The Transmission Channels of Monetary Policy

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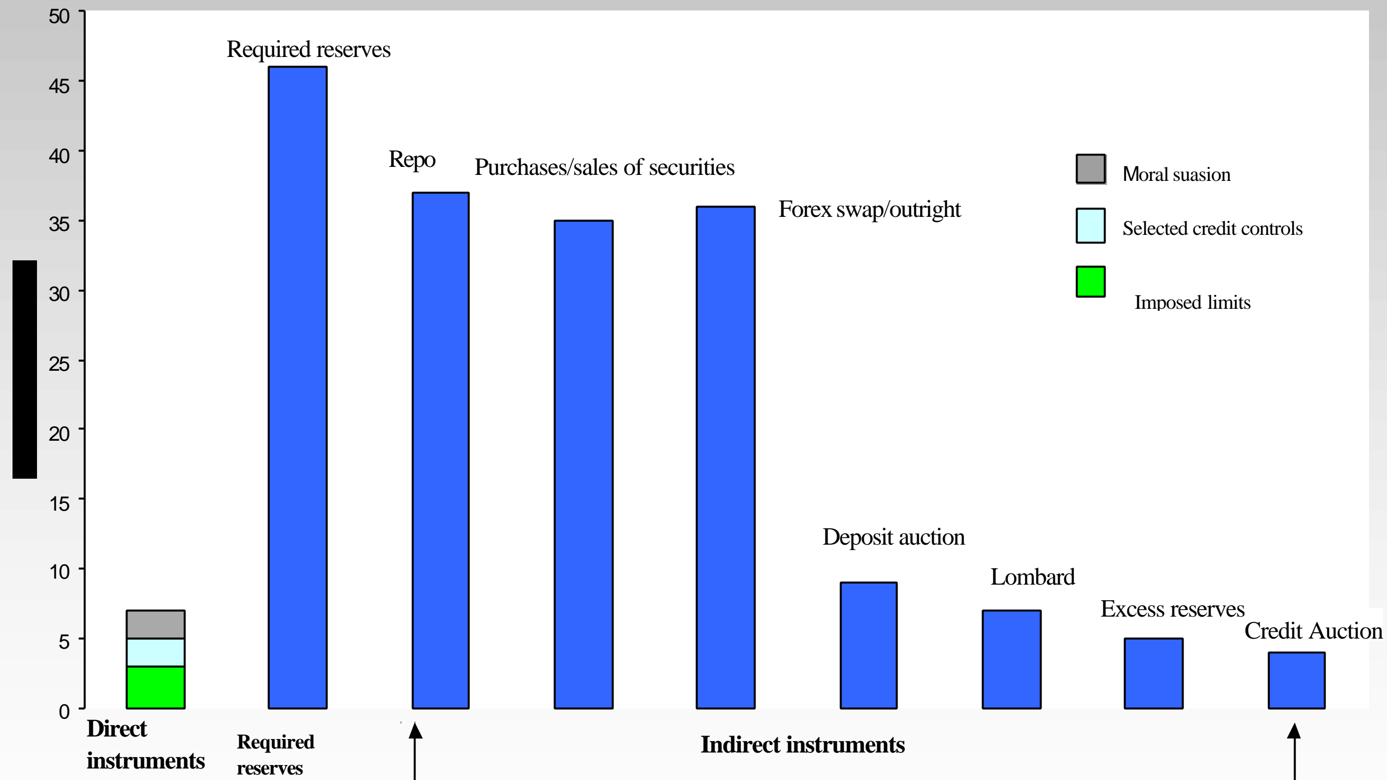
Introduction: Monetary framework

Policy instrument (e.g., short-term nominal interest rate)

Channels of Transmission (e.g., long-term real rate)

Policy goals (e.g., price stability)

