

# Monetary Unions: Experiences and Lessons

**Reuven Glick**

Center for Pacific Basin Studies  
Federal Reserve Bank of San Francisco

**FRBSF / BOE / WBI**

**Global Seminar for Senior Policymakers**

*Capital Flows, Monetary Policy,  
and Current Issues in International Finance*

Paris, France ■ April 23-26, 2007

# Outline

- I. Trends in exchange rate arrangements
- II. Economic costs and benefits of monetary unions
- III. Necessary preconditions for successful union
- IV. What form of monetary union to choose?
  - currency board, dollarization, or regional currency area?
- V. Monetary union operational issues
  - E.g. nominal anchor, policy discipline
- VI. Status of existing and proposed currency areas
  - E.g. European monetary union
  - Unions in Africa, Asia, Latin America

# I. Taxonomy of Exchange Rate Arrangements

## ● **Hard pegs and monetary unions**

- **Regional currency unions:** members all use a common currency
- **“dollarized” currency:** use another foreign currency as legal tender
- **currency board:** domestic currency “locked” to a foreign currency through an institutional rule

## ● **Intermediate exchange rate regimes**

- **conventional peg:** peg to single or basket of foreign currencies
- **horizontal band:** peg within band around fixed par value
- **crawling peg:** depreciation rate fixed against a foreign currency
- **crawling band:** XR can adjust within a band around crawling par value

## ● **Flexible exchange rate regimes**

- **managed float**
- **free float:** if the central bank does not intervene

# Trends in Exchange Rate Arrangements

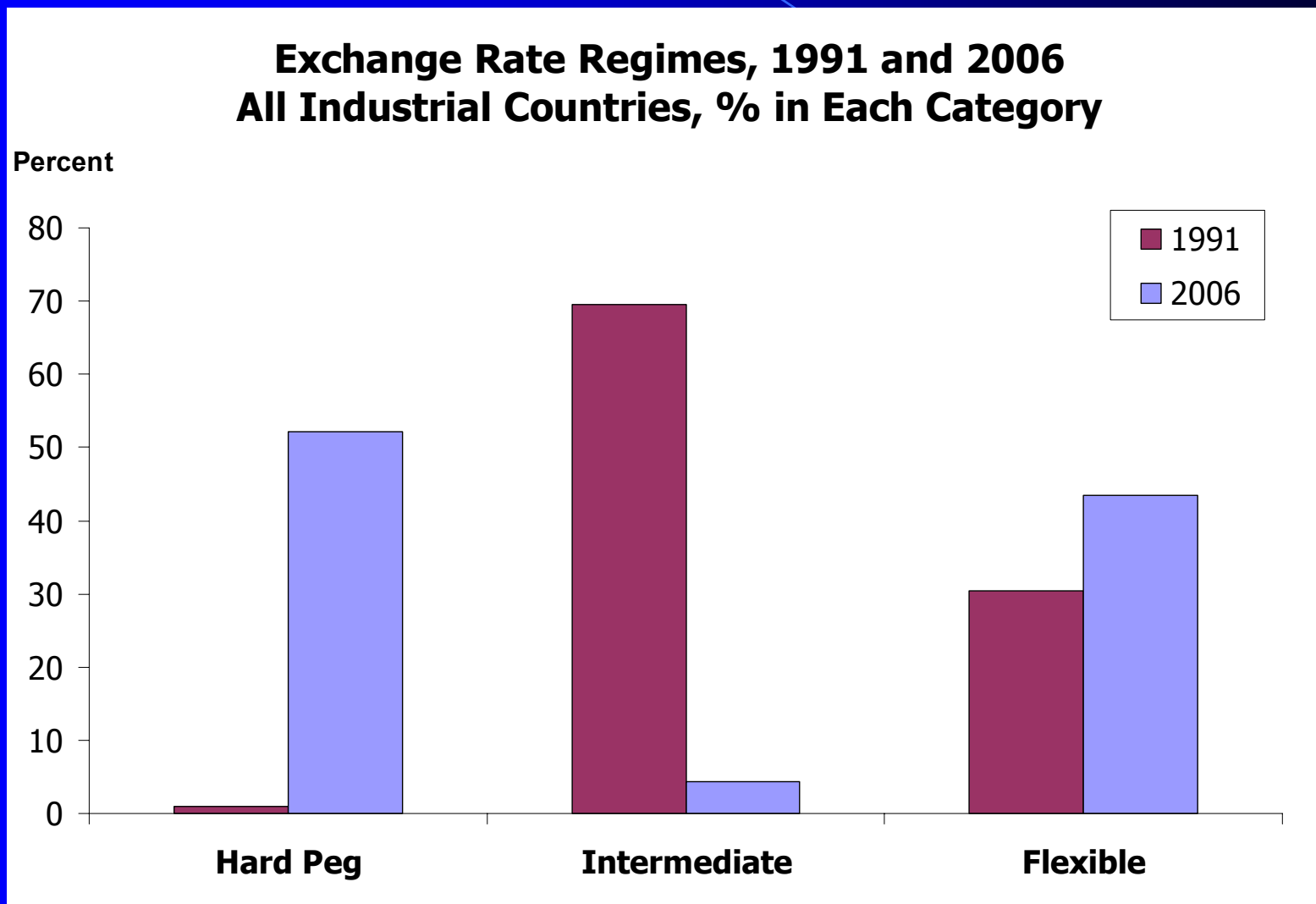
## ● Industrial countries:

- Relatively few industrial countries maintain intermediate regimes
- European countries have moved towards currency union; other countries have maintained flexible exchange rates

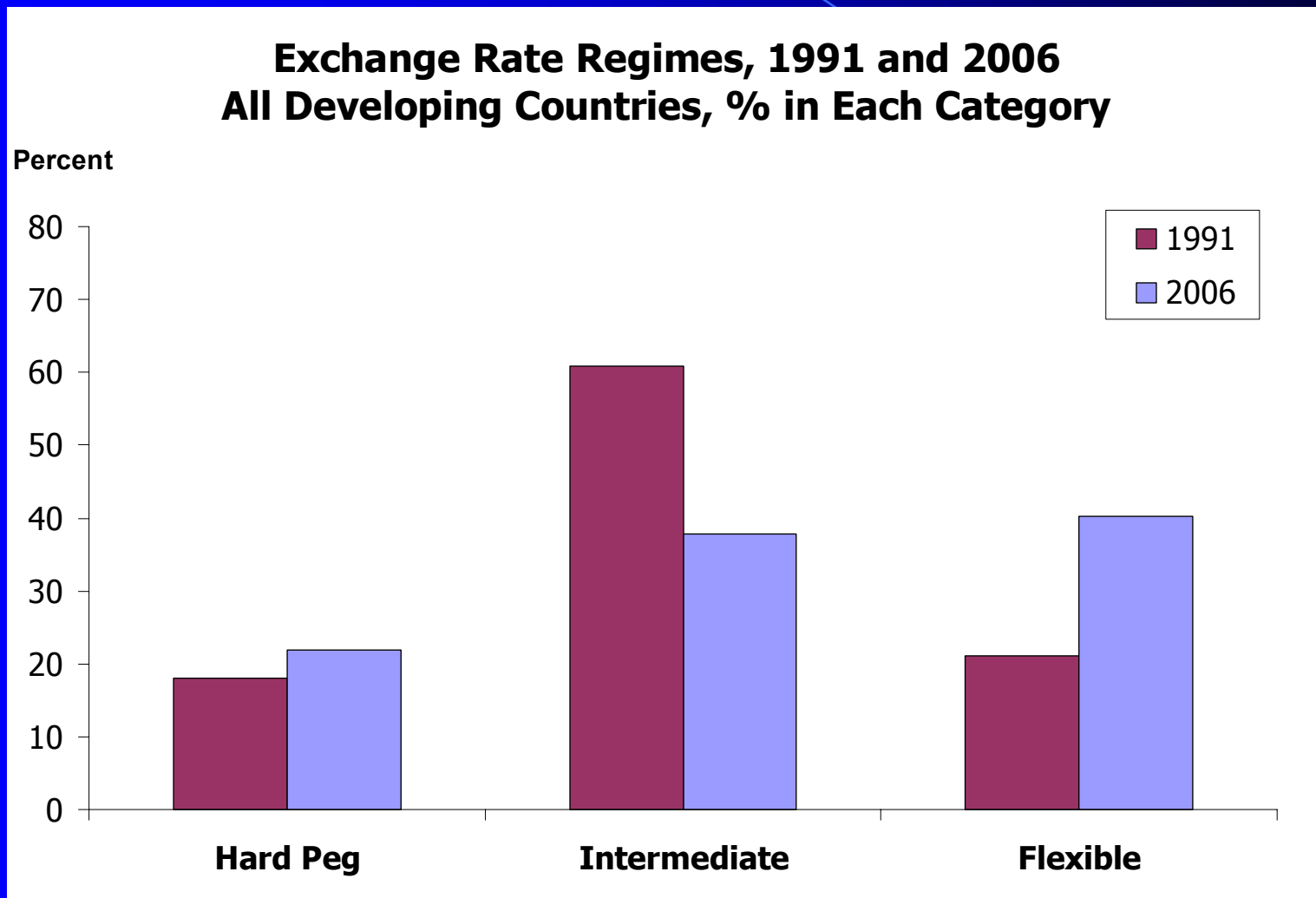
## ● Developing countries:

- Many countries with (formal or informal) pegged regimes have found they are vulnerable to speculative attack and have moved away from intermediate regimes
- Some have allowed greater flexibility
- Some have moved to or are considering moving to harder pegs:
  - Currency boards
  - Unilateral adoption of another currency (dollarization)
  - Regional currency areas

# Industrial countries have moved away from intermediate regimes.



# Developing countries have moved away from intermediate exchange rate regimes as well.



# Types of Hard Pegs and Monetary Unions

- Currency boards
- Unilateral official adoption of another currency
  - E.g. Dollarization, euroization
- Regional currency areas

# Some Current Currency Boards

| Region               | Country                          | Anchor Currency | Date Started |
|----------------------|----------------------------------|-----------------|--------------|
| <b>Europe</b>        | Bosnia and Herzegovina           | Euro            | 1997         |
|                      | Bulgaria                         | Euro            | 1997         |
|                      | Estonia (part of ERM II)         | Euro            | 1992         |
|                      | Lithuania (part of ERM II)       | Euro            | 1994         |
| <b>Africa</b>        | Djibouti                         | US\$            | 1949         |
|                      | Lesotho                          | Rand            | 1980         |
|                      | Namibia                          | Rand            | 1993         |
| <b>Asia</b>          | Hong Kong                        | US\$            | 1983         |
| <b>Latin America</b> | Argentina (till early 2002)      | US\$            | 1991         |
|                      | Eastern Caribbean Monetary Union | US\$            | 1950         |
|                      | Numerous small countries         |                 |              |



# Officially Dollarized Economies

| Region               | Country                                  | Currency Adopted | Date Adopted |
|----------------------|--|------------------|--------------|
| <b>Europe</b>        | Kosovo                                   | Euro             | 2001         |
|                      | Montenegro                               | Euro             | 1999         |
| <b>Africa</b>        | Namibia                                  | Rand             | 1992         |
|                      | Lesotho                                  | Rand             | 1974         |
|                      | Swaziland                                | Rand             | 1974         |
| <b>Asia</b>          | Timor-Leste                              | US\$             | 2002         |
| <b>Latin America</b> | Ecuador                                  | US\$             | 2000         |
|                      | El Salvador                              | US\$             | 2001         |
|                      | Panama                                   | US\$             | 1904         |
|                      | Numerous small states in Europe, Oceania | US\$ or Euro     |              |

# Current Regional Currency Areas

| <b>Area</b>  | <b>Currency Adopted</b> | <b>Date Started</b> | <b>Number of members</b> |
|--|-------------------------|---------------------|--------------------------|
| <b>European Monetary Union (EMU)</b>                           | Euro                    | 1999                | 12                       |
| <b>Central African Economic and Monetary Community (CAEMC)</b> | Euro                    | 1945                | 6                        |
| <b>West African Economic and Monetary Union (WAEMU)</b>        | Euro                    | 1945                | 8                        |
| <b>East Caribbean Currency Union (ECCU)</b>                    | US\$                    | 1950                | 8                        |

## II. *Costs of Forgoing an Independent Currency and Joining a Monetary Union*

### 1. **Loss of nominal exchange rate as a policy tool** for adjusting to country-specific external shocks

- e.g. swings in commodity prices, foreign investment preferences

### 2. **Loss of national monetary policy control**

- If control ceded to foreign central bank through currency board or adoption of a foreign currency
  - ➔ Interest rates depend on foreign central bank's policy choices (e.g. problem of Argentina's currency board).
- If control ceded to a regional central bank
  - ➔ Interest rates more geared toward maintaining stability within the union than for each individual member (e.g. problem of EMU)

## II. *Benefits* of Foregoing an Independent Currency and Joining a Monetary Union

1. Reduced exchange rate risk encourages **more trade**
2. Greater transparency of prices encourages **greater competition** and efficiency
3. Increased economic **policy discipline**, i.e. for some countries removing possibility of monetary flexibility can be a good thing:
  - Link to credible foreign currency can lower inflation expectations
  - Common central bank may commit more credibly to price stability than individual national central banks

➔ **import macro stability**, i.e. lower inflation

  - E.g. High-inflation Southern European countries prior to EMU, Central European countries today, Argentinian currency board
4. Stronger **political ties** with other countries in union

### III. Preconditions for joining a Monetary Union: Optimal Currency Area (OCA) Criteria

- According to traditional theory of OCAs, common currency is most appropriate for countries with
  1. Similar shocks and business cycles
  2. High trade integration
  3. Flexibility through fiscal transfers
  4. Flexibility through internal labor mobility

