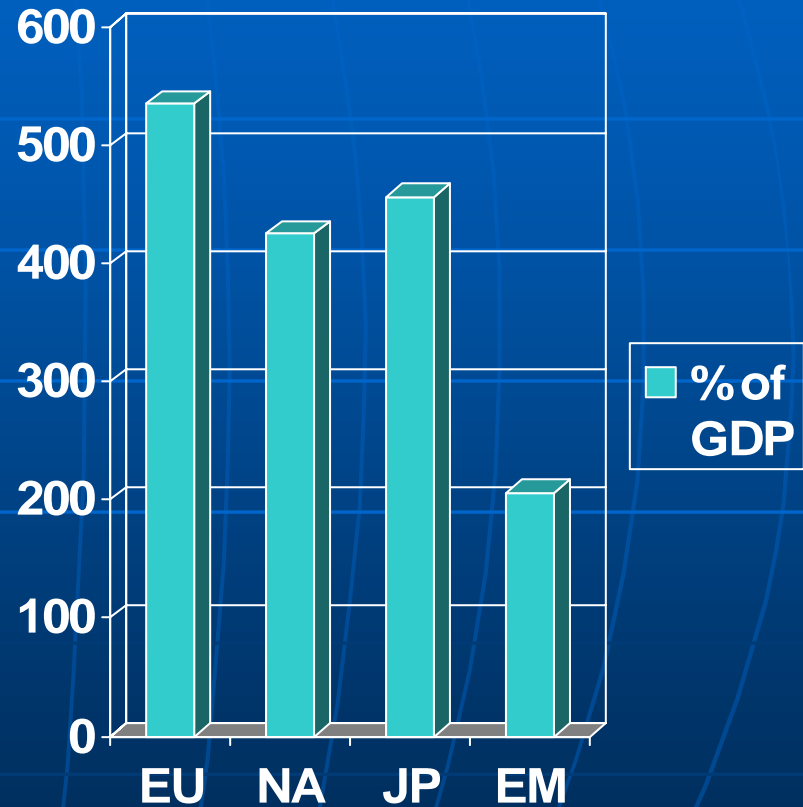
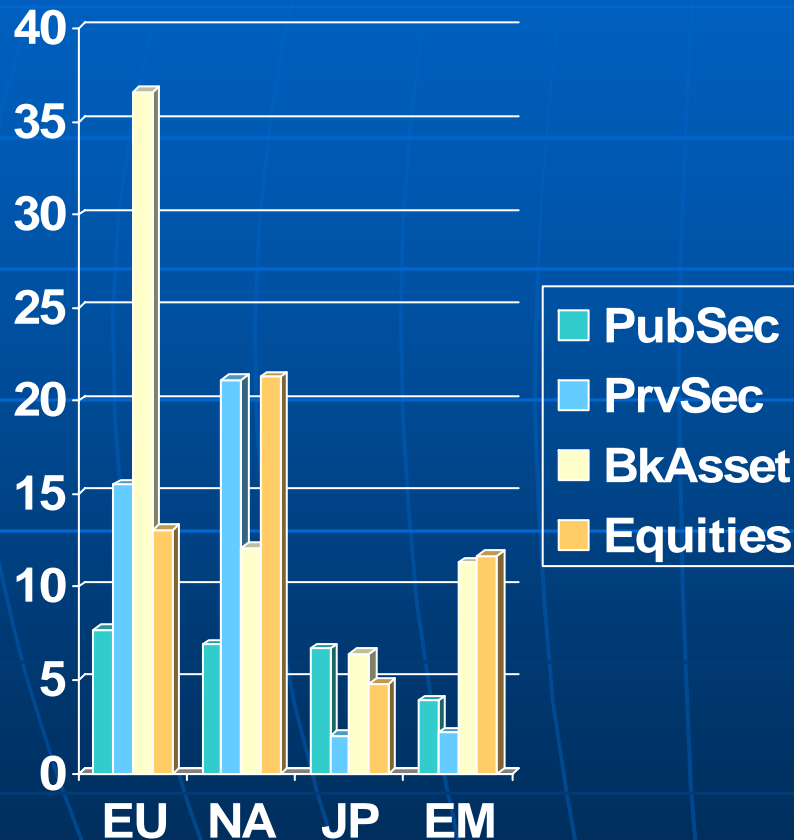
- In recent years, world financial flows have grown at rapid rates and faster than global trade.
- There has been a shift in the composition of flows from:
 - the public to the private sectors,
 - banks to nonbank enterprises, and
 - loans to securities.