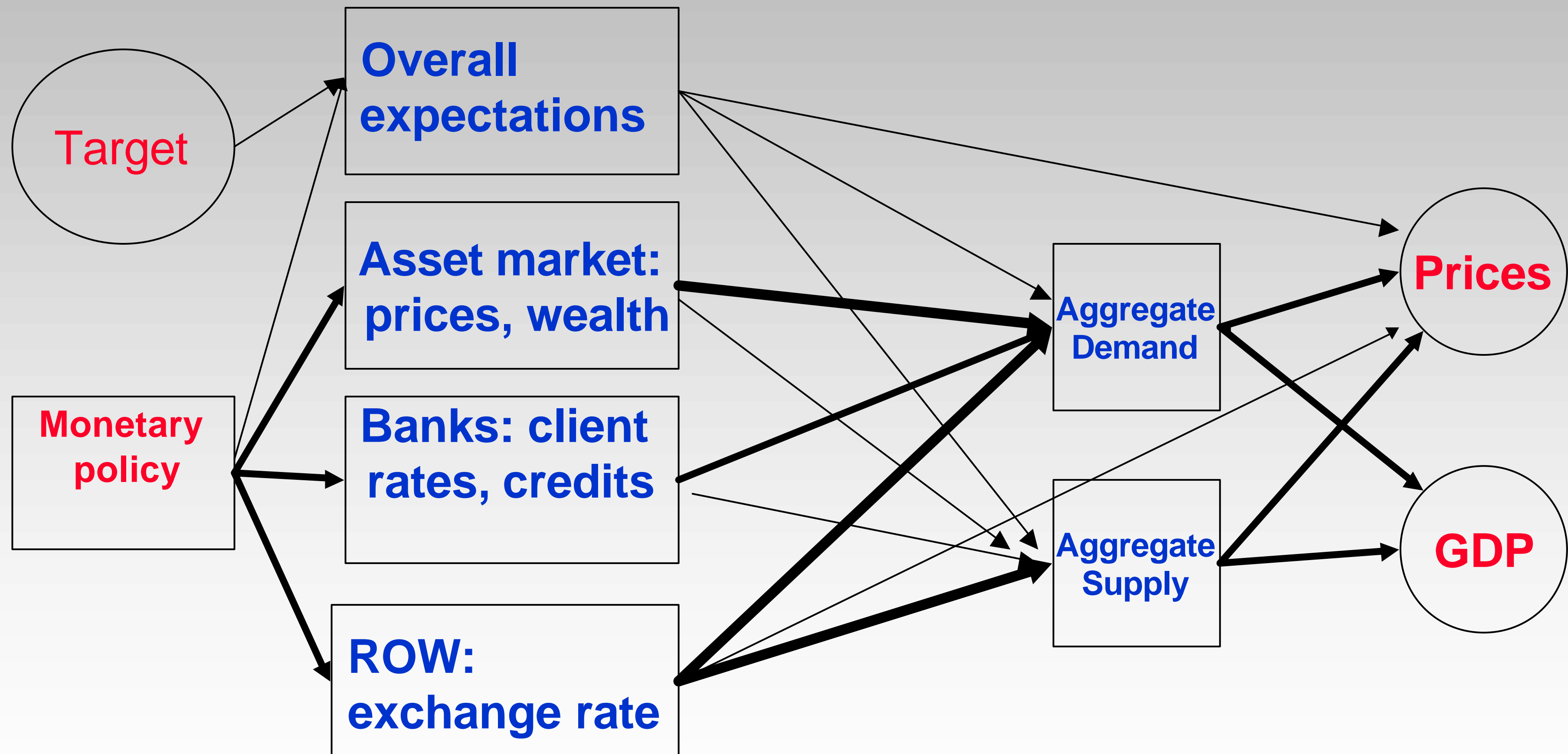
Introduction: Policy Instruments



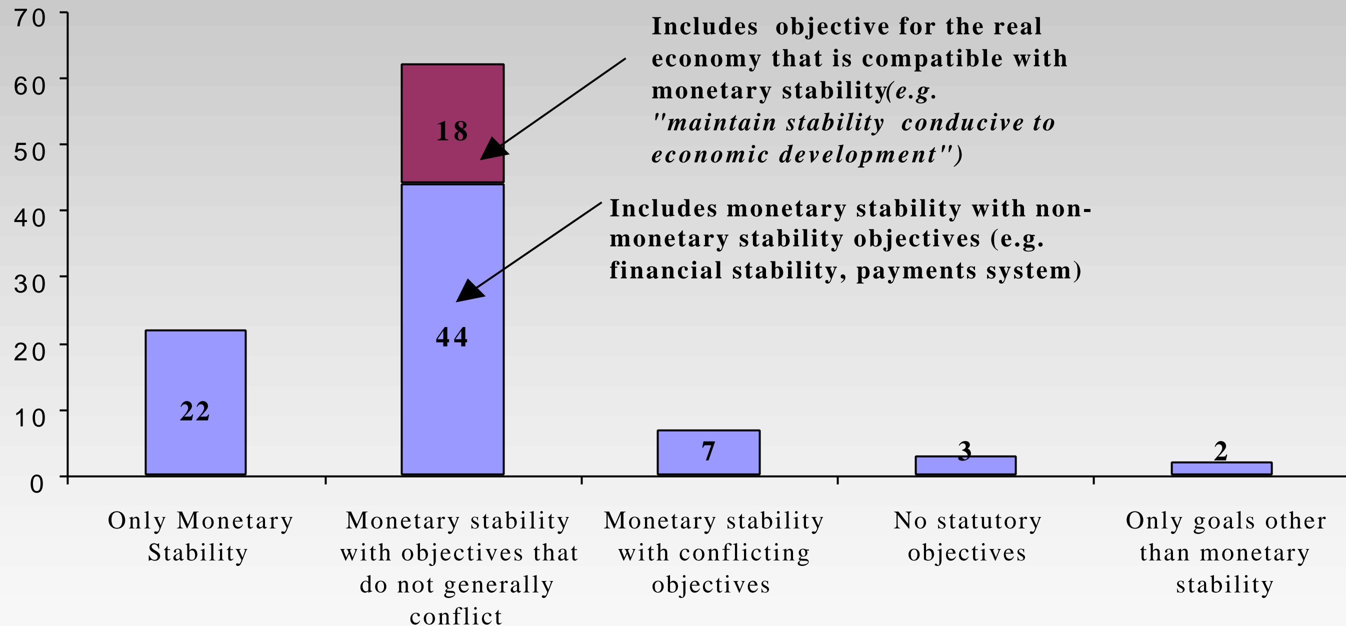
Introduction: List of Surveyed Countries (CCBS)

Industrial	*Transitional*	*Developing*
Australia	Albania	Argentina
Austria	Bosnia Herzegovina	Bahamas
Belgium	Bulgaria	Bahrain
Canada	Croatia	Bangladesh
Denmark	Czech Republic	Barbados
Finland	Estonia	Botswana
France	Hungary	Chile
Germany	Kazakhstan	China
Greece	Kyrgyz Republic	Cyprus
Hong Kong	Latvia	Eastern Caribbean
Iceland	Lithuania	Egypt
Ireland	Moldova	Fiji
Italy	Poland	Ghana
Japan	Russia	India
Korea	Romania	Indonesia
M alta	Slovakia	Israel
Netherlands	Slovenia	Jamaica
New Zealand	Ukraine	Kenya
Norway		Mauritius
Portugal		Mexico
Spain		Mongolia
Sweden		Mozambique
Switzerland		Namibia
Taiwan		Nigeria
UK		Peru
USA		Sierra Leone
		South African States
		Tanzania
		Thailand
		Tonga
		Uganda
		West African States
		Zambia

Introduction: Transmission channels



Introduction: Policy Goals



Source: Bank of England Survey of Monetary Policy Frameworks

Introduction: Main references

- Kamin, Turner, and Van't dack (1998) *The Transmission of Monetary Policy in Emerging Market Economies*, BIS Policy Papers No. 3

- Mahadeva, Sterne (2000) *Monetary Policy Frameworks in a Global Context,* Routledge, London.

- Fry (1995) *Money, Interest and Banking in Economic Development,*The John Hopkins University Press

Introduction: Plan of the presentation

✓ 1. Introduction: Role of transmission channels

2. The transmission channels of monetary policy

3. Issues for emerging and transition economies

4. Monetary frameworks and transmission channels

2. Central Banker´s Difficulties

- Even basic overview indicates that evaluation of transmission is an complex issue
  - it is difficult to identify causal linkages
  - various channels have different speed
  - some of them are not agreed on (eg. Is IS-LM model valid ?)
- In emerging economy: evaluation is particularly difficult
  - some channels behave differently
  - less data but more structural changes

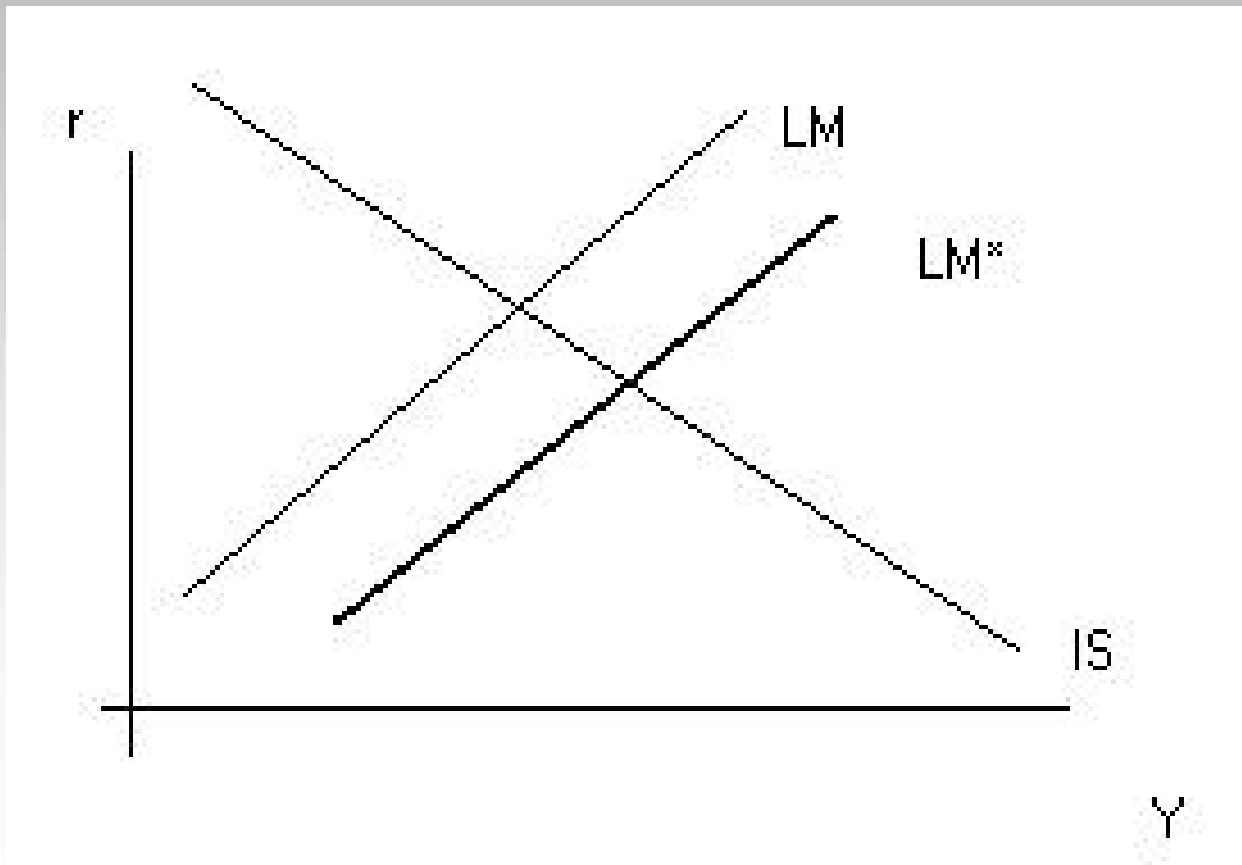
2. Transmission via Banks: “Classics”

- Expansion of monetary policy in the IS-LM:

$$M \uparrow \mathrm{T} \;\; i_r \, \mathrm{Z} \, \mathrm{T} \;\; AgD \uparrow \mathrm{T} \;\; Y \uparrow$$

- In short run, prices rigid, thus the link between nominal and real rates
- AgD grows due to a change in present value of goods but also due to nominal (!) cash-flow effects
- In long run, output returns to its potential level
- $P \uparrow$