# OCA Criteria 1: Similarity of Shocks and Business Cycles

**Economies will want similar monetary policy stance if**

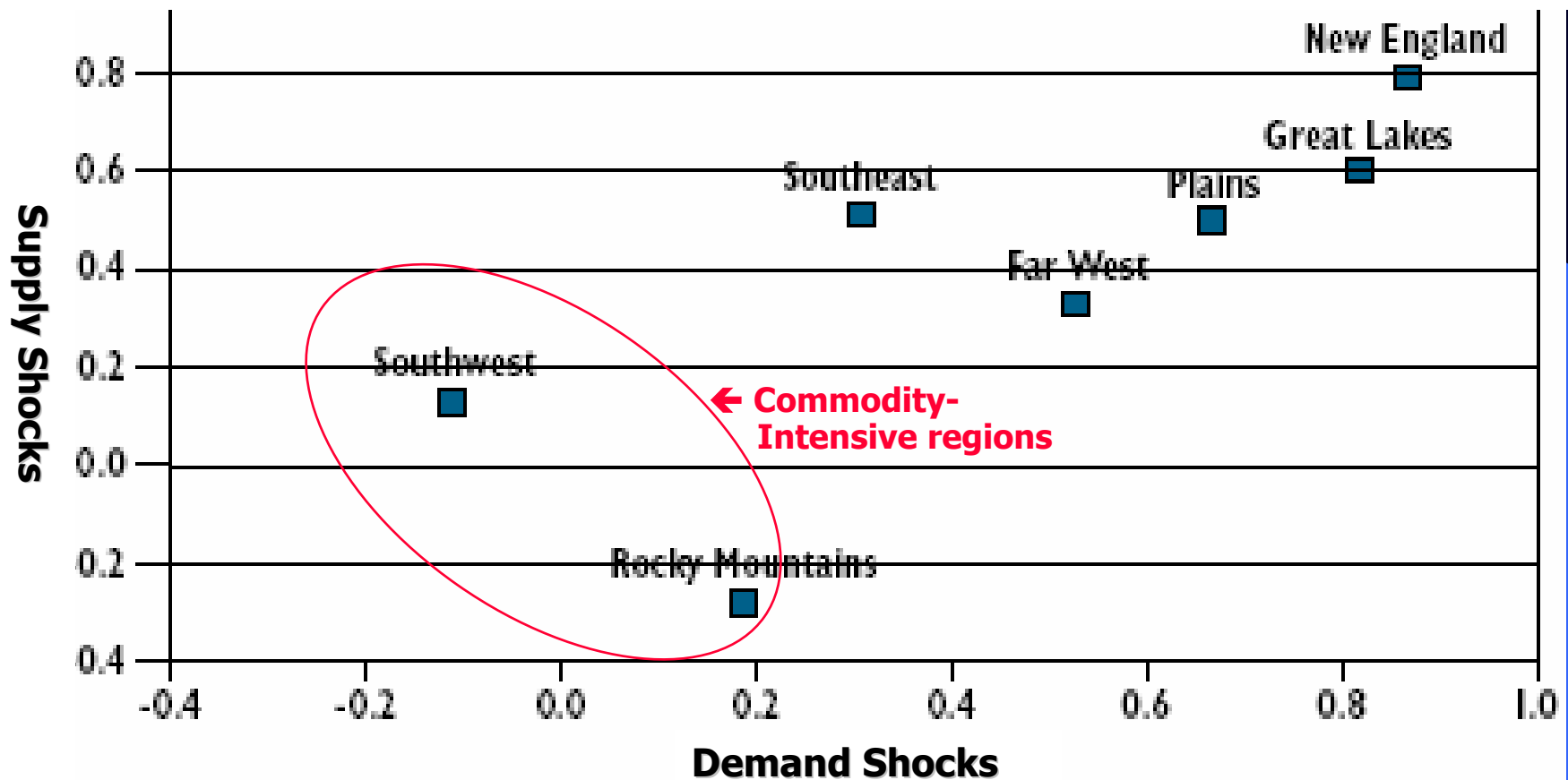
- **Face similar, i.e. symmetric, shocks**
  - since less reason for conflicts over policy
- **Have similar industrial structures**
  - since likely to experience similar shocks
- **Monetary policy affects real economy similarly**
  - since given interest rate policy then has same effect on output gap and inflation
  - Thus, large cross-country differences in labor market institutions, wage flexibility, or financial market development (i.e. extent of private and government debt, banking sector competitiveness)
    - ➔ countries may prefer different interest rate levels, even if use the same currency

## OCA Criteria 2: High Trade Integration

- Greater is trade between countries
  - → more likely shocks are **symmetric**, higher is correlation of business cycle
- More terms of trade move together
  - → more likely shocks are **symmetric**
    - e.g. terms of trade oil-exporting Gulf states similar
    - e.g. terms of trade of oil-exporting Nigeria differ from rest of Africa
    - e.g. In U.S., “terms of trade” of oil-producing and mining states differ from rest of the country, implying supply shocks are asymmetric

# Shocks to U.S. regions are highly correlated, except for commodity-intensive regions

## Correlation of U.S. Supply and Demand Shocks, (Correlations with Mideast Region, 1965-1986)





# OCA Criteria 3

## Flexibility through Fiscal Transfers

- Since monetary policy is unable to respond to shocks hitting individual member countries in a monetary union
  - ➔ **fiscal transfers can cushion the effects of adverse shocks**
- With a **unified fiscal transfer mechanism**, fiscal transfers **across** countries in a monetary union can cushion effects of **asymmetric** shocks
  - e.g. Income transfers from countries less affected by particular shock can make up for losses of income and help keep labor and capital employed
- In **absence of a unified fiscal mechanism**, fiscal transfers must occur **within** individual countries
  - e.g. allow greater deficits during cyclical downturns
  - But this may conflict with fiscal constraint rules

## OCA Criteria 4: Flexibility through Labor Mobility

- Mobile labor internally provides another mechanism of adjustment to shocks by lowering cost of not having independent monetary policy
  - E.g. In U.S., labor moves from depressed regions (e.g. Mid-East “Rust Belt”) to more prosperous regions (e.g. Southwest “Sun Belt”)

# Additional Considerations for Monetary Unions

1. Optimal currency area criteria for monetary unions are partly endogenous
2. Success of monetary union depends on political and institutional factors

# Additional Consideration 1: OCA criteria are partly endogenous

- Joining monetary union may affect characteristics of economy by endogenously
  - A. Increasing trade integration**
  - B. Increasing internal capital mobility**
- Hence joining monetary union itself may
  - *endogenously* effect the degree of symmetry of shocks and business cycle correlations across countries
  - increase ability to insure against adverse shocks by permitting greater borrowing in capital markets
- Country that appears to fail OCA criteria before joining may satisfy them later once inside the union.

## A. Monetary union can endogenously increase trade integration

- Type of integration matters
- Integration can increase **intra-industry** specialization.
  - e.g. one country specializes in car engines, another in car bodies
  - → reduce differences in industry-specific shocks across countries
  - → **more symmetry** of shocks, higher correlation of business cycles.
- Integration can increase **inter-industry** specialization.
  - e.g. one country specializes in car production, another in agriculture
  - → increase differences in industry-specific shocks across countries
  - → **more asymmetry** of shocks, lower correlation of business cycles:
- Empirical evidence suggests intra-union trade **integration is mainly in form of intra-industry** specialization (e.g. Frankel and Rose)

## B. Monetary union can endogenously increase *internal* capital mobility

- Joining a monetary union can **foster development and liquidity of local financial markets** by
  - eliminating exchange rate risk
  - increasing competition and specialization
  - increasing market size and enabling financial institutions to diversify credit risk without incurring foreign exchange risk
- But use of **common currency is not a substitute** for other financial sector reforms.
  - In ECCB, banking activities still restricted to home country.
  - In CFA zone, many bank transactions still routed through France.
- Joining a currency union may eliminate exchange rate risk **but doesn't necessarily lower country risk**
  - e.g. Argentina

## Additional Consideration 2: Political and Institutional Factors

Regional currency area is more likely to work when

- **Other regional institutions are already in place**
  - E.g. customs union
- There is **regional solidarity** and political support
- There is a **political willingness to allow delegation** of monetary policy to a supra-national institution, such as a regional central bank
  - e.g. ECB for Europe
  - Will Asia support a regional central bank?

## IV. Which Form of Monetary Union?

Choice of **regional currency area** (RCA) vs. **currency board/dollarization** depends on

- **Economic considerations:**

- RCA provides greater role in decision making, but requires multilateral cooperation
- Currency board and dollarization be achieved unilaterally

- **Relative country size:**

- Very large economy unlikely to adjust its currency policies to suit a very small economy
- Small economies tend to unilaterally implement a currency board or adopt another currency

- **Political considerations:**

- e.g. RCAs are often associated with broader political objectives and a desire for general regional integration



# Currency Board or Dollarization?

- Dollarization provides **more credibility** than currency board by lowering exchange rate risk and totally eliminating need for a central bank
  - e.g. El Salvador, Ecuador, Guatemala??
- But **with dollarization lose seigniorage revenue**, unless can persuade foreign central bank (i.e. US or EMU) to share seigniorage
  - e.g. South Africa shares seigniorage with other rand-using countries
- **Currency board can serve as quick mechanism** to achieve stability for new governments or as **interim policy** during transition to RCA
  - e.g. Bulgaria, Estonia, Lithuania
- But **with currency board must pay attention to currency mismatches** of domestic financial system; not immune to crisis
  - e.g. Argentine private and public sectors built up \$-denominated debt

## V. Operational Issues for Monetary Unions

1. Choice of nominal anchor for monetary policy
2. Operation of monetary authority
  - a. Currency board
  - b. Regional central bank of currency area
3. Necessary rules for policy discipline

# 1. Choice of Nominal Anchor for Monetary Policy

- Can **fix** exchange rate against a major international currency
  - E.g. ECCA, CFA zones
- Can **float**
  - Provides flexibility in dealing with external shocks
  - EMU is only regional currency area (RCA) with floating currency
  - Floating rate requires anchoring monetary policy through independent regional central bank and inflation targeting

# Regional Currency Areas and Nominal Anchors

| <b>Area</b>  | <b>Currency Adopted</b> | <b>Date Started</b> | <b>Nominal Anchor</b>           |
|--|-------------------------|---------------------|---------------------------------|
| <b>European Monetary Union (EMU)</b>                           | Euro                    | 1999                | Floating euro, Inflation target |
| <b>Central African Economic and Monetary Community (CAEMC)</b> | Euro                    | 1945                | Currency pegged to Euro         |
| <b>West African Economic and Monetary Union (WAEMU)</b>        | Euro                    | 1945                | Currency pegged to Euro         |
| <b>East Caribbean Currency Union (ECCU)</b>                    | US\$                    | 1950                | Currency board peg to US\$      |

## 2a. Operation of Monetary Authority: Currency Board

- Technically, currency board automatically guarantees **full backing of monetary base by reserve currency at a fixed rate**
- Currency board **does not fully back broad money supply** (currency + bank deposits)
- **Not immune from crisis**, particularly if fiscal policy not disciplined or economy not flexible enough
  - e.g. Argentina

## 2b. Operation of Monetary Authority: Regional Central Bank

Establishing and operating regional central bank requires **agreement on how decisions are taken** and on how policymakers making decisions will be held accountable:

- **How many countries represented on bank's policy board?**
  - European Central Bank consists of 6-member governing board + heads of 12 national central banks of euro zone
  - Federal Reserve consists of 7 governors + rotating set of 4 Presidents of the 12 Reserve District Banks
- **How will individual country views be aggregated?**
  - Will a majority be permitted to override the wishes of a dissenting minority, which would seem essential for a quick response to unfolding events, or
  - Will decisions have to be taken unanimously?
- **What is the mechanism for holding policymakers accountable?**
  - Will day-to-day policy decisions be delegated to an executive board of independent experts with no particular national affiliation?

### 3. Policy Discipline Rules

Need rules to join and belong to RCA:

- **Prevent monetary financing** of fiscal deficits
- Satisfy **numerical convergence criteria** for macro performance, e.g. inflation, exchange rates, interest rates
  - Initial qualification for joining to demonstrate political commitment and economic suitability for RCA
- Possible need for **constraints on members' national fiscal policies**
  - Avoid spillover effects of excessive borrowing by one government on interest rates for rest of union
  - Avoid pressure on regional central bank to relax monetary policy stance

# European Monetary Union (EMU) Convergence Criteria

## ● **Delors Report** (1989):

- three-stage transition to replace all national currencies with a single European currency, managed by a sole central bank

## ● **Maastricht Convergence Criteria** (1992)

- Inflation  $< 1.5\%$  + average of 3 lowest countries.
- Long-term interest rate  $< 2\%$  + average of 3 lowest countries
- Public sector deficit  $< 3\%$  of GDP.
- Public debt  $< 60\%$  of GDP.
- Exchange rate within Exchange Rate Mechanism (ERM) bands.