II. Globalization of financial and capital markets

- High liquidity and instrument innovation has led to rapid credit growth, increasing household leverage and risk exposure as well as credit risk for financial institutions.
- A build up in private-to-private cross-border borrowing, has increased corporate sector exposure.
- Increasing exposure of foreign investors in emerging markets local currency assets.
- Structured products such as mortgage-backed securities and collateralized debt obligations have become quite prevalent.

Size of the Capital Markets (2006)

US\$ Trillion
s



Source: IMF Global Financial Stability Report

II. Globalization of financial and capital markets

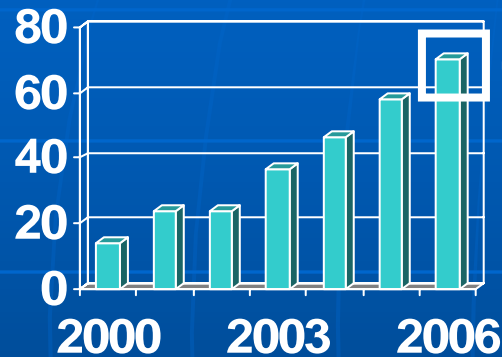
- ***New financial instruments and innovations***
 - **Growth of securitization:** various types of securitized assets are originated in one place and distributed widely using an “originate and distribute” business model.
 - **Complex structured products:** various types of risks (e.g. credit, market, volatility) are sliced and diced to the desires of specific types of investors.
 - **Financial institutional arrangements:** Various relationships between regulated and less- or unregulated entities are growing in mature and emerging market countries.
 - **Growth in new investor classes** (hedge funds, private equity, and sovereign wealth funds (SWFs) : Rapid growth of new investor groups that are active globally.

II. Globalization of financial and capital markets

- ***Rapid growth in derivatives trades***
 - **Derivatives** can sometimes result in opaqueness and lack of clear determination of where ownership of risks rests and the actual magnitudes of exposure.
 - Widespread use of **OTC derivatives** which involve significantly higher credit and counterparty risk and are much less transparent than exchange traded derivatives, making it harder for participants and regulators to understand potential risks and vulnerabilities.
 - Some countries have been recipients of flows into domestic markets due to the **carry trade**. such trades are often conducted via derivatives positions.
 - **Local emerging market exposure** via on and offshore, and derivative transactions.

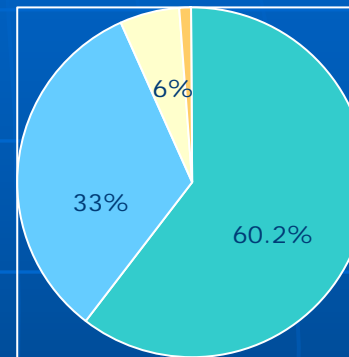
Derivatives (notional amounts)