2. Transmission via Banks: IS-LM



2. Transmission via Banks: Role of Money

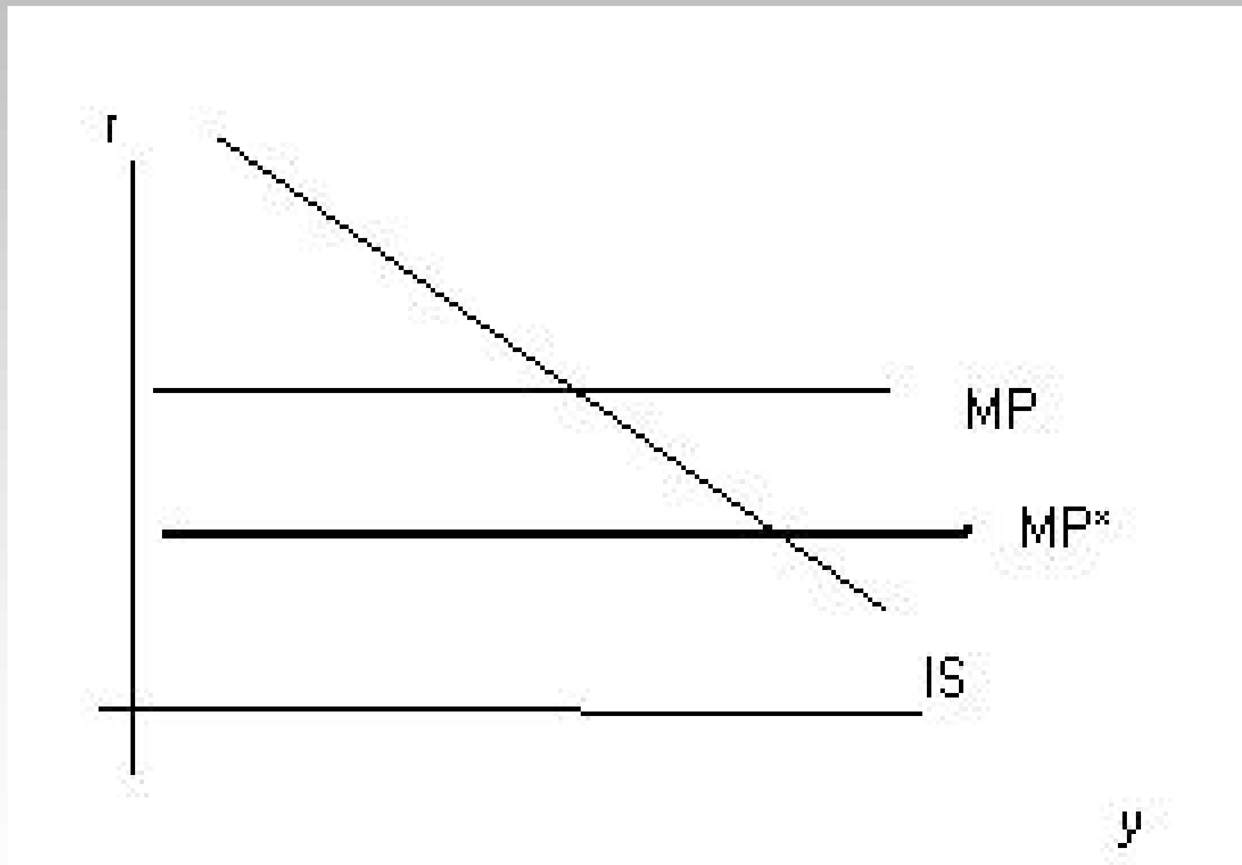
- Expansion of monetary policy in the IS-MP-IA:

$$\pi^e < \text{target} \; \mathrm{T} \;\; i_r \; \mathrm{Z} \; \mathrm{T} \;\; \text{AgD} \uparrow \; \mathrm{T} \;\; Y \uparrow$$

- Revolution (?) …shall we remove the LM curve from our textbooks ?

- See Romer (2000) Keynesian Macroeconomics Without the LM Curve, WP No 7461, NBER

2. Transmission via Banks: IS-MP-IA



2. Transmission via Banks: Credits

- Banks affect economy also by volumes of provided credits
- Problems with adverse selection creates situation in which market is cleared by both interest rates as well as non-price means
- Changes in regulatory framework may have strong impact on demand without changes in interest rate

2. Transmission via Banks: Credit Channel

i_r ↑ T P_e Z+ AgD Z

T bankruptcy of a client more likely

T adverse selection worse

T moral hazard higher

T likelihood of financial distress higher

T more reserves needed

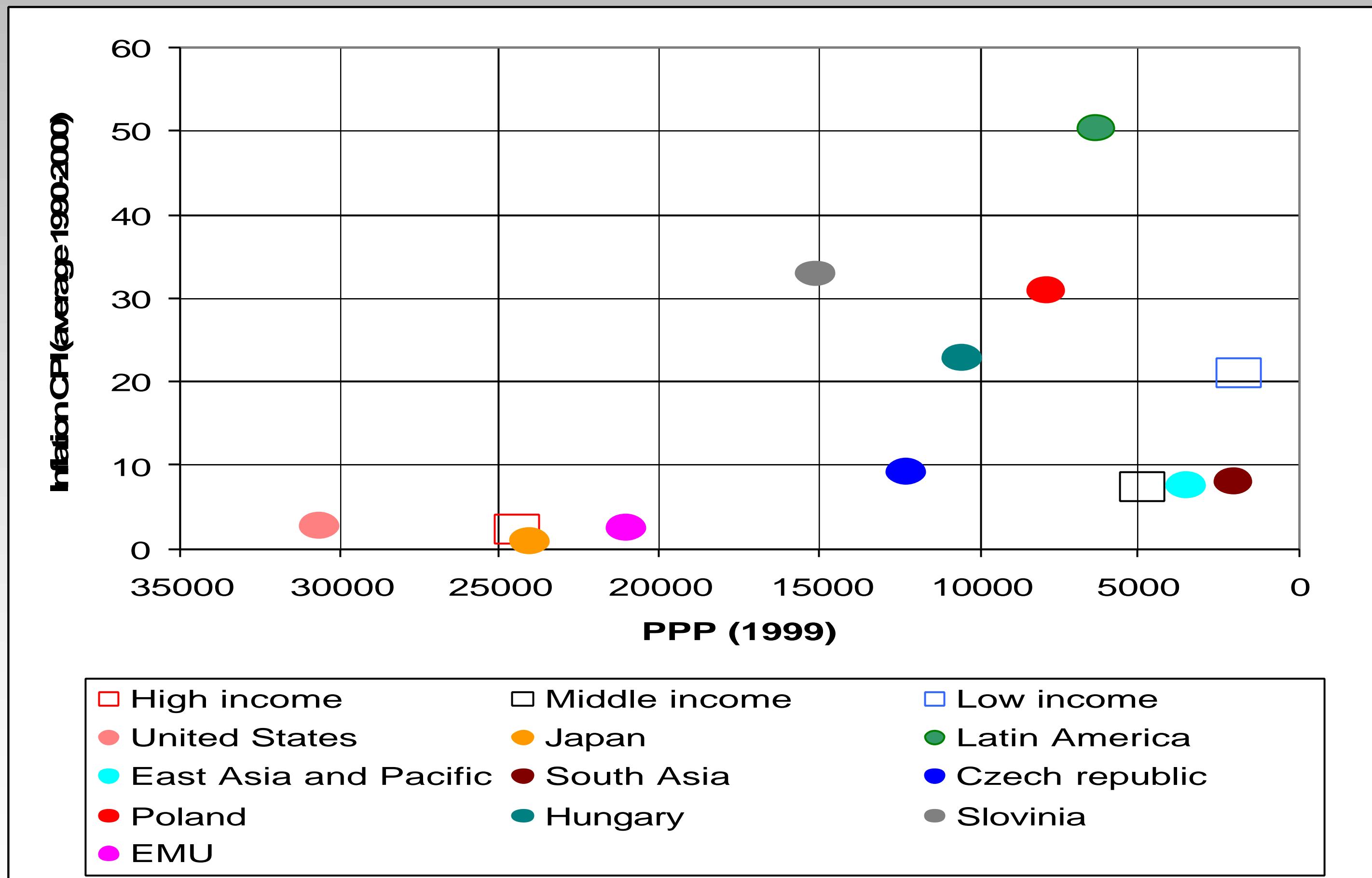
Volume of credits granted is reduced by banks