## ● **Stability and Growth Pact** (1997)

- Fines and sanctions for failing to meet fiscal constraints, with exceptions for natural disasters, recessions



# European Monetary Union

## EMU-13

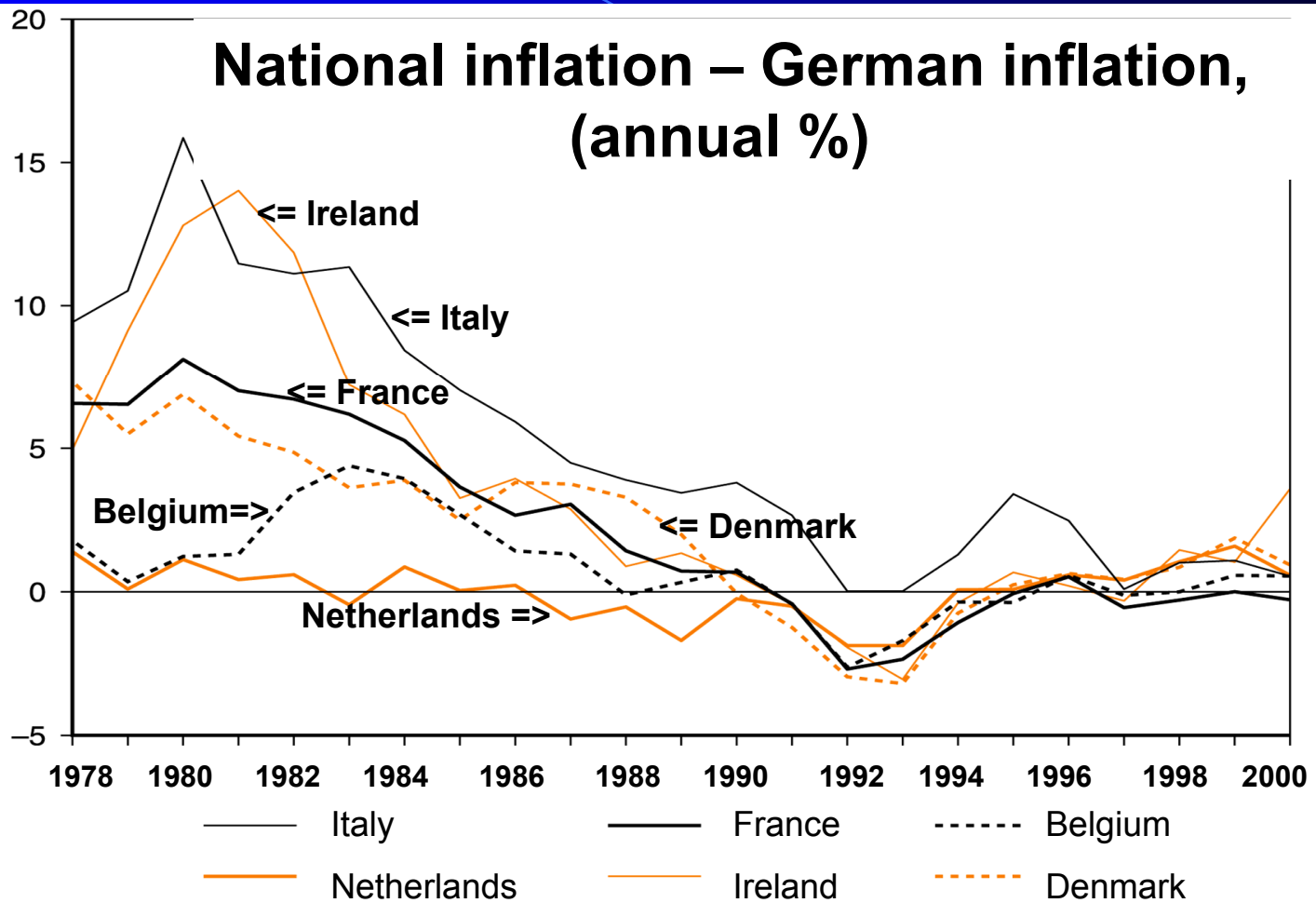
Austria  
Belgium  
France  
Germany  
Finland  
Italy  
Ireland  
Luxembourg  
Netherlands  
Portugal  
Spain  
Greece (2001)  
Slovak Rep. (2007)

## In original EU-15, but not yet in EMU

UK  
Denmark  
Sweden

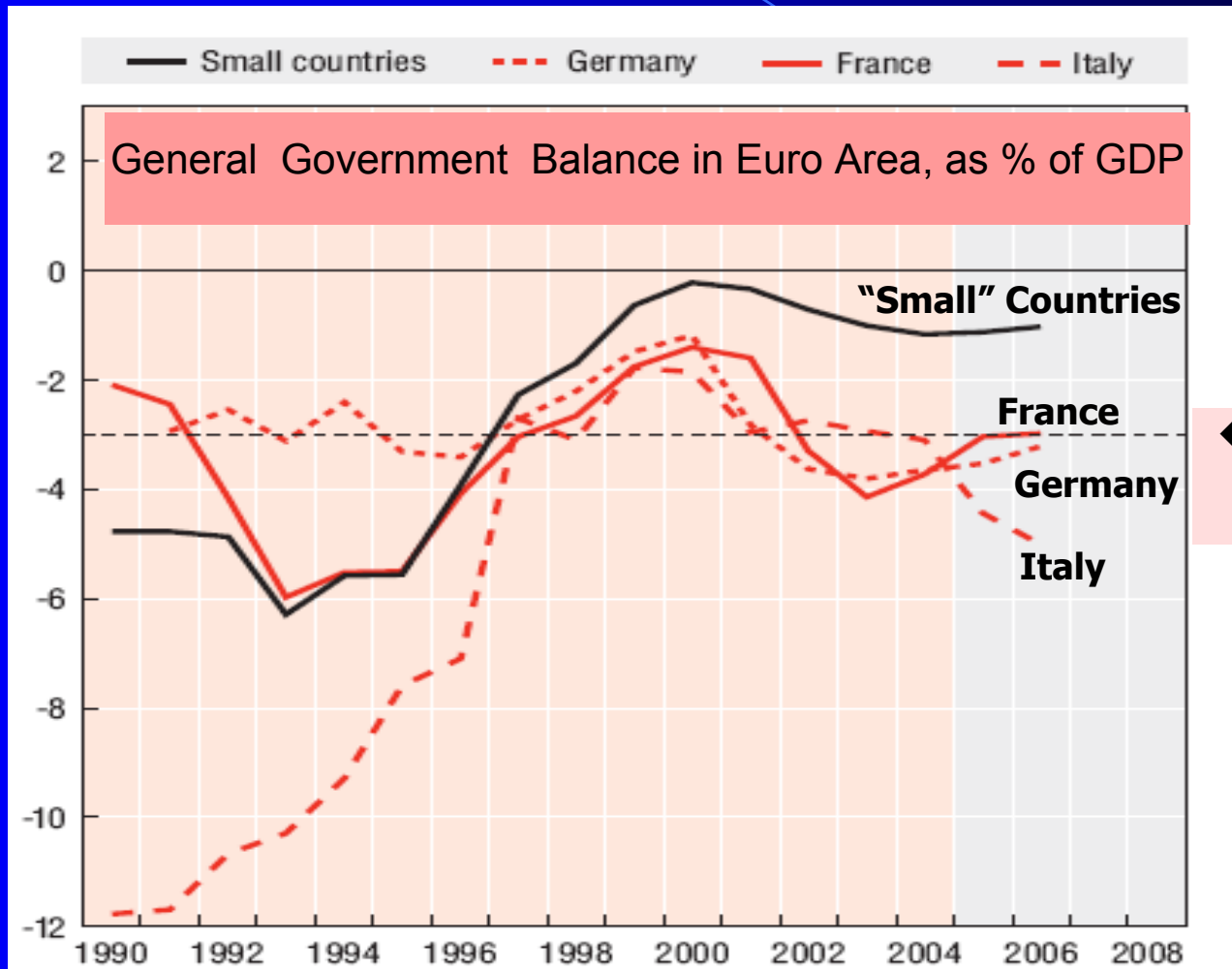


# Inflation converged significantly for original 6 EMS members ...



Shows the difference between domestic inflation and German inflation for each of the original 6 EMS members

# ... but complying with limits on fiscal deficits has been a problem for large countries



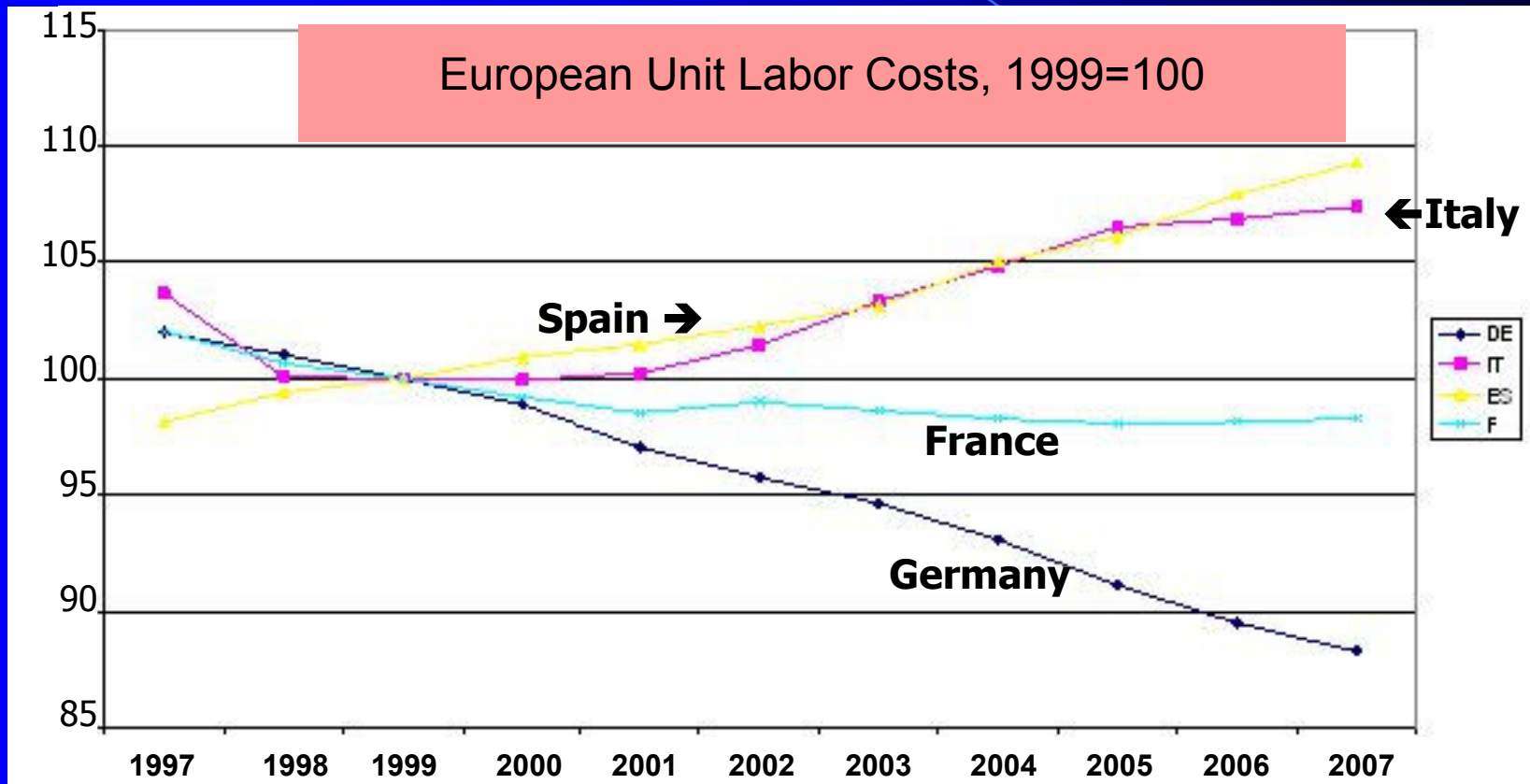
Source: OECD Economic Survey of the Euro Area, July 2005

← Stability Pact Limit

# Revising the Stability Pact

- As with all policy design, there are **trade-offs** between
  - **credibility and transparency** of simple and uniform rules and the
  - **flexibility** that accompanies discretion to allow for each country's unique circumstances
- Thus difficult to reduce fiscal policy rules to a single variable (e.g. budget deficit) and a single number (3%)
- Revised Pact in 2003:
  - Redefine “recession”
    - Include growth slowdowns, mild downturns
  - Exclude certain categories of spending
    - e.g. unification costs of Germany
    - e.g. “international diplomacy costs” of France
  - Rely more on peer pressure, less on formal sanctions and penalties

# A deeper problem is that labor costs and productivity are diverging across Europe



Source: Gros (2006)

# **Alternative View: Barry Eichengreen**

## **Convergence criteria and policy rules are “pseudo” preconditions for monetary union**

- **Numerical convergence criteria not essential, can even be harmful**
  - Requirement to keep  $x_r$  stable while removing capital controls can foster speculative crises
  - Inflation and interest rates are endogenous; will decline in response to (expectations of) a country's acceptance into the monetary union.
  - Inflation criteria should vary according to initial conditions, growth of individual countries
- **Need for constraints on national fiscal deficits and debt is unclear**
  - Numerical limits (e.g. fiscal deficit/GDP of 3%) are arbitrary
  - Need fiscal flexibility to allow response to shocks
  - Fiscal deficits by individual countries likely won't affect the interest rates faced by other union members, since rates determined in global capital markets
  - Costs of fiscal debt defaults likely would still be borne by host country and taxpayers
  - Difficult to enforce constraints on fiscal policy (e.g. Stability Pact)
- **Unified fiscal transfer mechanism not essential**
  - Europe able to operate monetary union without a unified fiscal transfer mechanism, since individual member states able to do their own fiscal countercyclical stabilization.