US\$ Trillion



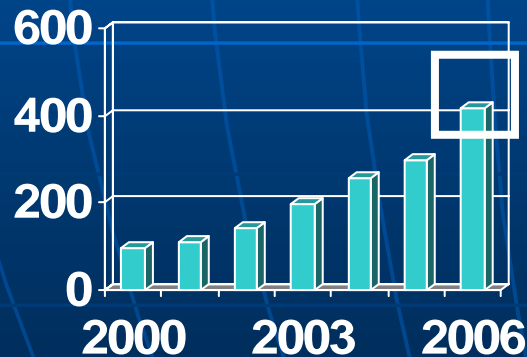
ETD

Global Markets



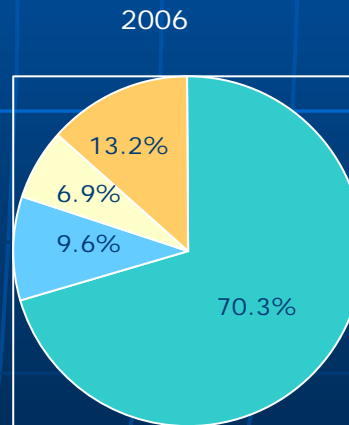
- N. Amer.
- Europe
- Asia-Pacif.
- Other

US\$ Trillion



OTC

G10 + Switzerland



- Int. Rate
- Forex
- CreDfSW
- Other

Source: Bank of International Settlements

II. Globalization of financial and capital markets

- ***Foreign direct investment is becoming a crucial factor in the worldwide process of industrial restructuring and the development of global industries.***
 - Direct investment in holding companies or special purpose vehicles (e.g., in international financial centers) may conceal the full economic impact upon the ultimate beneficiary countries.
 - Growth in investment income flows (reinvested earnings, other direct investment income, other investment income) associated with the growth of international investment.
 - The potential of reinvested earnings as a self-financing source of direct investment. But concerns that instability might be created by the reversal of such reinvestments.

II. Globalization of financial and capital markets

- ***Movement of persons abroad for employment is an important feature of the globalization process.***
 - Growth of labor income resulting from short-term migration: Remittances are critical contributions to locally-driven private sector growth and poverty reduction.
- ***Significant increases have occurred in the holdings of reserves by some countries as “insurance” against financial shocks.***

III. Statistical issues emerging from globalization of financial and capital markets

- ***While progress has been made on the balance sheet approach (BSA) and its application, large data gaps remain in the household and corporate sectors that could hide balance sheet mismatches.***
 - Only for 10 out of 27 countries identified as having medium or high vulnerabilities, sufficient balance sheet data are available. Overall, 40 emerging and other developing countries have sufficient information to do a Balance Sheet vulnerability analysis (see: "*Using the Balance Sheet Approach in Surveillance, Framework, Data Sources and Data Availability*," Mathisen, Johan, and Pellechio, Anthony J., IMF WP 06/100).

III. Statistical issues emerging from globalization of financial and capital markets

- ***There is limited information on risk exposures***
 - Micro data on household balance sheets is limited or non-existent in many countries.
 - The extent to which the non-bank financial sector is exposed to household vulnerabilities is not well understood.
 - In the case of corporates, there is no systematic collection of data on cross-border private-to-private financing.
 - Information on the inter-linkages within the financial sector (i.e., banks to non-banks) needs to be strengthened.

III. Statistical issues emerging from globalization of financial and capital markets

- ***In many countries information on financial institutions is patchy, and we know little about off-balance-sheet exposures or links with mature markets.***
 - In many countries where household credit expansion is a critical concern, the authorities have little information on the foreign currency mismatch of the household sector, households' debt servicing costs, loan to value ratios, and mortgage equity withdrawal, all of which would provide valuable information on how consumption might behave in the wake of a house price crash.
 - Data on corporate profitability and gearing ratios are either sparse or dated.

III. Statistical issues emerging from globalization of financial and capital markets

- ***Official statistics on foreign participation in domestic markets could well understate overall stakes in local currency assets (1)***
 - Exposures in local currency markets are increasingly indirect exposures via offshore and derivative transactions which are not captured in data collected by domestic regulators.
 - These transactions are frequently being conducted in the OTC market.
 - It may be difficult to monitor whether locally-issued debt instruments are being held by residents or nonresidents (which would then be treated as external debt).