2. Transmission via Banks: More Impact With Credit Channel

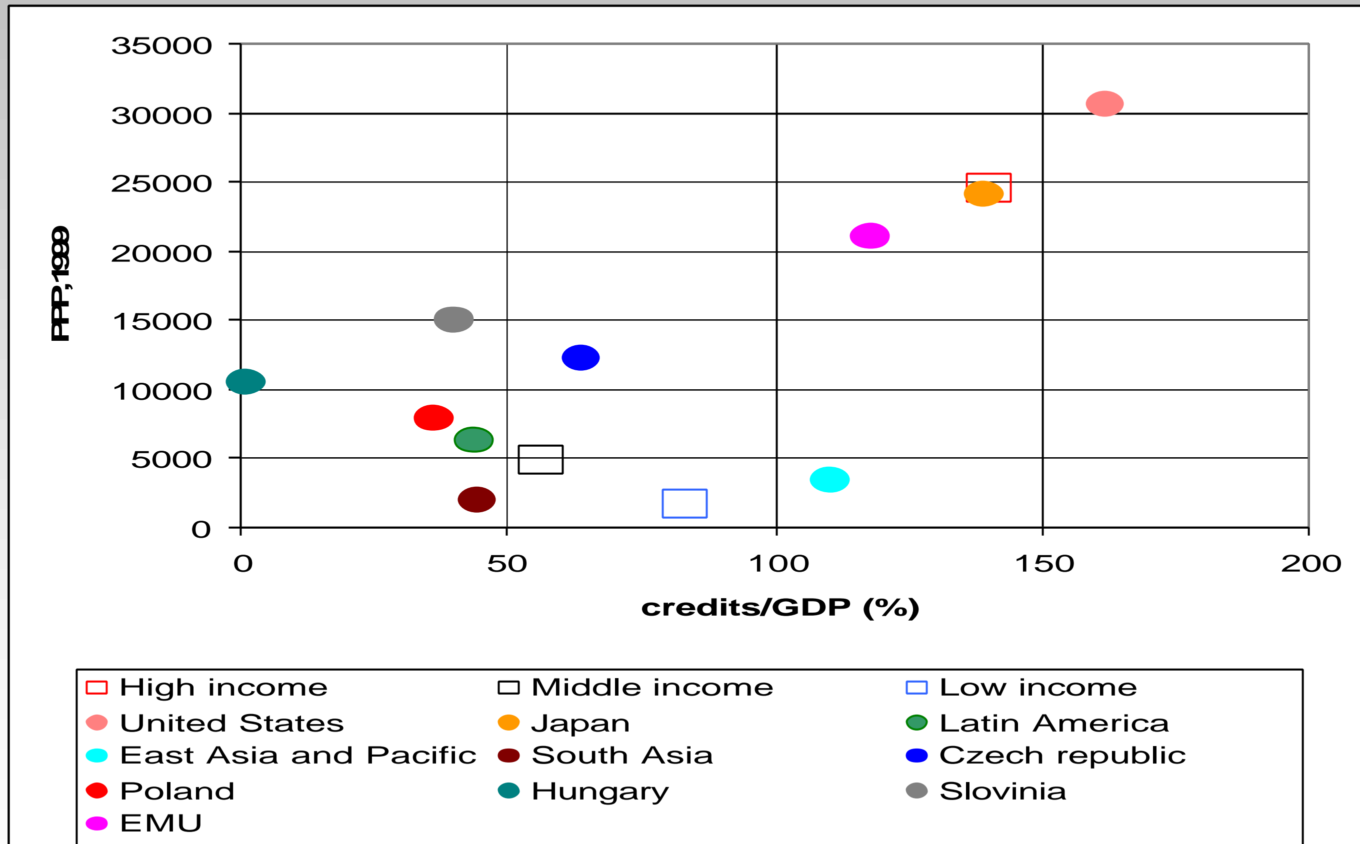
Implications:

- if credit channel important (bank dependent economy), monetary policy has a greater impact on demand than in economy with well-developed capital market
- impact is different for various sectors: higher for small firms and households, smaller for large corporations (better information, credit links abroad)
- credit channel may over-write interest rate channel (eg. in the case of asset bubble)

2. Sample of Countries
World Bank Group-Development Database (2001)



2. Importance of Credit Channel



2. Transmission via Financial Market: Basics

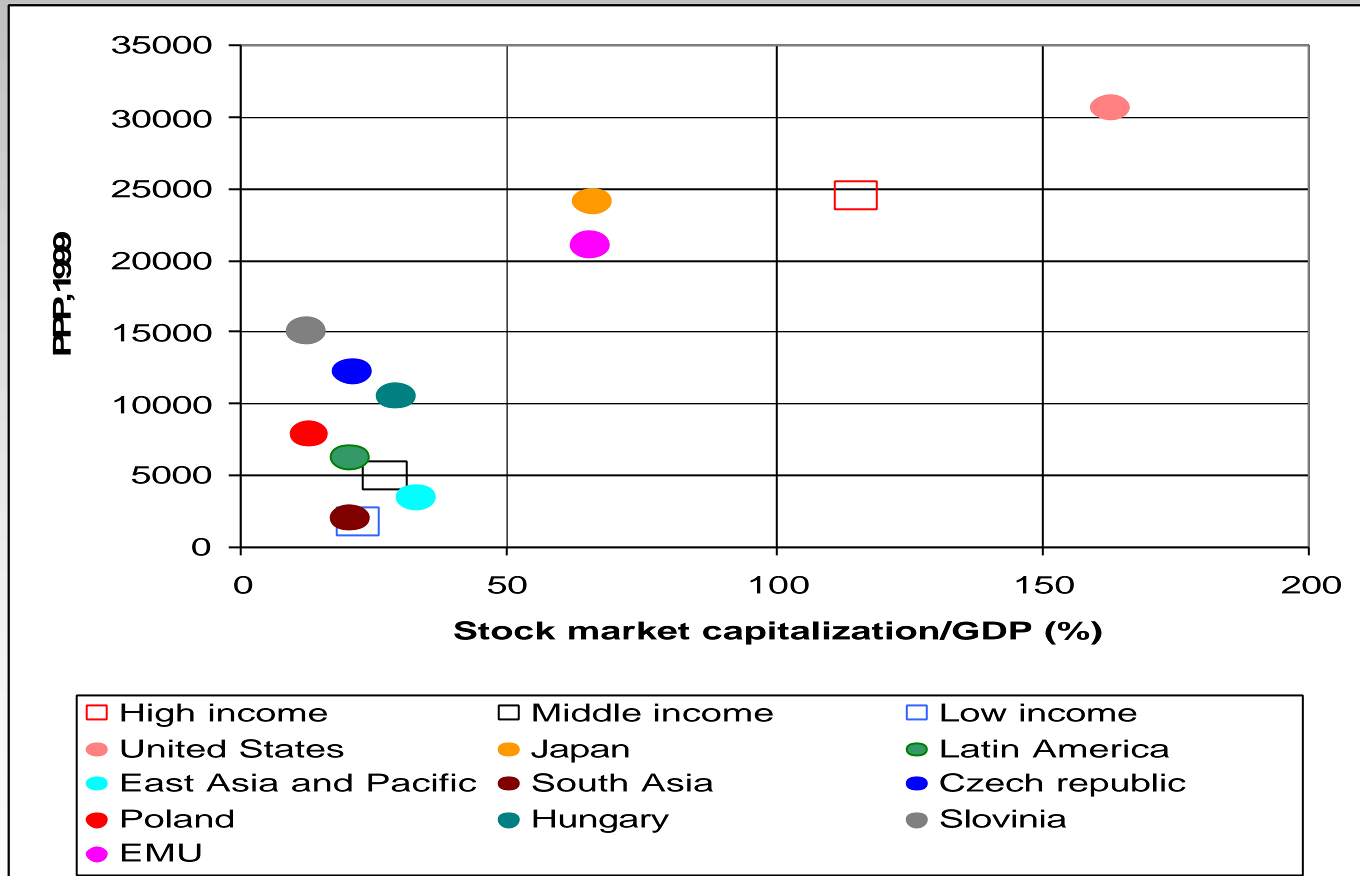
- Changes in monetary policy can affect other market than the ones with deposits and credits:
  - Equities
  - Real estate

- As a result, asset prices, balance sheets and wealth of all sectors can changeT AgD changes
  - consumption due to wealth effect
  - investment due to a change in relative prices

2. Transmission via Financial Market: Role of Asset prices

- Analogy to market with goods - higher rates reduce spending in stock market - equity prices Z, also other asset prices (land, housing) Z
- This reduces accumulated wealth T P_e Z+ AgD Z
- if asset prices important, monetary policy has a greater impact on demand
- asset bubbles: should be considered by a central bank due to potential wealth and balance sheets effects