## VI. Proposed New or Enlarged Monetary Unions

| Region        | Regional Currency Area   | Target date |
|---------------|--|-------------|
| Europe        | Enlarged EMU (=EMU 12 + New EU 10)                               | 2006-2010   |
| Africa        | West Africa Monetary Zone (WAMZ)                                 | 2009        |
|               | Economic Community of West African States (ECOWAS) (=WAEMU+WAMZ) | ?           |
|               | Kenya, Tanzania, Uganda  | ?           |
|               | South African Development Community                              | ?           |
| Asia          | ASEAN +  | ?           |
|               | South Asian Association for Regional Cooperation (SAARC)         | ?           |
| Arabian Gulf  | Gulf Cooperation Council (Oman to join later)                    | 2010        |
| Latin America | Mercosur   | ?           |
|               | Central American Common Market                                   | ?           |
| South Pacific | Australia-New Zealand  | ?           |

# Enlarging the EU and EMU

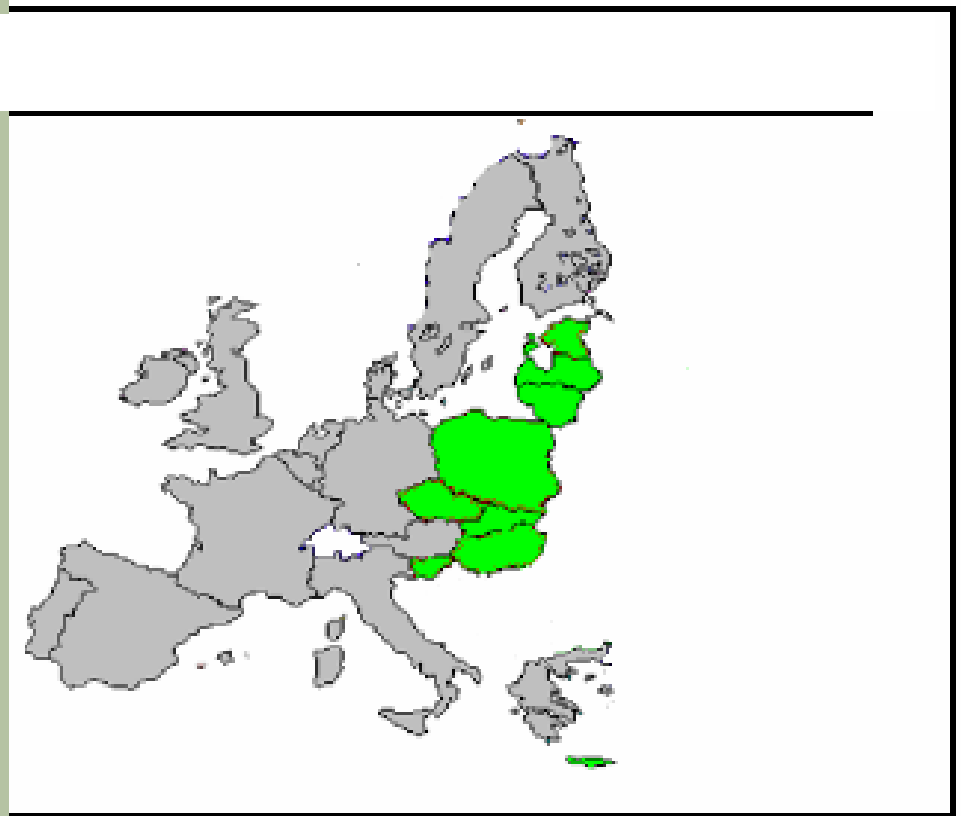
## EU enlarged by 10 countries in 2004:

Czech Republic  
Cyprus  
Estonia  
Hungary  
Latvia  
Lithuania  
Malta  
Poland  
Slovak Republic  
Slovenia (in EMU 1/1/07)

## by 2 countries in 2007:

Bulgaria and Romania

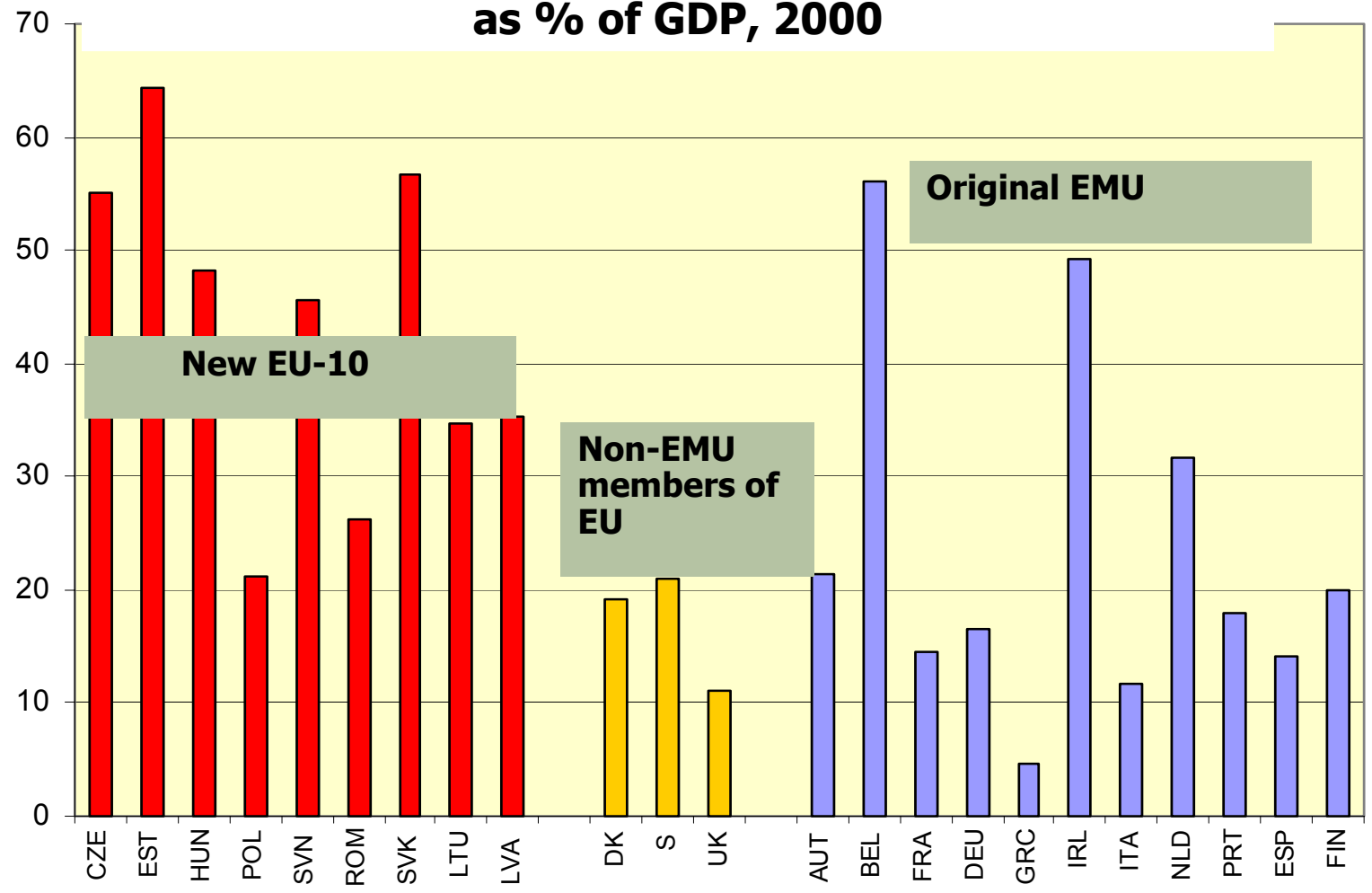
**Must comply with Maastricht convergence criteria and satisfy ERM-II rules for stable exchange rates for at least 2 years to be eligible to join EMU**





# EU-10 are at least as open as current EMU

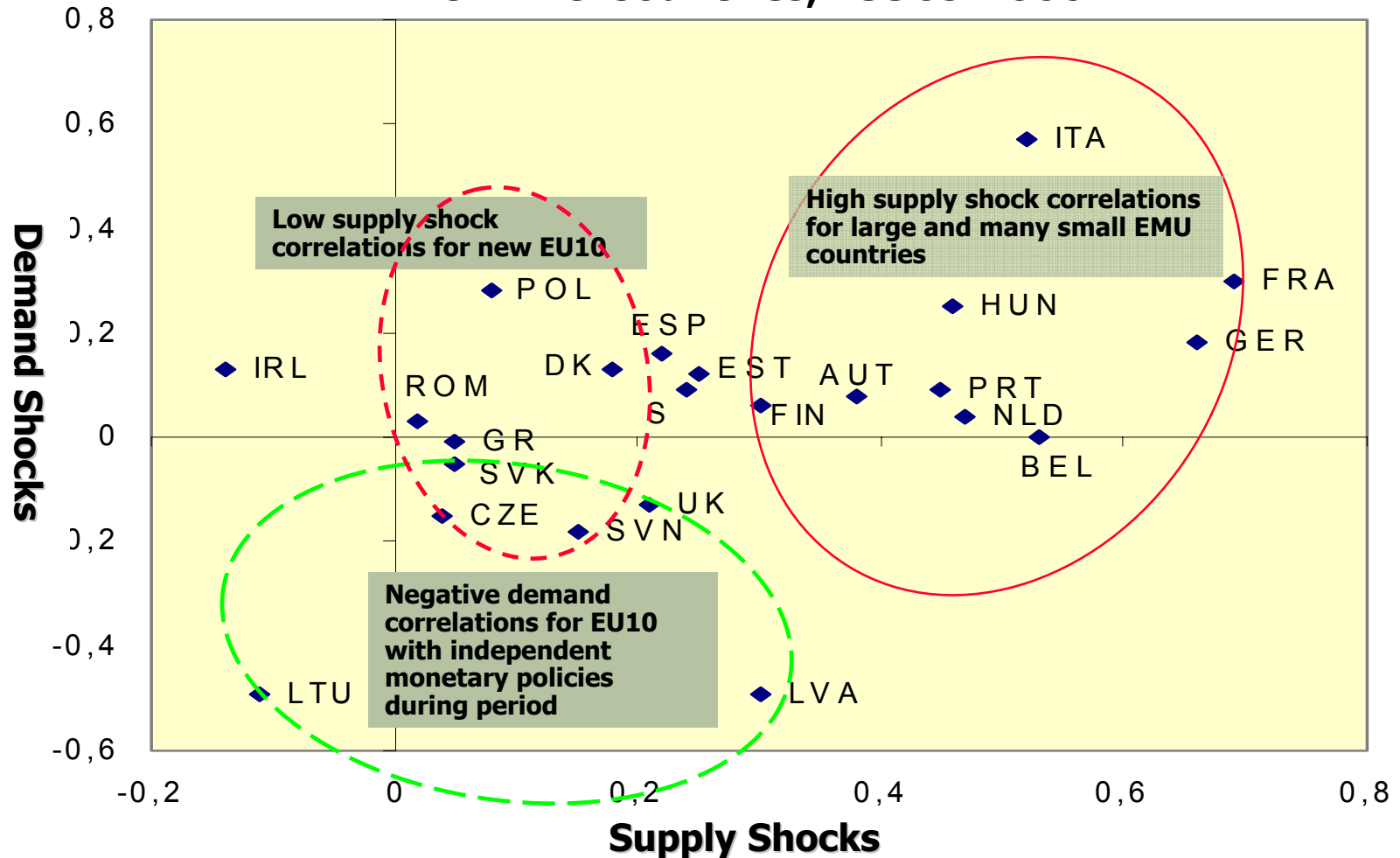
**Exports of Goods and Services Towards EU15,  
as % of GDP, 2000**



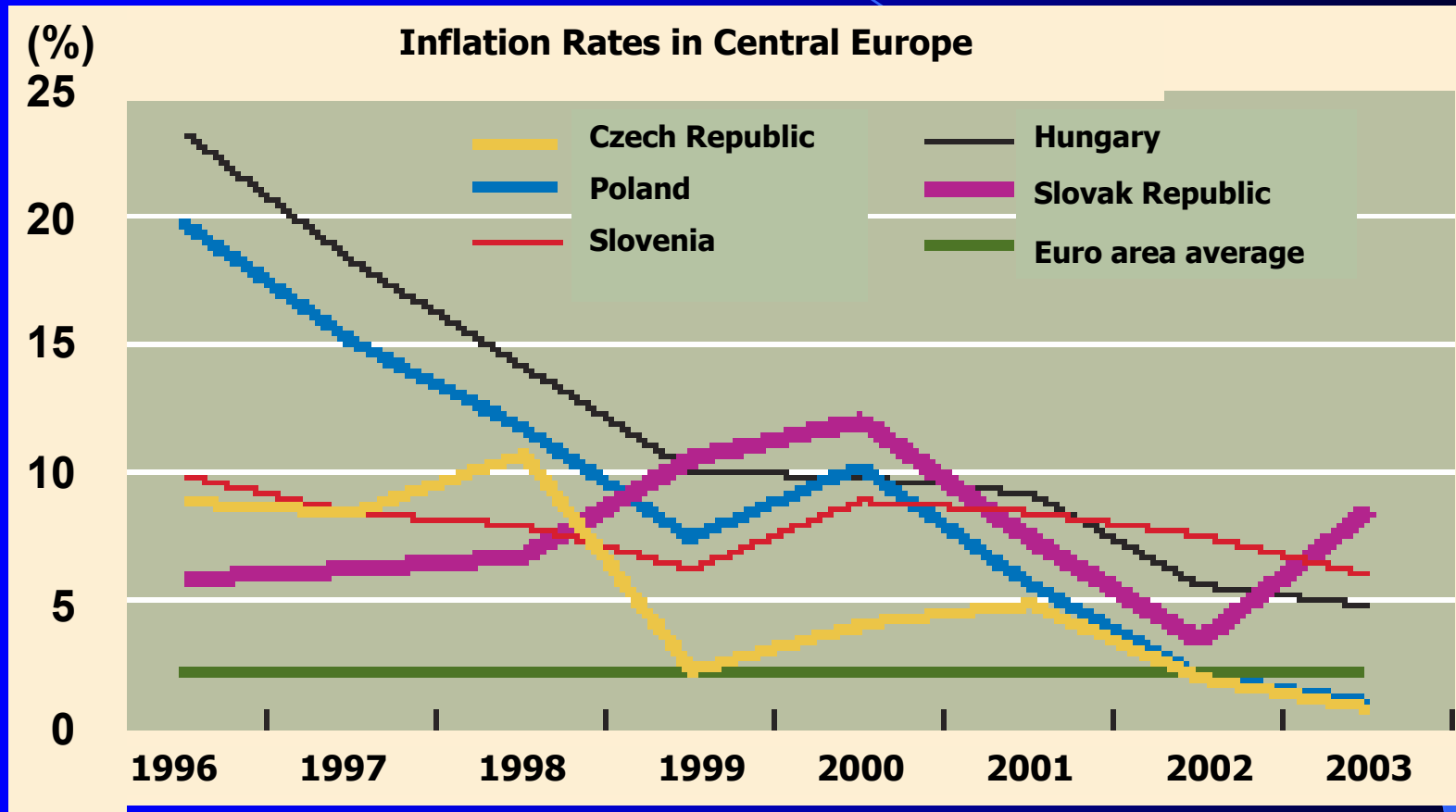
Source: De Grauwe

# But many EU-10 countries have asymmetric demand and supply shocks vv. Euro area

## Correlation of Supply and Demand Shocks with EMU Countries, 1990s-2000



# Inflation in Eastern European economies has been converging to the euro-area average ...



Source: Schadler, IMF Finance and Development, June 2004

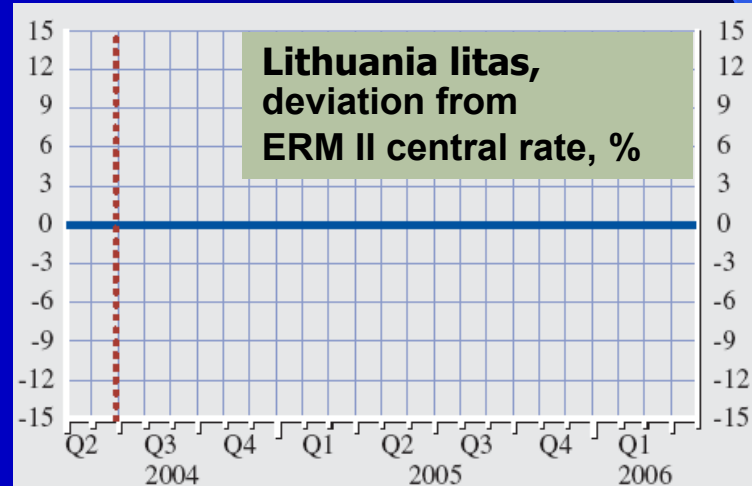
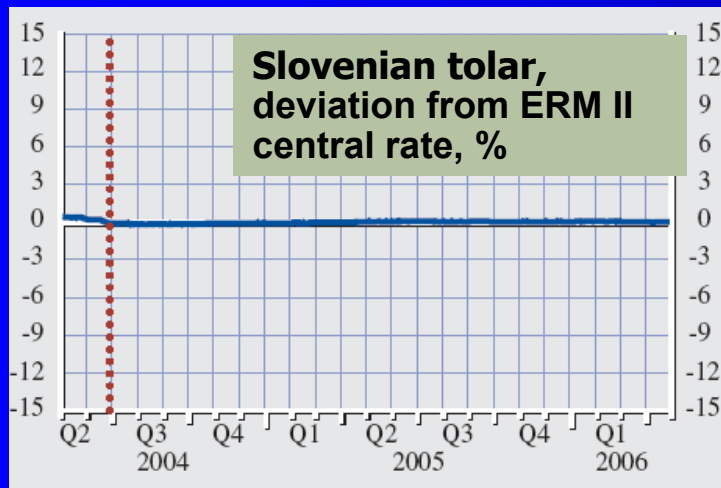
# ... but fiscal deficits in many Eastern European countries exceed the Euroarea-12 average