III. Statistical issues emerging from globalization of financial and capital markets

- ***Official statistics on foreign participation in domestic markets could well understate overall stakes in local currency assets (2)***
 - Data on bilateral cross border derivatives transaction or exposures are generally not available.
 - Data on the magnitude of carry trades are not available (and indeed there is not clear agreement on what exactly constitutes a carry trade).

IV. Statistical needs emerging from globalization of financial and capital markets

- ***More information is needed on (1):***
 - Balance sheets, and on the links with financial account transactions and income.
 - The institutional sector of transactors, the maturity of instruments, and the domestic/foreign currency breakdown of instruments.
 - New instruments (e.g., financial derivatives).
 - Where relevant, on activities via holding companies and special purpose vehicles; and on economic impact of foreign direct investment (e.g., ultimate beneficiary owner or affiliate).

IV. Statistical needs emerging from globalization of financial and capital markets

➤ More information is needed on (2):

- Positions by partner country, e.g., portfolio and reserve holdings, to assess investment allocation.***
- Reserves and external debt for debt sustainability analysis.***
- Debt relief arrangements.***
- The soundness of financial systems.***

IV. Statistical needs emerging from globalization of financial and capital markets

- ***Improved information is needed on:***
 - (1) Income***
 - The components of investment income, and concordance with the component detail of corresponding financial transactions and positions.
 - Data on labor income, including bilateral data, to contribute to the analysis of remittances.

IV. Statistical needs emerging from globalization of financial and capital markets

- ***Improved information is needed on:***
 - (2) Current and Capital Transfers***
- “Remittances” (both labor income and transfers). Need for improved definitions in the BOP framework and development and sharing of information on best practices for compiling data in this difficult area of measurement.

V. Response by the IMF to statistical issues arising from globalization

Response at three levels:

- Methodology: Update of Manuals and of Compilation Guides
- Data Quality Initiatives: SDDS/GDDS and Data Module ROSC Reviews
- Data Initiatives at the International Level

V. Response by the IMF to statistical issues arising from globalization:

➤ Update of Manuals

- 1993 SNA
- Balance of Payments Manual
- Compilation Guide on Remittances

➤ Data Initiatives

- International Investment Position (IIP)
- Coordinated Portfolio Investment Survey
- Coordinated Direct Investment Survey
- External debt
- International Reserves
- International trade in services

V. Response by the IMF to statistical issues arising from globalization

Data initiatives

Financial Soundness Indicators (FSIs)

- Recent initiative to identify the financial strengths and weaknesses of the financial sector.
- Publication of the FSI Guide.
- Coordinated compilation exercise with 62 participating countries.
- Data as of reference date (end-2005) and metadata were published in early 2007.

V. Response by the IMF to statistical issues arising from globalization

FSIs: The Core Set

Deposit Takers Capital Adequacy	Regulatory capital to risk-weighted assets Regulatory Tier 1 capital to risk-weighted assets Nonperforming loans net of provisions to capital
Asset quality	Nonperforming loans to total gross loans Sectoral distribution of loans to total loans
Earnings and profitability	Return on assets Return on equity Interest margin to gross income Non-interest expenses to gross income
Liquidity	Liquid assets to total assets (Liquid asset ratio) Liquid assets to short term liabilities
Sensitivity to market risk	Net open position in foreign exchange to capital

V. Response by the IMF to statistical issues arising from globalization

FSIs: The Encouraged Set (1)

<p>Deposit Takers</p>	<p>Capital to asset Large exposures to capital Geographical distribution of loans to total loans Gross asset position in financial derivatives to capital Gross liability position in financial derivatives to capital Trading income to total income Personnel expenses to non-interest expenses Spread between reference lending and deposit rates Spread between highest and lowest interbank rate Customer deposits to total (noninterbank) loans Foreign-currency denominated loans to total loans Foreign-currency denominated liabilities to total liabilities Net open position in equities to capital</p>
<p>Other financial Corporations</p>	<p>Assets to total financial system assets Assets to gross domestic product.</p>
<p>Non-financial corporations</p>	<p>Total debt to equity Return on equity Earnings to interest and principal expenses Net foreign exchange exposure to equity Number of applications for protection from creditors</p>

