International Macroeconomics
Master in International Economic Policy

The Global Financial Markets

Lectures 1-2

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Practical matters

• Course website:
  

  Link to Master PEI

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  No office hours but meetings can be easily organized. Just drop me an email.
Practical matters

- **Textbook**

- **Other material**
  Slides for the course as well as additional readings/references posted on my website. Required readings marked by an asterisk *. 
Practical matters

- **Grading:**
  - 40% homework (group of 4 people). To be handed back at lecture 8.
  
  Find an important policy question which deals with a subject of international macroeconomics. Find related academic articles (IMF, OECD, *Economic Policy*, World Bank, NBER or CEPR WP...) and press articles (FT, The Economist,...) which tackle the question. In a 6 pages (3500 words max.) document, provide a critical answer to the question.
  
  - 60% final exam: Multiple choice, short exercise(s), short essay.
Homework suggestions

- Is the US current account unsustainable?
- Is the role of Dollar declining?
- Should the Eurozone issue Eurobonds?
- Is the renminbi undervalued? (if yes, by how much?)
- Are Chinese savings too high?
- Has the European Monetary Union foster economic stability in Europe?
- Should quantitative easing lead to a depreciation of the dollar?
- Should the ECB rely on quantitative easing?
- Should the EU introduce a tax on financial transactions to stabilize financial markets?
- Is financial globalization good for growth?
- Have global financial markets spread the crisis worldwide?
- Should China move towards a floating exchange rate?
- Should Greece leave the eurozone? (or should Iceland join?)

.....

These are just some examples, some from previous years. You are free to choose another topic as long as related to international macro! Please contact me once you have chosen your question.
Objectives and methods

- introduction to recent work in international macroeconomics and finance
- both theoretical and empirical contributions
- current policy issues of globalization
- more analytical and less descriptive than other courses on globalization
- prerequisites: basic introductory course in microeconomics and macroeconomics
- no advanced formalization but some basic mathematical tools
Syllabus

- Global Financial Markets (1/2)
- Money, interest rates and exchange rates (3/4)
- Long term exchange rate and inflation (5)
- Current account dynamics and global imbalances (6/7)
- Exchange rate, output in open economies and the role of policies (8/9)
- Fixed versus floating exchange rates (9/10)
- International financial crises/sovereign debt crises (11/12)
Lectures 1 and 2: Global Financial Markets Roadmap

1. Financial Globalization: past and present
2. The case for opening capital markets and the empirical evidence
3. Financial globalization and the international transmission of shocks
   • International capital flows and the international transmission of the last financial crisis
Lectures 1 and 2 : Global Financial Markets

1. Financial Globalization : past and present
2. The case for opening capital markets and the empirical evidence
3. Financial globalization and the international transmission of shocks
Financial globalization: stylized facts

- Financial globalization ≠ Trade globalization
- Measures of trade openness:
  - What are the restrictions (tariffs and regulations) to free trade?
  - \((\text{Exports} + \text{Imports}) / \text{GDP}\)
- Measure of financial globalization: extent of the openness in cross-border financial transactions
- De Jure and de Facto financial openness measures
  - De Jure: What are the restrictions to international capital movements based on the information from the IMF’s Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER); example: In October 09, Brazil decided to tax capital inflows to discourage short-term hot money from flowing in.
  - De Facto: how much international trade in financial assets?
Which assets?

- Characteristics of financial assets: mean to transfer some purchasing power over periods
  - Portfolio investment: equity or debt
  - Foreign direct investment: > 10% ownership
  - Other investments: loans, trade credit
  - Derivatives (futures, options)
  - Reserves (central banks)
Financial openness (De Jure)
Chinn-Ito index based on IMF information on restrictions to capital movements

Note: Index between -2.5 and 2.5. -2.5=Closed capital market; 2.5=Fully opened

Source: Chinn and Ito, 2008
The world map of financial openness (De Jure) : index based on IMF information on restrictions to capital movements

Source: Chinn and Ito, 2008
Inflows, outflows and stocks

• Important distinction: flows and stocks
  – Flows: the value of assets **traded** for a given year: \( a_t \)
  – Stocks: the value of assets **held** in a given year:
    \[
    A_t = A_{t-1} + a_t = A_{t-2} + a_{t-1} + a_t = \ldots
    \]
    Stocks are the cumulative flows

Several measures of financial globalization:

**Stocks: IFI (International Financial Integration) measure**

Domestic assets held by foreigners + Foreign assets held by domestic agents

\[ \frac{\text{GDP}}{\text{GDP}} \]

Issue of valuation (the value of assets can change over time, see later)

**Flows:** inflows/GDP and outflows/GDP

Inflows: capital inflows/GDP: net purchases of domestic assets by foreign investors
(for example, a loan by a foreign bank to a domestic firm). Inflows can be negative if a foreign resident sells a domestic asset to a domestic resident

Outflows: net purchases of foreign assets by domestic investors (for example, a domestic household buying a bond issued by a foreign government)
Strong increase in international assets held in both groups.

More so in industrialized countries (x7!) than in emerging and dev. countries (x3).
Flows are more volatile than stocks: in the 2008 crisis, collapse of international flows.