| <b>Fiscal Positions in Eastern Europe, 2006</b><br>(% of GDP) |                       |                   |
|---|-----------------------|-------------------|
|   | <b>Fiscal Balance</b> | <b>Govt. Debt</b> |
| <b>Estonia</b>  | 1.4                   | 3.6               |
| <b>Latvia</b>   | -1.0                  | 11.3              |
| <b>Lithuania</b>  | -0.6                  | 18.9              |
| <b>Slovenia</b>   | -1.9                  | 29.9              |
| <b>Czech Republic</b>   | -3.2                  | 31.5              |
| <b>Hungary</b>  | -6.7                  | 59.9              |
| <b>Poland</b>   | -3.0                  | 45.5              |
| <b>Slovak Republic</b>  | -2.7                  | 34.3              |
| <b>Euroarea-12</b>  | -2.4                  | 70.5              |

# Slovenia just entered EMU, but Lithuania did not

## Convergence Criteria Slovenia and Lithuania, March 2006

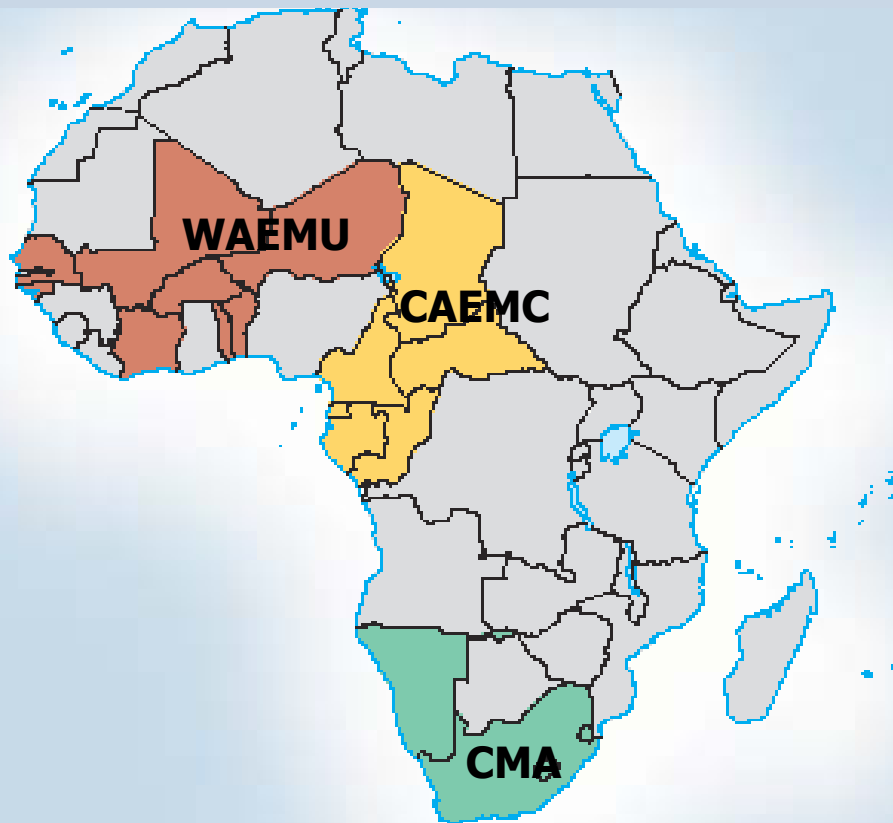
|                  | Inflation rate | Long-term interest rate | Fiscal balance (% of GDP) | Govt. debt (% of GDP) |
|------------------|----------------|-------------------------|---------------------------|-----------------------|
| <b>Slovenia</b>  | 2.3            | 3.8                     | -1.9                      | 29.9                  |
| <b>Lithuania</b> | 2.7            | 3.7                     | -0.6                      | 18.9                  |
| <b>Criteria</b>  | < 2.6          | < 5.9                   | <  -3.0                   | < 60                  |
| <b>EMU avg.</b>  | 2.3            | 3.4                     | -2.4                      | 70.8                  |



# Conclusion on EMU Enlargement

- Some countries are closer to joining the EMU than others
  - E.g. Baltic countries
- Most new accession countries have a way to go until they satisfy convergence criteria and can join the EMU.

# Existing Regional Currency Areas in Africa: CMA, CAEMC, and WAEMU



-  **Common Monetary Area (CMA) members:**  
Lesotho, Namibia, South Africa, and Swaziland
-  **Economic and Monetary Community for Central Africa (CAEMC) members:**  
Cameroon, Central African Republic, Chad, Republic of Congo, Equatorial Guinea, and Gabon
-  **West African Economic and Monetary Union (WAEMU) members:**  
Benin, Burkina Faso, Côte d'Ivoire, Guinea-Bissau, Mali, Niger, Senegal, and Togo

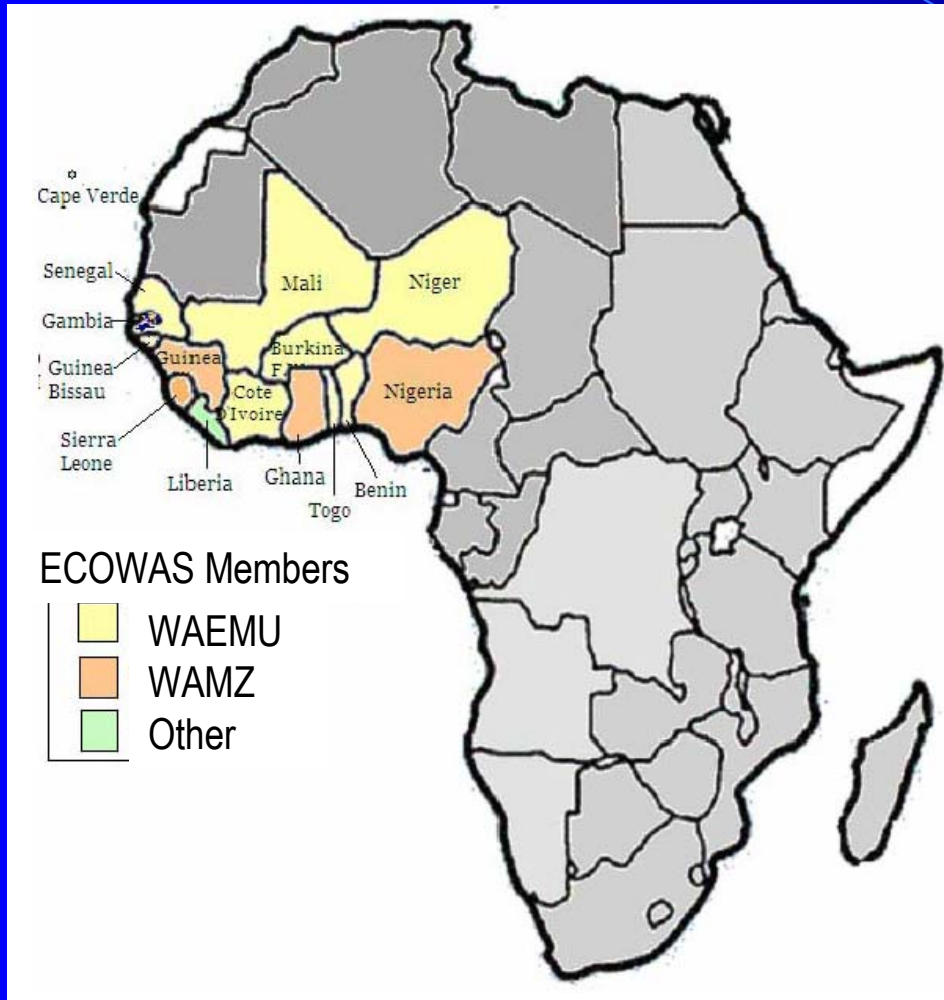
**Note: CAEMC and WAEMU are sub-zones of the CFA franc zone**

# CFA Zone

- 15 sub-Saharan African countries grouped into two separate areas:
  - **West African Economic and Monetary Union (WAEMU)**
    - Benin, Burkina Faso, Cote d'Ivoire, Guinea-Bissau, Mali, Niger, Senegal, and Togo.
  - **Central African Economic and Monetary Union (CAEMC)**
    - Cameroon, Chad, Congo, Central African Republic, Equatorial Guinea, and Gabon.
- Each area has its own regional central bank
  - Central Bank of West African States (BCEAO) for WAEMU.
  - Bank of Central African States (BEAC) for CAEMC.
  - which issues its own variant of the CFA franc, which is fully convertible and pegged to the Euro at rate of 656:1.????
- France guarantees convertibility for the CFA franc
  - via a system of “operations accounts” maintained at the French Treasury (in exchange France participates on the governing board of the central banks)
- Interest differentials exist with euro because of capital flow restrictions



# Proposed Monetary Union within Economic Community of West African States (ECOWAS) involving WAMZ, to be combined later with WAEMU