2. Importance of Equity Channel



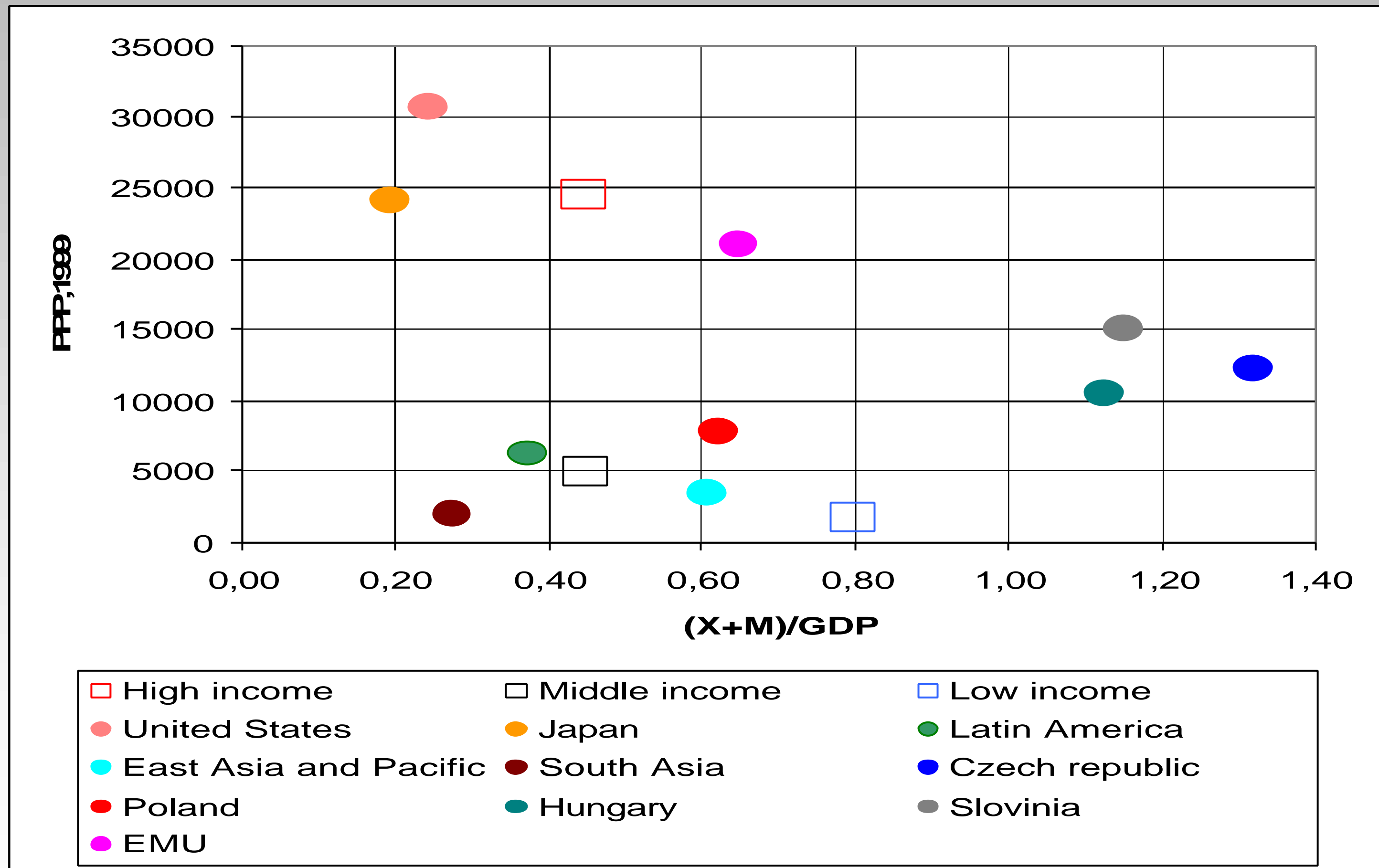
2. Transmission via Exchange rate: Basics

- In floating regime - according to textbooks: monetary expansion leads to exchange rate depreciation which increases net export (Marshall-Lerner), output and adds to higher price pressures
- i_r Z T E ↑ T net export ↑ T Y ↑ + P ↑
- there is also wealth effect (!) - sectors that are net debtors have their wealth reduced
- T Y Z + P Z
- on supply side, theory not so clear - depreciation can - for example - lead to higher investment into export sectors (also due to cash-flow effect)

2. Transmission via Exchange rate: Evidence

- There is evidence that changes in nominal rate affect inflation with predicted sign
- BUT:
  - real exchange rate returns fast to its pre-depreciation level (so net export is not sensitive to changes in interest rate)
  - link between interest rate and exchange rate is more complicated (expectations and other rates of return matter)
  - catching-up effect implies a built-in tendency for exchange rate to appreciate (tradable/non-tradable story)
- This means that the exchange-rate channel may not be as strong as it seems in textbooks (output does not react)

2. Openness

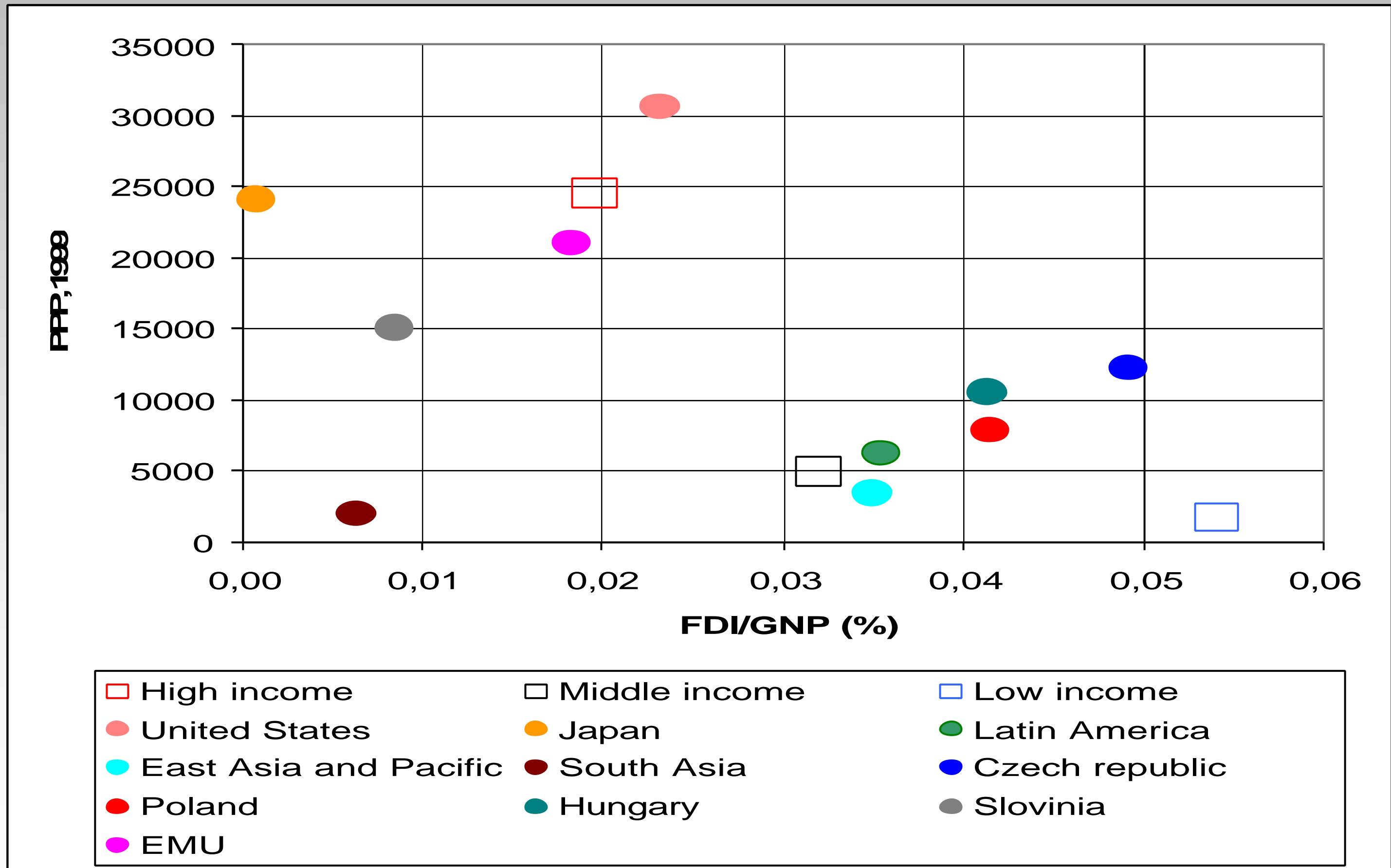


2. Transmission via Exchange rate: Central Banker´s Dilemma

In open economy, there are actually two of them:

- what to do if AgD and trade deficit are high?
  - central bank should increase i_r
  - this will appreciate domestic currency
  - most likely outcome: trade deficit worsens
- is it better to fix the exchange rate?
  - For prices in tradables yes
  - but there will be catching-up effect
  - and there will be capital flows

2. Inflows



2. Transmission: Expectations

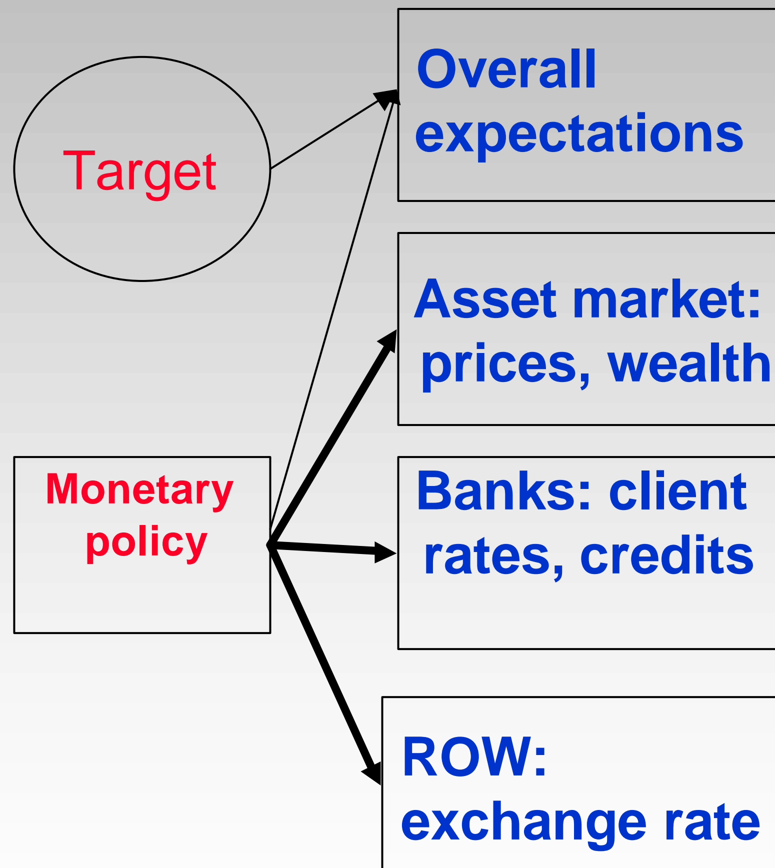
- If target not credible, expectations may over-write other policy actions of central bank
  - acceleration of inflation
  - indexation
  - financial sector concentrates on short-term activities
  - currency substitution