Figure 1. Global Capital Flows, 1975-2009

Percent of world GDP

Note: sum of gross capital inflows across the world’s countries, as a ratio of world GDP. Source: Lane and Milesi-Ferretti, EWN II database, and IMF, Balance of Payments Statistics.
The big retrenchment during the crisis: the end of financial globalization?

Capital inflows: net purchases of domestic assets by foreign investors

Source: Milesi-Ferretti and Tille
Capital outflows: net purchases of foreign assets by domestic investors

Source: Milesi-Ferretti and Tille
Note: sum of capital inflows across the world’s countries, as a ratio of world GDP. Source: Lane and Milesi-Ferretti, EWN II database, and IMF. Balance of Payments Statistics.
Global Merchandise Trade : 1991-2010

Source: Federal Reserve of Dallas

Industrialized countries accounted for 66% of world GDP and 68% of world exports in 2008.
Two forms of globalization

• « Real »: trade flows

• Financial: financial flows

• Compare the two forms of globalization:
  = Ratio of financial openness (financial assets) to real openness (goods)

  Domestic assets held by foreigners
  + Foreign assets held by domestic agents
  ________________________________
  Exports + Imports
Trade and financial integration, 1970–2004

Domestic assets held by foreigners + Foreign assets held by domestic agents
________________________________________________________
Exports + Imports

Source: Lane and Milesi-Ferreti (2007)
Industrialized countries share in goods trade and financial trade

Figure 1. Share of advanced countries in world trade and cross-border financial position

Note: Authors’ calculations based on Lane and Milesi-Ferretti (2007) and WDI data.
The first globalization

« What an extraordinary episode in the economic progress of man that age was which came to an end in August, 1914! ... The inhabitant of London could order by telephone, sipping his morning tea in bed, the various products of the whole earth, in such quantity as he might see fit, and reasonably expect their early delivery upon his doorstep; he could at the same moment and by the same means adventure his wealth in the natural resources and new enterprises of any quarter of the world, and share, without exertion or even trouble, in their prospective fruits and advantages; or he could decide to couple the security of his fortunes with the good faith of the townspeople of any substantial municipality in any continent that fancy or information might recommend. ».

John Maynard Keynes, Chapter II Europe Before the War, in The Economic Consequences of the Peace (1920).
The first financial globalization

- World capital markets very integrated at the end of the 19th century: Share of British wealth invested overseas: 17% in 1870 and 33% in 1913 (larger than any country today). Similar in France, Germany

- Capital outflows from UK (purchase of foreign assets): mostly to the « New World » with natural resources: Canada + Australia (28%), US (15%), Latin America (24%)
  
  source Taylor and Williamson (1994)

- What form? Portfolio investment (equity and bonds to invest in railroads, harbors)
Capital mobility: Obstfeld and Taylor, 2002 (a narrative based measure)
The first and second globalization: the financial side

Capital overflow
The growth of the global capital market in both eras of financial market integration was impressive.

Note: The chart shows the ratio of the stocks of international investments (measured by gross assets) to gross domestic product. The sample comprises the major capital exporters and other countries that enter the sample over time. For details of the changing sample, see Obstfeld and Taylor; 2004.
Understanding the first globalization wave

• Causes of first globalization wave:
  – Transportation and communication (telegraph): information!
  – Global UK banks.
• Basic theory: neoclassical growth model.
  Capital scarce countries should have high returns to capital.
• End of 19th century = first globalization wave
  Capital flows from capital abundant countries (say Europe or UK) to capital scarce ones (say US). Why?
  European capital chased European labor (and vice versa): both migrated to New World
The neoclassical production function

- Output $y_t$ (at date $t$) is produced using inputs (capital $k_t$) more or less efficiently (abstracting from labour).
- Production function:
  \[ y_t = A_t k_t^\alpha \]

$A_t$ is an efficiency parameter (think ‘technology’). Also called ‘Total Factor Productivity’ (TFP).

$0 < \alpha < 1$ = decreasing marginal productivity of capital (MPK).

$y_t$ is increasing in $k_t$ and efficiency $A_t$. 
The neoclassical production function

Output $y$

Higher capital stock increases output

$y = A k^\alpha$

Low $k$  high $k$

Capital $k$
Better technology increases output

\[ y = Ak^\alpha \]

- Increase in \( A \)
The marginal productivity of capital (MPK)

• MPK = additional unit of output per unit of capital = return on capital.

• Assumptions about MPK purely technological – no economics involved. Different assumptions may be needed for different technologies.

• We assume decreasing returns - neoclassical production function with $0 < \alpha < 1$:

$$MPK = \frac{\partial y}{\partial k} = \alpha A(k)^{\alpha-1}$$
The neoclassical production function

\[ y = Ak^\alpha \]

\[ \Delta y_1 > \Delta y_2 \]
THE RETURN ON CAPITAL
Diminishing Marginal Product of Capital

Return on Capital
(MPK)

\[ 0 < \alpha < 1 \]

\[ MPK = \frac{\partial y}{\partial k} = \alpha A(k)^{\alpha-1} \]
THE RETURN ON CAPITAL
Diminishing Marginal Product of Capital

If capital mobile across borders, return on capital equalizes the world interest rate. Why?
Capital flows after financial opening

Return on Capital (MPK)

After opening, capital flows towards the capital scarce country (the US). Why?

World interest rate

Capital $k$

$MPK^{US}$ (autarky)

$k^{US}$

$k^* = k^{UK}$ (autarky)