**WAEMU = West African Economic and Monetary Union (West CFA Zone)**

**Benin  
Burkina Faso  
Côte d'Ivoire  
Guinea-Bissau  
Mali  
Niger  
Senegal  
Togo**

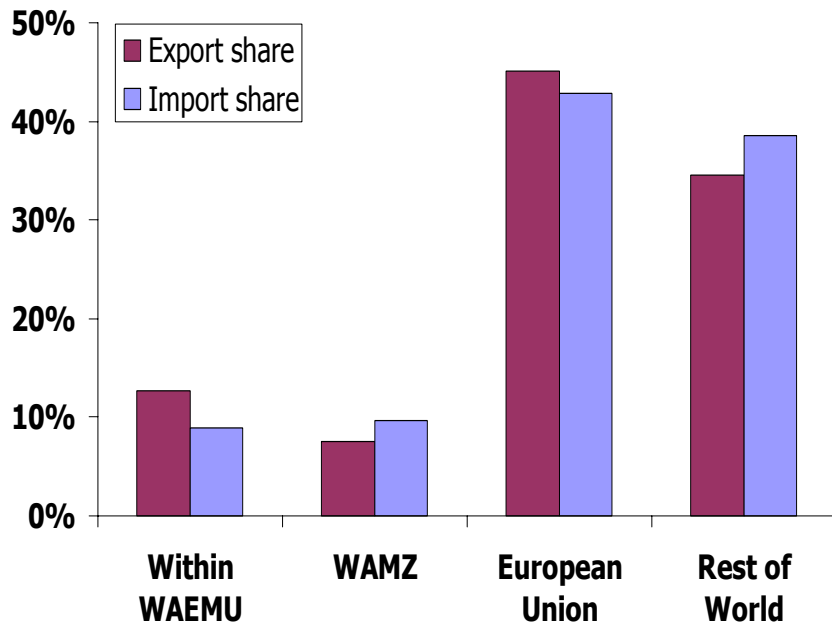
**WAMZ = West African Monetary Zone**

**Gambia, The  
Ghana  
Guinea  
Nigeria  
Sierra Leone**

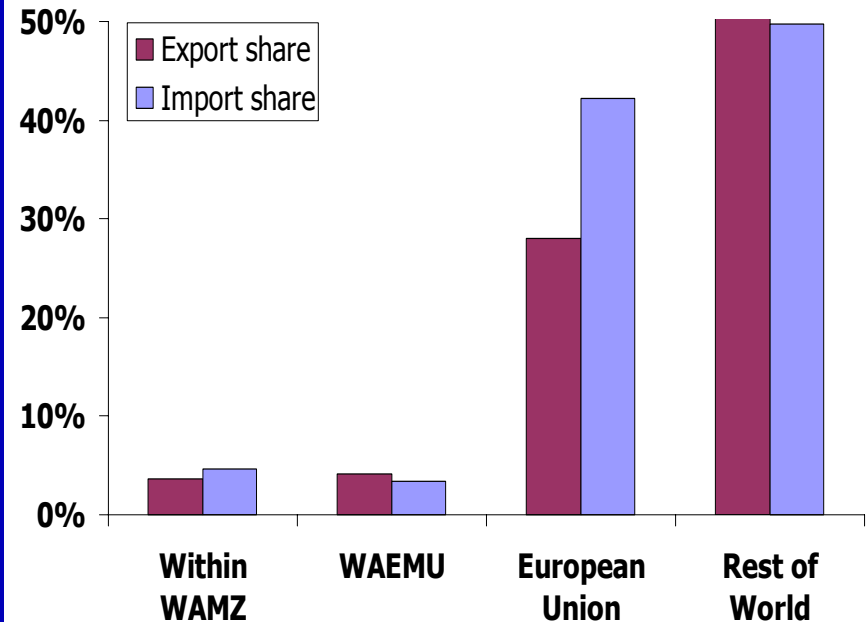
**Cape Verde  
Liberia**

# WAEMU and WAMZ countries trade a lot with Europe and the rest of the world, but not much with each other

## WAEMU Country Trade, 2002



## WAMZ Country Trade, 2002

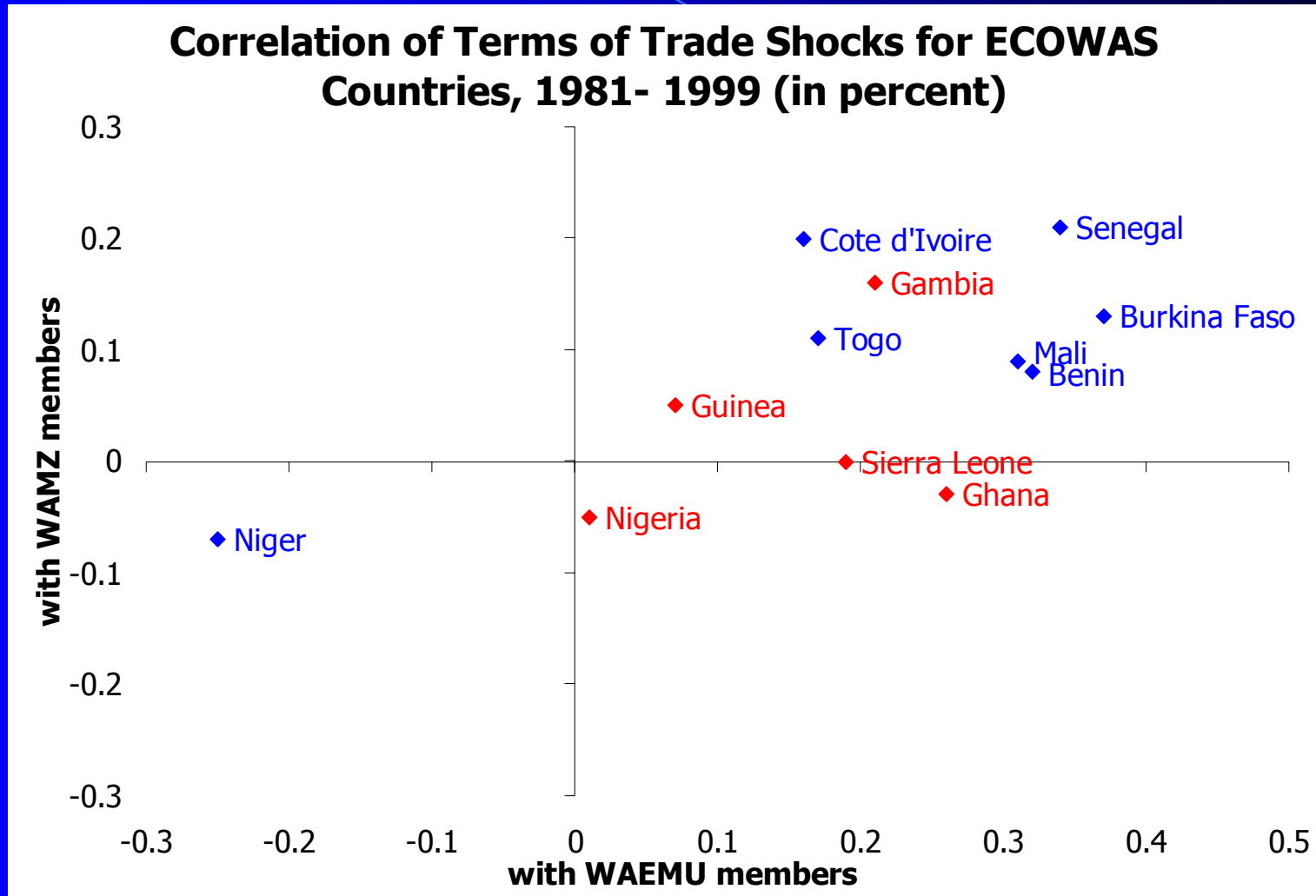


**West African Economic and Monetary Union (WAEMU) consists of Benin, Burkina Faso, Côte d'Ivoire, Guinea-Bissau, Mali, Niger, Senegal, Togo**

**West Africa Monetary Zone (WAMZ) consists of The Gambia, Ghana, Guinea, Nigeria, Sierra Leone**

Source: Masson and Patillo (2003)

# WAEMU countries have correlated terms of trade shocks, but WAMZ countries (e.g. Nigeria) do not

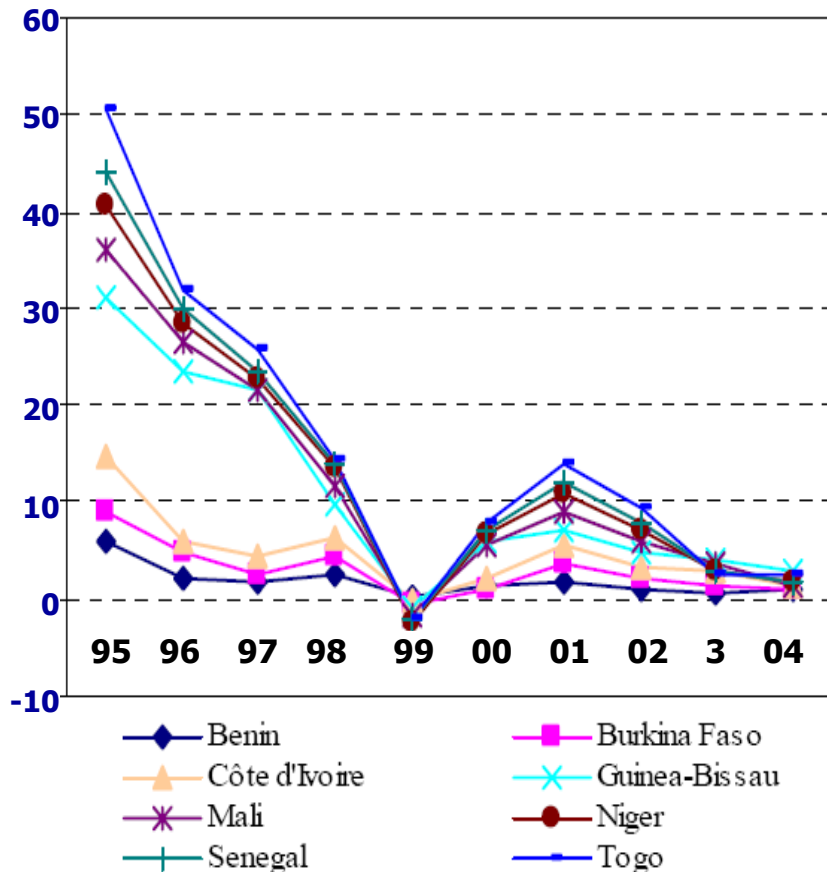


Note: WAEMU members in blue, WAMZ members in red

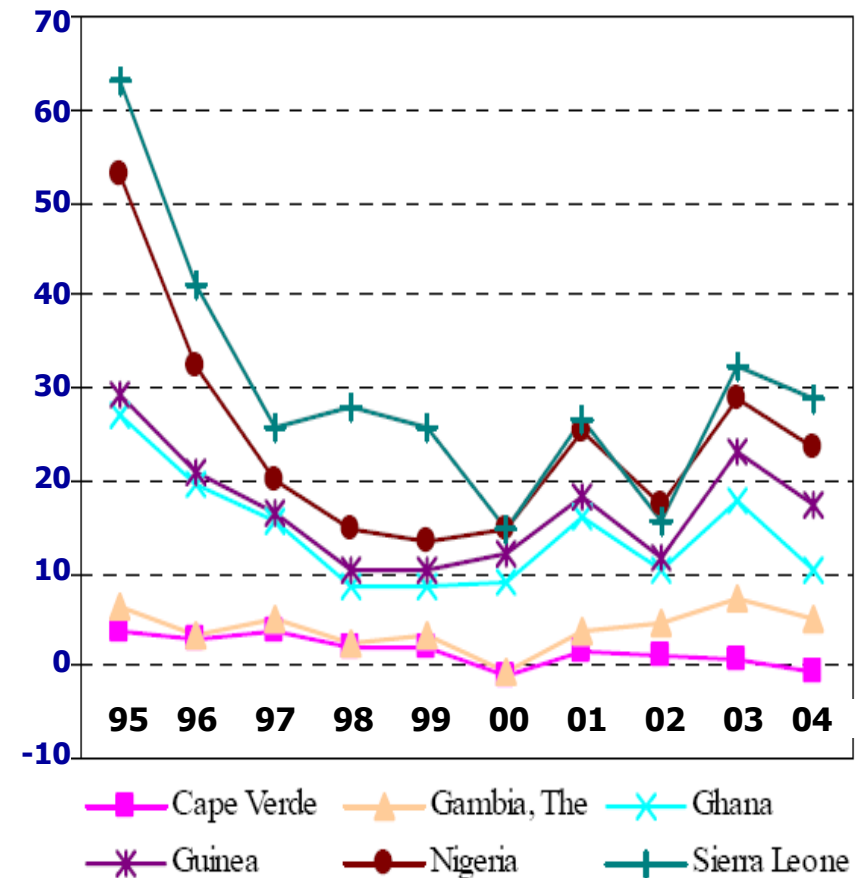
Source: Debrun, Masson, and Patillo (2003)

# Inflation has converged in WAEMU, but not WAMZ

WAEMU: Annual Inflation Rate



WAMZ: Annual Inflation Rate



# WAMZ convergence criteria include 4 primary and 6 secondary indicators

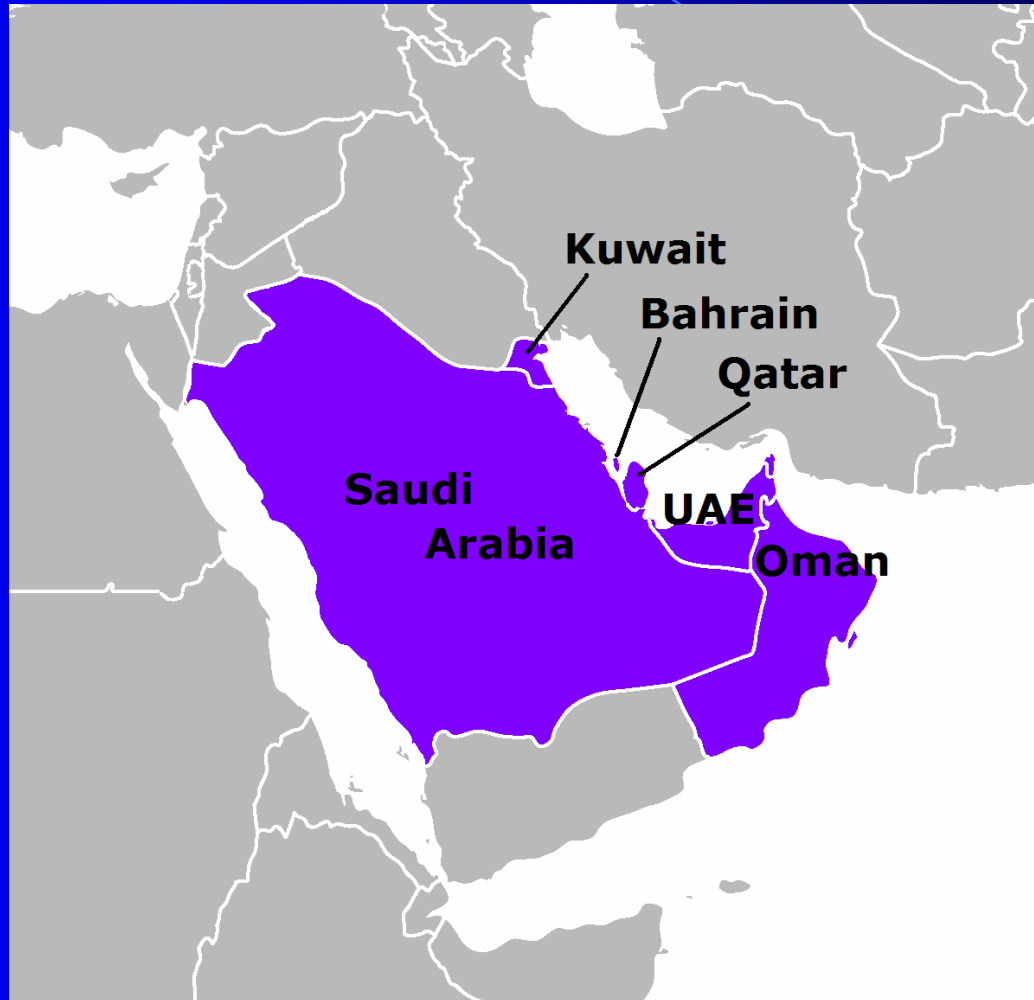
| <b>Selected Convergence Criteria<br/>for WAMZ Countries, 2005</b> |                               |  |                                      |
|---|-------------------------------|--|--------------------------------------|
|   | <b>Inflation<br/>rate (%)</b> | <b>Gross FX<br/>reserves<br/>(in terms of<br/>monthly<br/>imports)</b> | <b>Fiscal balance<br/>(% of GDP)</b> |
| <b>Gambia</b>   | 1.8                           | 4.4  | -7.4                                 |
| <b>Ghana</b>  | 14.8                          | 4.0  | -7.5                                 |
| <b>Guinea</b>   | 29.7                          | 2.0  | -0.8                                 |
| <b>Nigeria</b>  | 11.6                          | 19.7   | -1.1                                 |
| <b>Sierre Leone</b>   | 12.0                          | 3.5  | -12.3                                |
| <b>Criteria</b>   | < 10.0                        | > 3.0  | <  -4.0                              |
| <b>WAMZ (wt. avg.)</b>  | 13.4                          | 15   | -1.5                                 |

Source: West Africa Monetary Institute (2006) :  
**Yellow cells indicate cases where criteria *not* satisfied**