- credibility lost for various reasons
  - political crisis
  - international financial turbulence
  - adverse commodity shock
  - previous policy errors

Plan of the presentation

- ✓ 1. Introduction: Role of transmission channels
- ✓ 2. The transmission channels of monetary policy
- 3. Issues for emerging and transition economies
- 4. Monetary frameworks and transmission channels

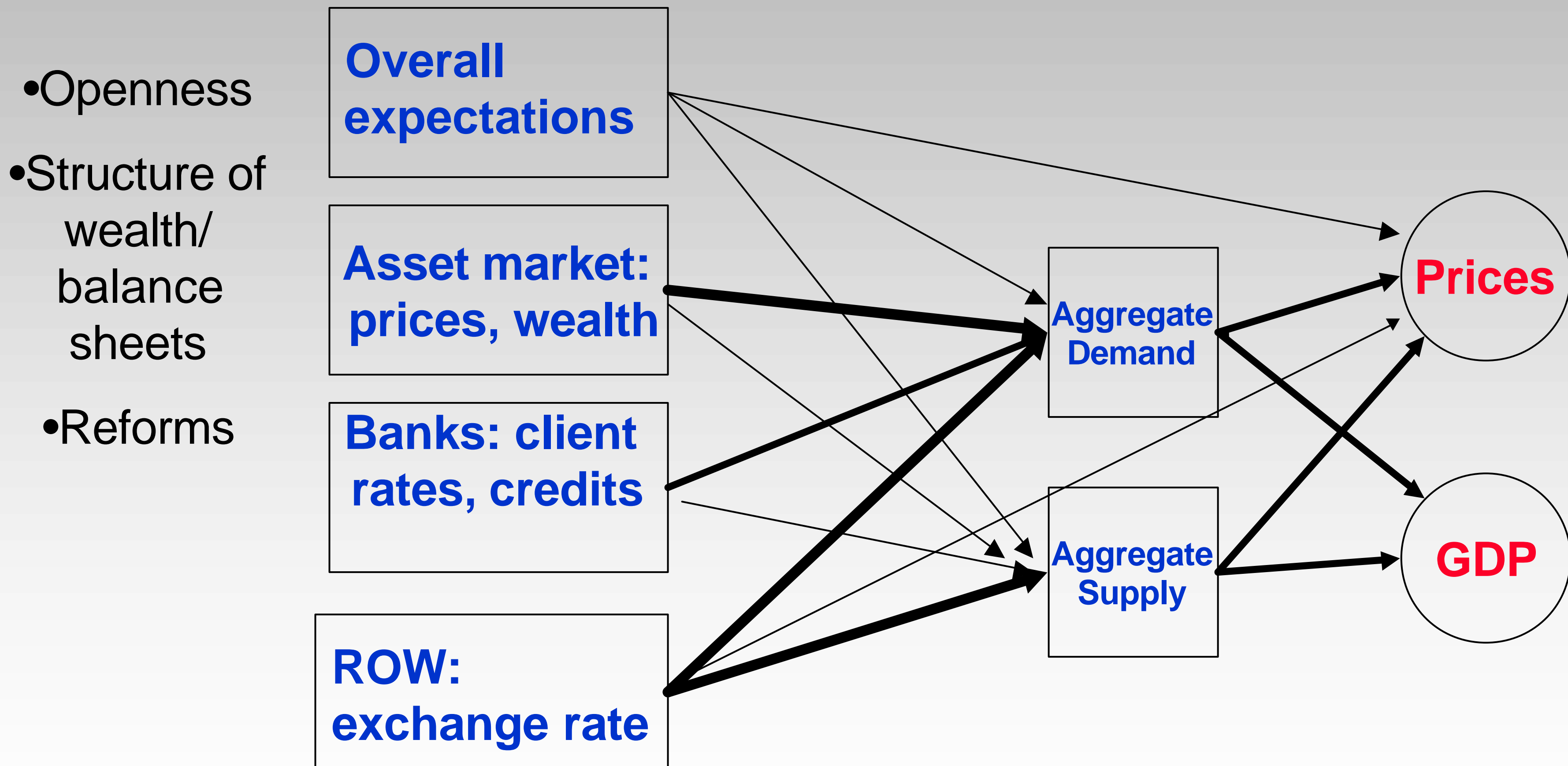
3. Factors Influencing Transmission (A)



- Quality of banking sector
- Structure of financial markets
- International financial markets
- Credibility of economic policies

3. Factors Influencing Transmission (B)

- Openness
- Structure of wealth/ balance sheets
- Reforms



3. Problems with Banking Sector

- Banks in emerging economies suffer from various problems:
  - inadequate legal protection of creditors
  - larger uncertainty (structural changes)
  - asset bubbles (land, equities) associated with reforms
  - delayed privatization (waiting for private owner)
- As a result, credits are more cyclical !
- Given higher dependency on credits, this makes everything more volatile

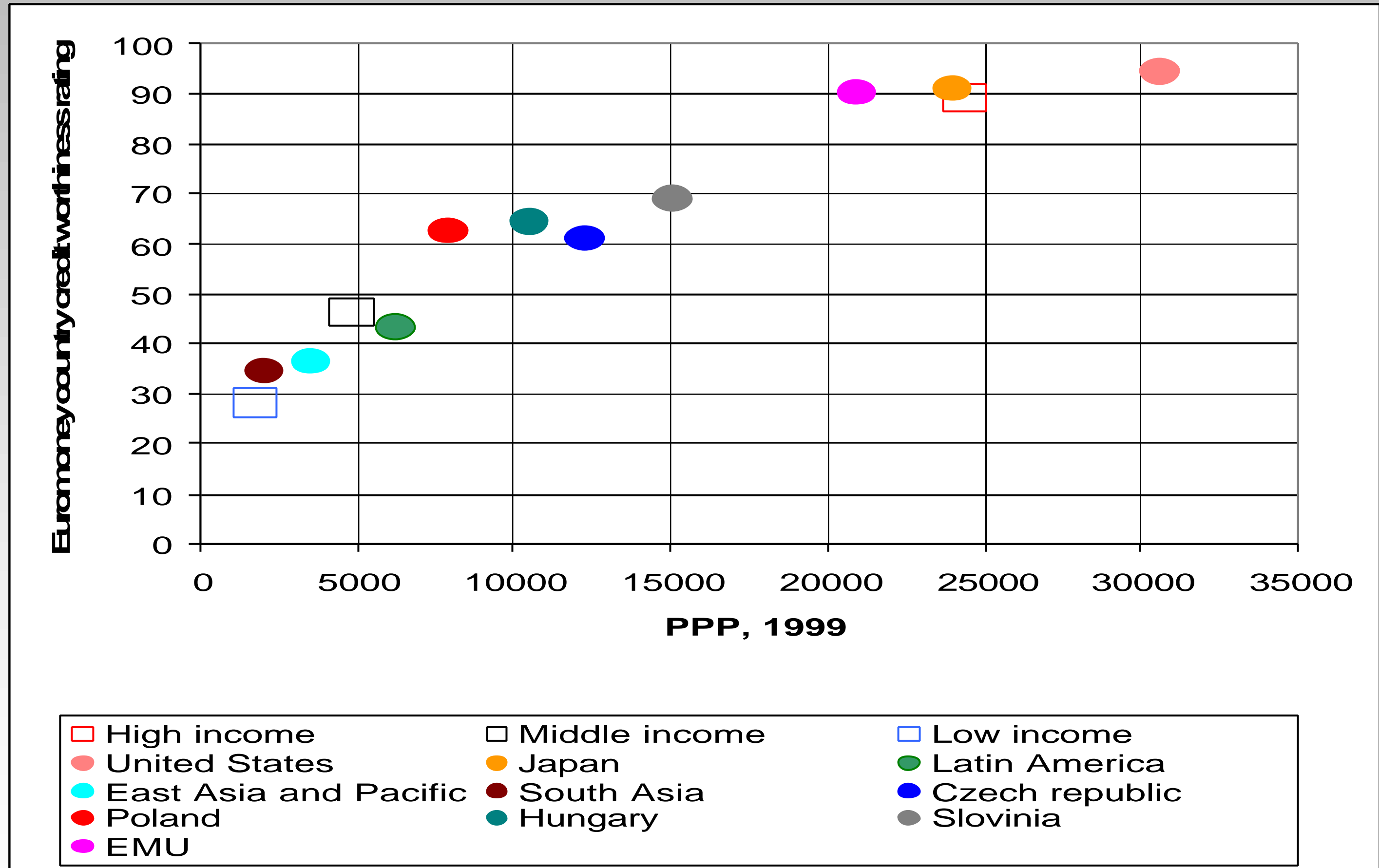
3. Problems with Financial Markets

- Some markets are embryonic
  - options/swaps/forwards did not develop under fixed exchange rate
  - capital market is not deep (privatization method matters)
  - bond market is expensive to develop (if government does not borrow long-term domestically)
- Some channels of transmission do not work
  - asset prices do not affect wealth
  - expectations are more volatile due to lack of information
  - one large player can destroy price signals