V. Response by the IMF to statistical issues arising from globalization

FSIs: The Encouraged Set (2)

Households	Household debt to GDP Household debt service and principal payments to income
Financial markets	Average bid-ask spread in the securities market Average daily turnover ratio in the securities market
Real estate markets	Real estate prices Residential real estate loans to total loans Commercial real estate loans to total loans

VI. Framework that integrates various IMF data initiatives

Balance Sheet Approach (1)

- Balance Sheet Approach (BSA) examines balance sheets of key sectors of a country's economy in a framework that facilitates the identification and analysis of vulnerabilities.
- BSA is embedded in the *1993 SNA*.
- Availability of data for applying the BSA has improved—Standardized Report Forms (SRF) for monetary statistics, International Investment Position (IIP), Joint External Debt Hub (JEDH), and Coordinated Portfolio Investment Survey (CPIS).

V. Framework that integrates various IMF data initiatives

Balance Sheet Approach (2)

- Analyze vulnerabilities of sectors and transmission mechanisms among them
 - Maturity mismatches.
 - Currency mismatches.
 - Capital structure mismatches.

- BSA designed to identify key indicators of a sector's vulnerabilities, including
 - Net financial position.
 - Net foreign currency position.
 - Net short-term position.

Balance Sheet Approach (3)

Intersectoral Asset and Liability Position Matrix

debtor ↓ Holder of liability (debtor) ↑ creditor →	Central bank	General government	Other depository corporations	Other financial corporations	Nonfinancial corporations	Other resident sectors	Nonresidents
Central bank							
Monetary Base							
Total Other liabilities							
Short-term							
Domestic Currency							
Foreign Currency							
Medium-and long-Term							
Domestic Currency							
Foreign Currency							
General government							
Total liabilities							
Short-term							
Domestic Currency							
Foreign Currency							
Medium-and long-Term							
Domestic Currency							
Foreign Currency							
Other depository corporations							
Total liabilities							
Short-term							
Domestic Currency							
Foreign Currency							
Medium-and long-Term							
Domestic Currency							
Foreign Currency							
Other financial corporations							
Total liabilities							
Short-term							
Domestic Currency							
Foreign Currency							
Medium-and long-Term							
Domestic Currency							
Foreign Currency							
Nonfinancial corporations							
Total liabilities							
Short-term							
Domestic Currency							
Foreign Currency							
Medium-and long-Term							
Domestic Currency							
Foreign Currency							
Other resident sectors							
Total liabilities							
Short-term							
Domestic Currency							
Foreign Currency							
Medium-and long-Term							
Domestic Currency							
Foreign Currency							
Nonresidents							
Total liabilities							
Short-term							
Domestic Currency							
Foreign Currency							
Medium-and long-Term							
Domestic Currency							
Foreign Currency							

VI. Concluding remarks

- “Globalization” is not a new phenomenon, but its attributes are becoming increasingly complex.
- Critical policy and analytical interest in understanding the phenomenon and its impacts and potential risks and vulnerabilities that might arise.
- The national and international statistical communities must address these issues if we are to remain relevant.

VI. Concluding remarks

- To completely understand all of the issues, we need a fully integrated system of **stocks** and **flows** statistics:
 - The traditional interest has focused on the flows (GDP, balance on current account, government surplus/deficit).
 - To the extent that the various elements of the fully integrated system are compiled in different statistical agencies, enhanced levels of cooperation and collaboration will be needed—this applies equally at the **national** and **international** levels.
- The IMF Statistics Department has reoriented its work program to play its part in this collaborative effort.