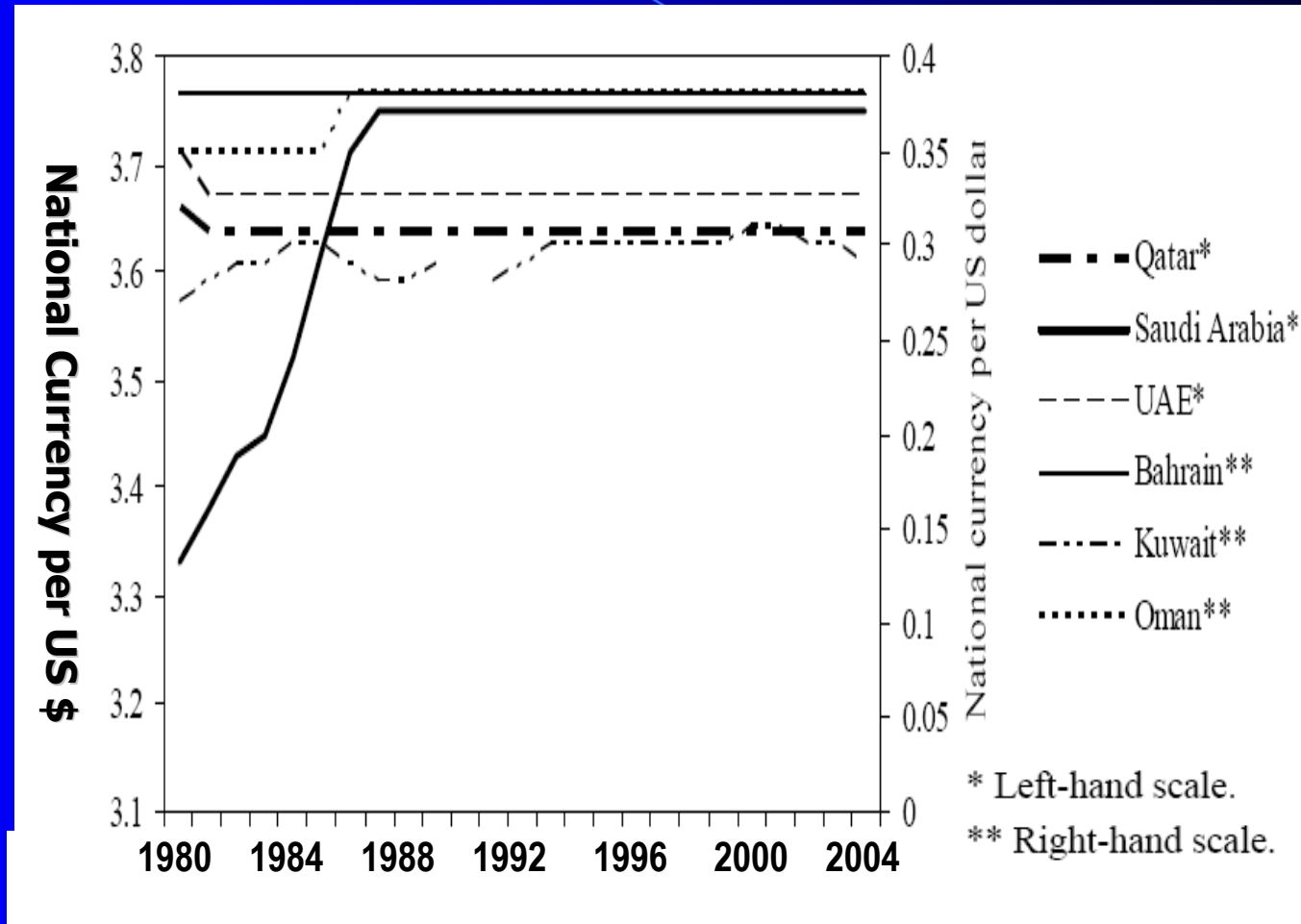
## Conclusions on WAMZ + WAEMU Currency Area

- Nigeria, the largest country, has asymmetric terms of trade shocks with other countries
- Most countries do not yet satisfy convergence criteria.
- Although forming a currency area may produce low inflation, it still cannot guarantee economic growth

# Gulf Cooperation Council (GCC) planned monetary union by 2009 (except Oman)

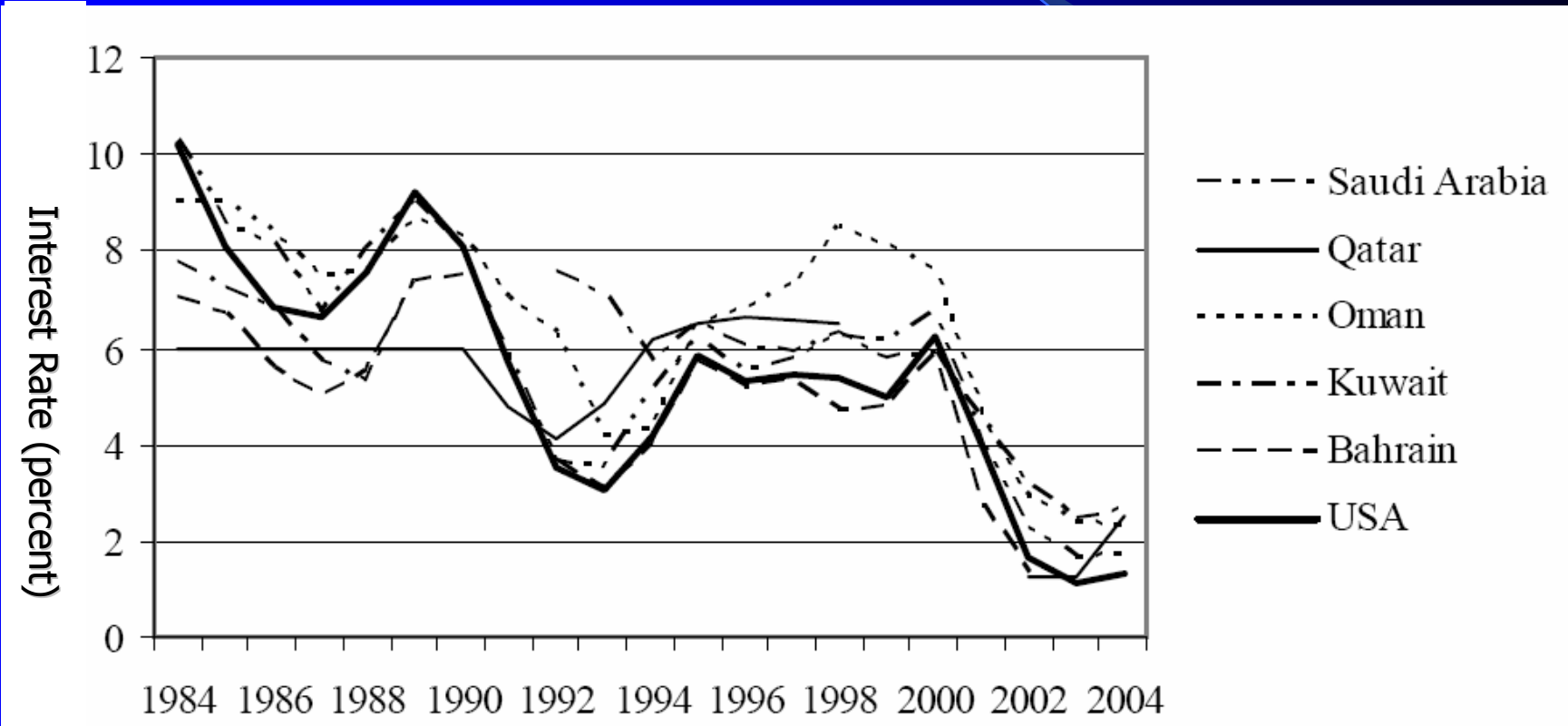


# Countries pegged de facto or de jure to \$

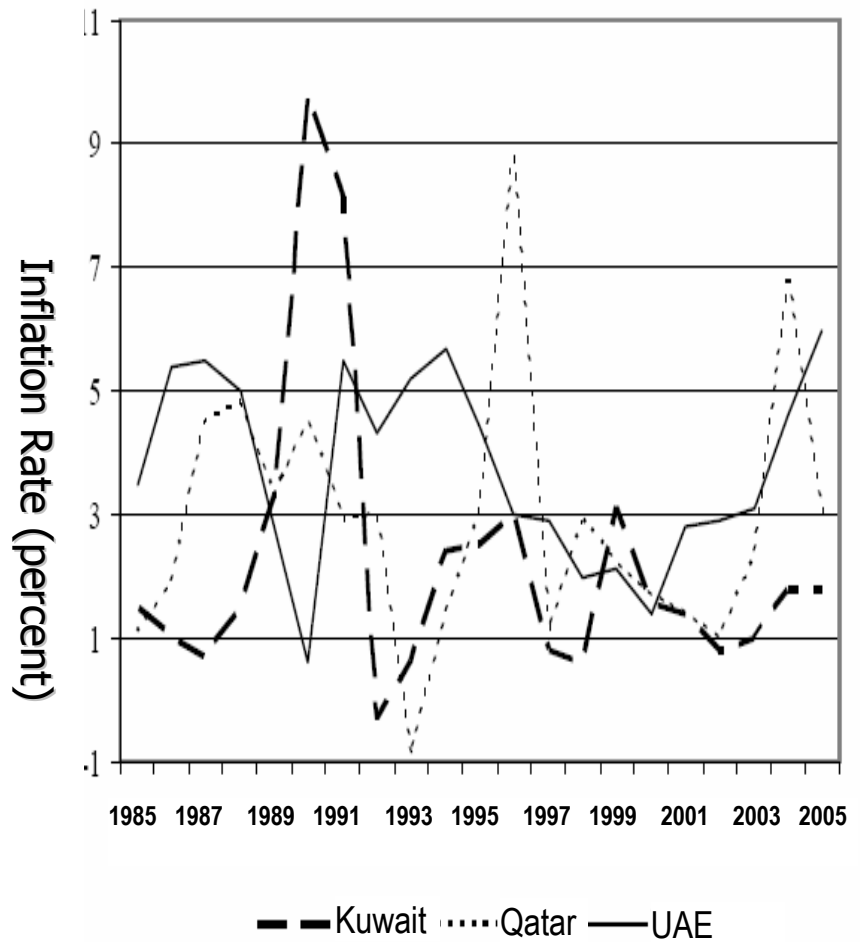
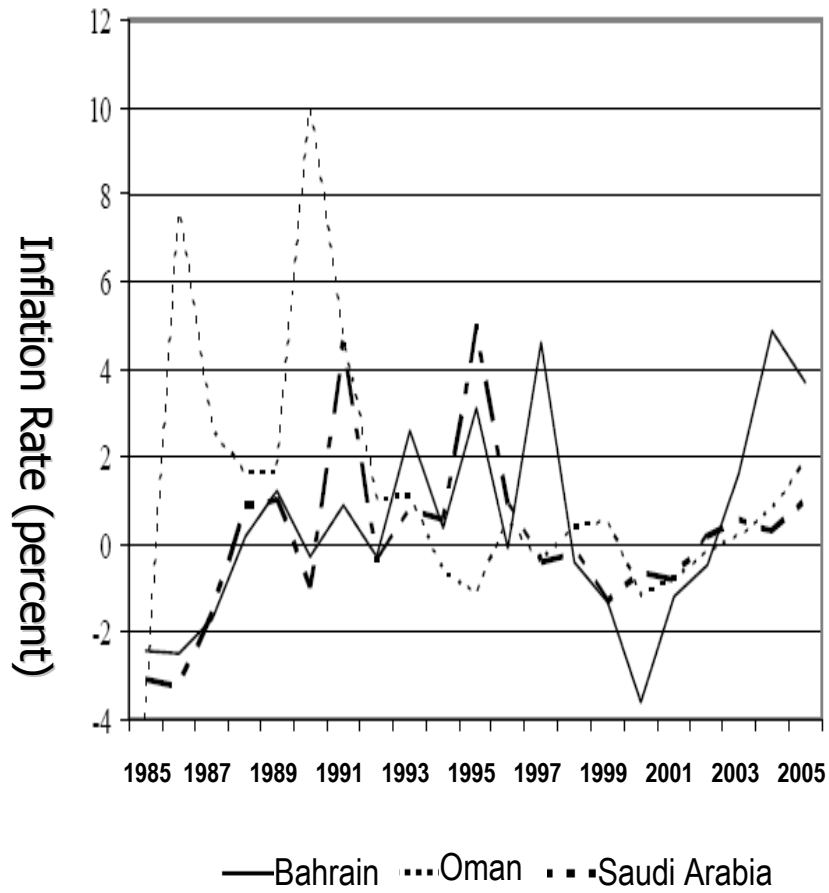




# Interest rates across GCC have moved together ...



# ... but inflation rates have not converged.



# Prospects for Gulf CC Monetary Union?

- Following EMU, have adopted convergence criteria
  - inflation rates  $< 2\% + \text{weighted regional average}$
  - interest rates  $< 2\% + \text{average of lowest three countries}$
  - budget deficits  $< 3\%$  of GDP
  - public debt  $< 60\%$  of GDP
- Economic Challenges
  - Intraregional trade is small, 5-10% → limited gains from lower trade costs
  - Low degree of economic diversification → vulnerable to shocks
    - E.g. Because of windfall from higher oil prices, all countries now have large budget surpluses and public debt levels  $< 60\%$ , but oil prices could fall
  - Economic convergence not yet achieved

# Do GCC States Satisfy Convergence Criteria?

## Convergence Criteria for Gulf States , 2005

|                     | Inflation rate (%) | Deposit Rates (Q4) | Gross reserves/ 4 mo. of imports (2004) | Govt. Debt (% of GDP) |
|---------------------|--------------------|--------------------|---|-----------------------|
| <b>Bahrain</b>      | 2.6                | 3.7                | 2.0                                     | 24.8                  |
| <b>Kuwait</b>       | 3.9                | 3.9                | 3.6                                     | 14.0                  |
| <b>Oman</b>         | 3.2                | 3.3                | 2.6                                     | 11.1                  |
| <b>Qatar</b>        | 8.8                |                    | 1.8                                     | 30.2                  |
| <b>Saudi Arabia</b> | 0.7                | 4.8                | 13.6                                    | 42.7                  |
| <b>UAE</b>          | 8.0                |                    | 18.0                                    | 6.6                   |
| <b>Criteria</b>     | < 4.8              |                    | > 1                                     | < 60                  |