3. Problems with Capital Flows

- After liberalization, role of international markets increases:
  - if nominal convergence not achieved, there is a problem with short-run flows
  - small economies interact with large international players that analyze countries in groups (risk of contagion)
- Exchange rate may get out of line with domestic fundamentals

3. Access to International Markets



3. Credibility of economic policies

- Loss of credibility due to
  - exchange rate crisis
  - banking crisis (banks supervised by central bank)
  - asset bubble bursts
- Can over-write monetary instruments
  - cut in rates can cause currency substitution, outflow of FDI, fall in output,
  - increase in rates can lead to recovery of credibility and prevent loss in output
- Target may work better than instruments

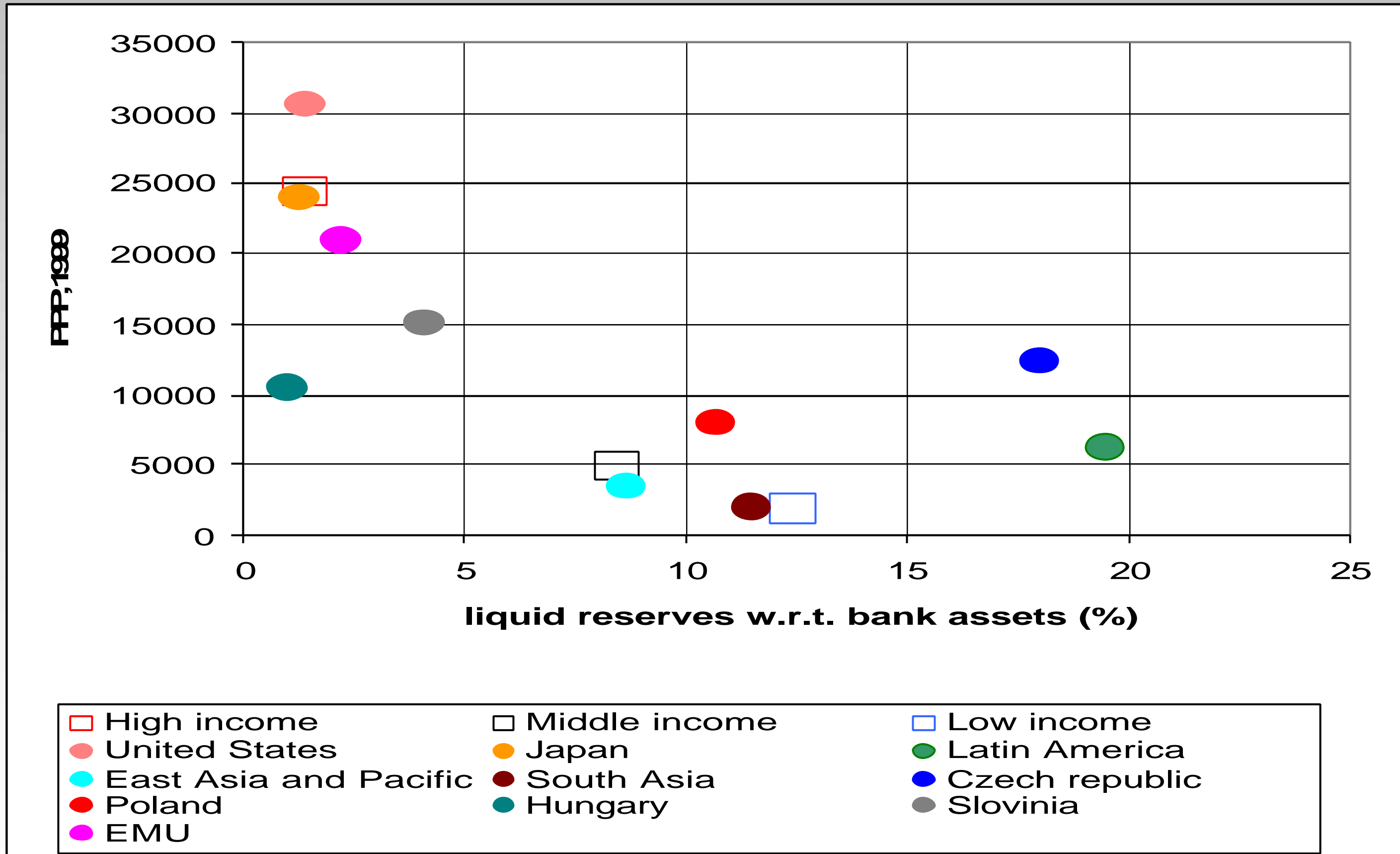
3. Increase in Openness

- Process of economic development is associated with increasing openness
- It changes relative importance of channels of transmission:
  - role of exchange rate and world price increases relative to domestic inflation pressures (ULC)
  - asset prices get more important
- As a result:
  - transmission is faster
  - impact of policy is asymmetric for sectors

3. Balance Sheets and Financial Fragility

- Balance sheets of sectors may be weak:
  - currency crisis
  - asset bubble
  - excessive borrowing
  - mismatch between assets and liabilities
- Effects of monetary policy more volatile:
  - wealth effect is stronger (during boom excessive risks taken, during recession balance sheets shrink)
- Exchange rate channel can dominate:
  - sectors that are net debtors in foreign currency, depreciation means reduced net wealth

3. Fragility



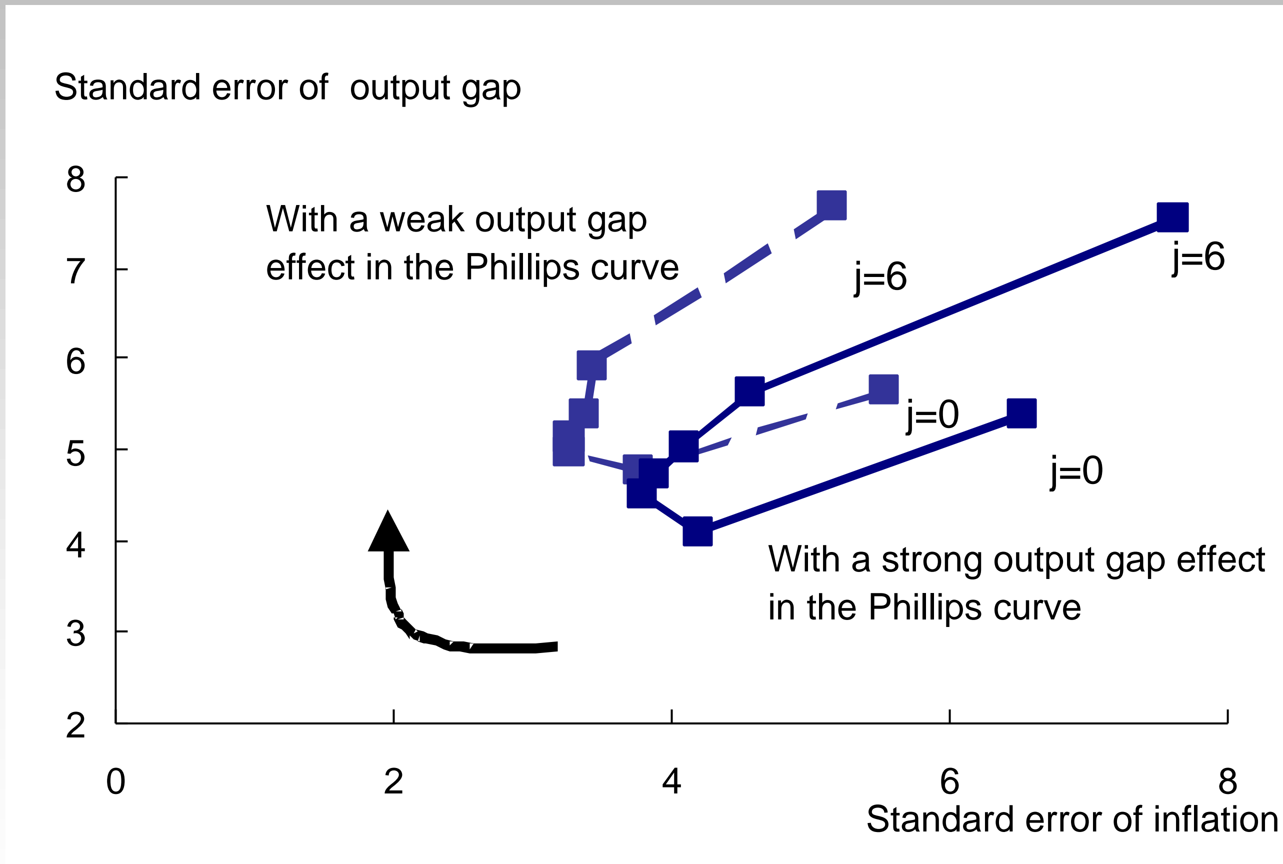
3. Impact of Reforms

- Reforms can change transmission mechanism:
  - Privatization
  - Liberalization (prices, foreign exchange)
  - Regulatory reform (banking, capital market)
- Implications:
  - Distribution of wealth changes
  - New relative prices make historical information obsolete
  - Banks reduce volume of credits in order to create additional reserves
- Monetary policy faces larger uncertainty

3. Comparing transmission

- With a model one can estimate speed of transmission of monetary policy and compare various strategies
- Results differ among countries due to different characteristics of transmission channels
- Central bank should consider all of them when making decisions
- Example: UK versus Czech republic (CZ)
  - transmission much shorter in the CZ case
  - real variables less sensitive to policy rule in the CZ case
  - exchange rate channel matters more in the CZ case

3. Analyzing transmission



Plan of the presentation

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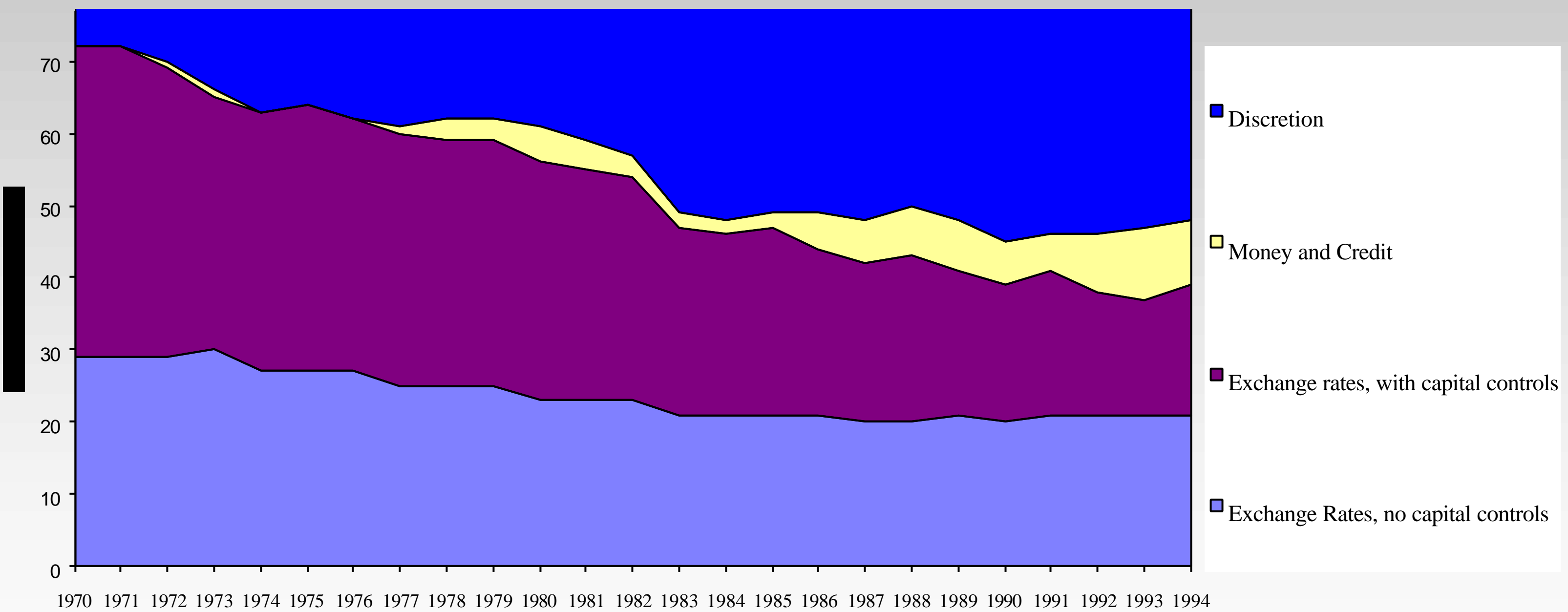
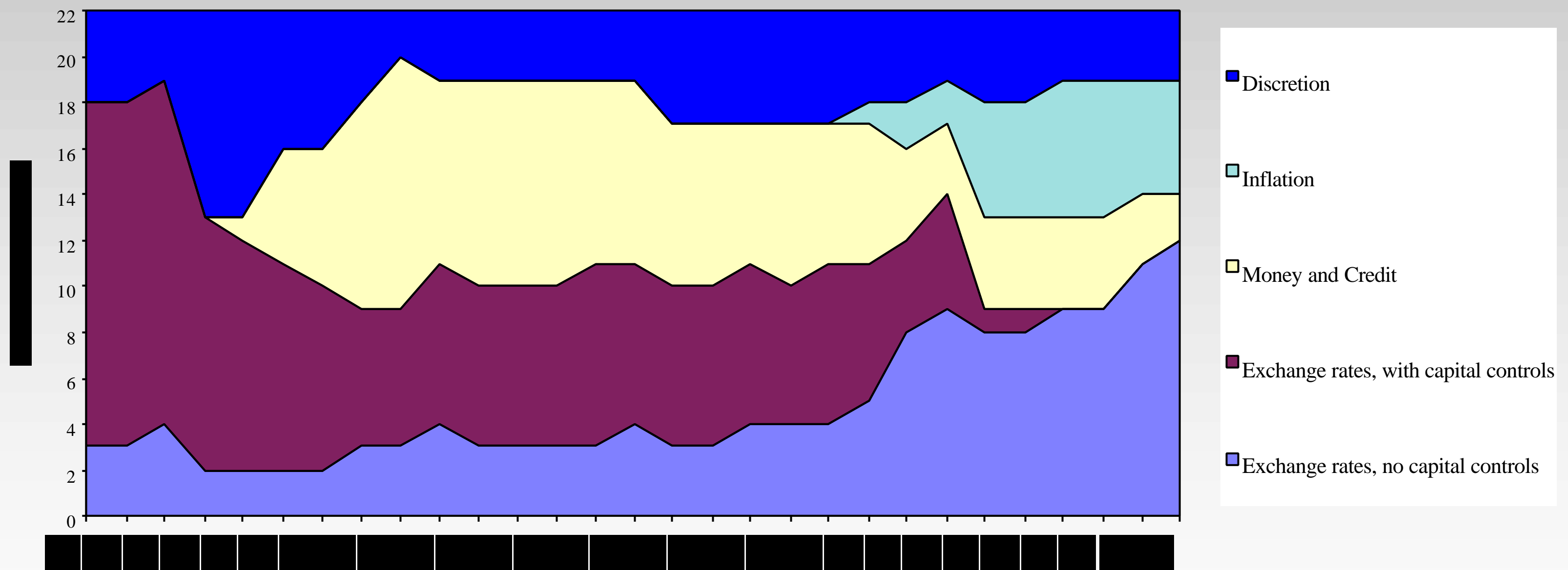
4. Monetary frameworks

- Monetary frameworks should change when our knowledge about transmission channels changes
- The example with the LM curve shows that evolution of economy and institutions frequently outpaces theory
- Similar conclusion is probably true for design of new frameworks -the most common reason for a change in framework is currency/financial crisis
- In last three decades, monetary frameworks changed significantly:

4. Changes in Frameworks According to CCBS (A)



4. Changes in Frameworks According to CCBS (B)



Source: Cottarelli and Giannini (1997), extended by authors.

4. Conclusions

- Central banks in both developed as well as developing countries modify their monetary frameworks towards greater flexibility (discretionary regimes, inflation targeting) - except for the ESCB
- This trend reflects difficulties of relying on few indicators and necessity to react to important changes:
    - financial innovations
    - changes on asset markets
    - changes in quality of balance sheets
    - new regulatory rules
    - international crisis