Source: Cowan et al, IMF (2006) :

\*Maximum inflation criterion = avg of all 6 countries + 1.5%

\*Maximum interest rate criterion = avg of countries with 3 lowest rates + 2.0%

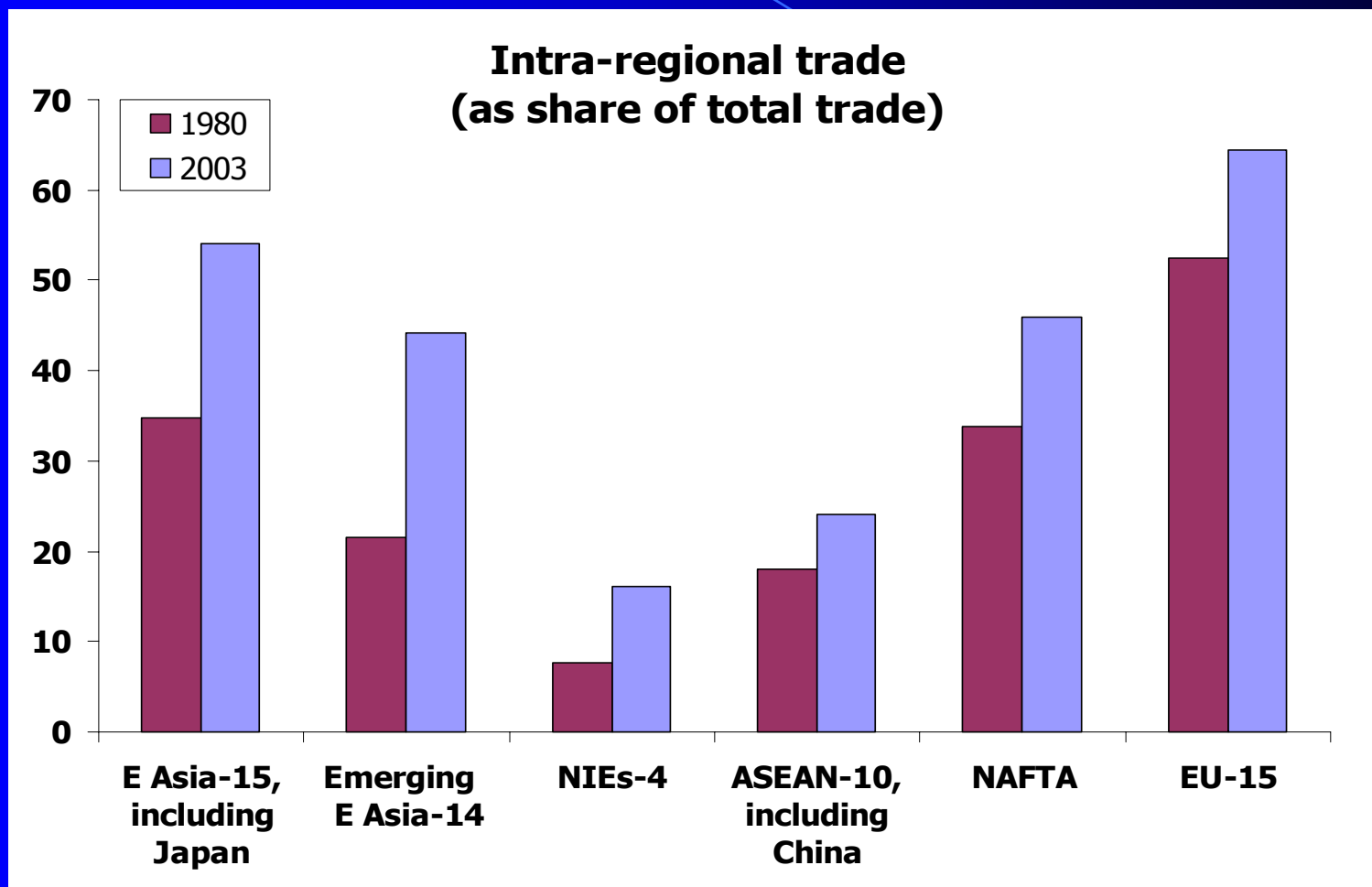
**Yellow cells indicate cases where criteria not met**

# Is a Monetary Union Desirable for Asia?

## (Does Europe provide lessons for Asia?)

- Not really. Though Asia has come closer to satisfying the Optimal Currency Area criteria, it is still very different than Europe:
  1. East Asia economies are more heterogeneous
  2. Asia is less economically self-contained than Europe
  3. Asia has not shown much desire for political integration
  4. Asian governments are much more suspicious of strong supra-national institutions.

# East Asia intra-regional trade has risen a lot, especially between ASEAN and NIE countries

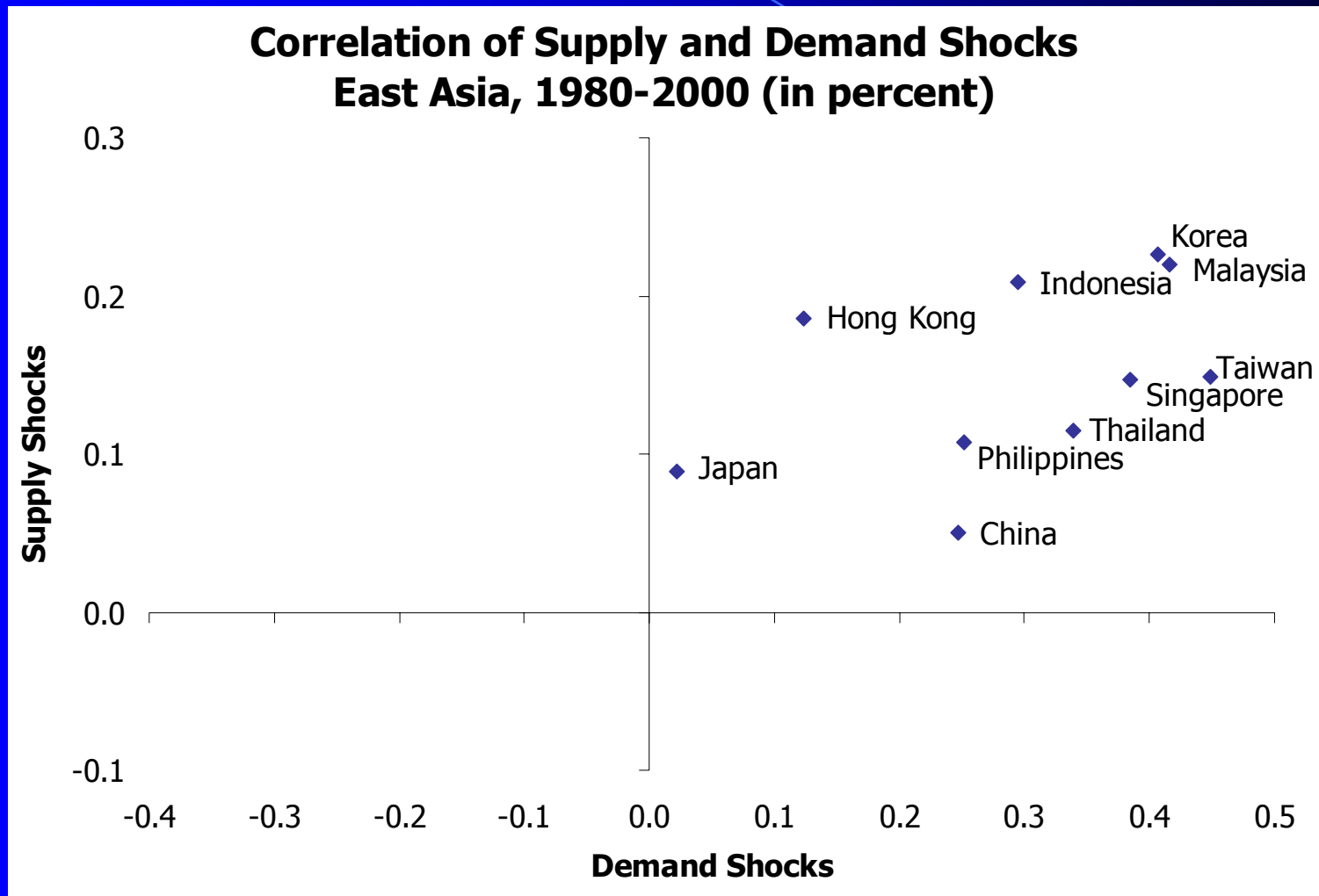


East Asia-14: NIE-4 + ASEAN-10 (including China and Hong Kong)

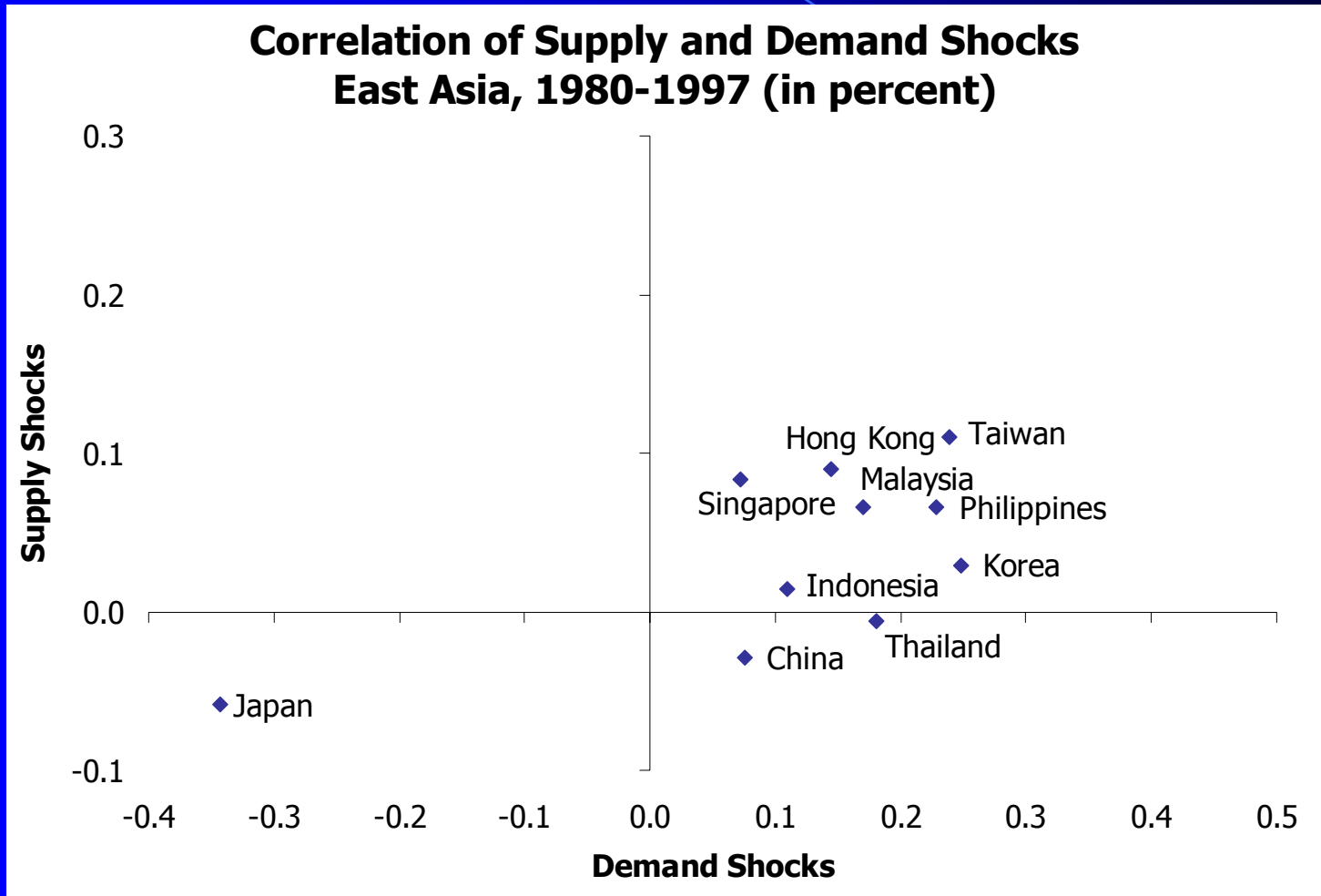
NIE-4: Korea, Hong Kong, Taiwan, Singapore

Source: Kawai (2005)

# East Asian shocks appear correlated ...



# ... but much of the correlation is due to the 1997-98 Asia crisis





# Do Asian Countries Satisfy Convergence Criteria?

| 2005                      | Inflation rate (%)    | Long-term interest rate | Fiscal balance (% of GDP) | Govt. debt (% of GDP) |
|---------------------------|-----------------------|-------------------------|---------------------------|-----------------------|
| China                     | 1.8                   | 2.8                     | -1.3                      | 19.3                  |
| Hong Kong                 | 1.1                   | 3.6                     | 0.3                       | 1.9                   |
| Indonesia                 | 10.5                  | 13.0                    | 0.4                       | 47.7                  |
| Japan                     | -0.3                  | 1.4                     | -5.8                      | 175.5                 |
| Korea                     | 2.7                   | 3.5                     | -0.8                      | 32.0                  |
| Malaysia                  | 3.0                   | 3.6                     | -3.6                      | 45.4                  |
| Philippines               | 7.6                   | 10.9                    | -1.9                      | 66.9                  |
| Singapore                 | 0.5                   | 3.4                     | 6.0                       | -                     |
| Thailand                  | 4.5                   | 5.0                     | 0.1                       | 47.4                  |
| Vietnam                   | 8.7                   | 8.0                     | -6.4                      | 43.7                  |
| <b>Criterion (ex Jap)</b> | <b>&lt; 1.9 (2.6)</b> | <b>&lt; 4.5 (5.2)</b>   | <b>&lt;  -3.0 </b>        | <b>&lt; 60.0</b>      |

Source: Cowan et al, IMF (2006) :

\*Maximum inflation criterion = avg. of countries with 3 lowest rates + 1.5%

\*Maximum interest rate criterion = avg. of countries with 3 lowest rates + 2.0%

**Yellow cells indicate cases where criteria not met**

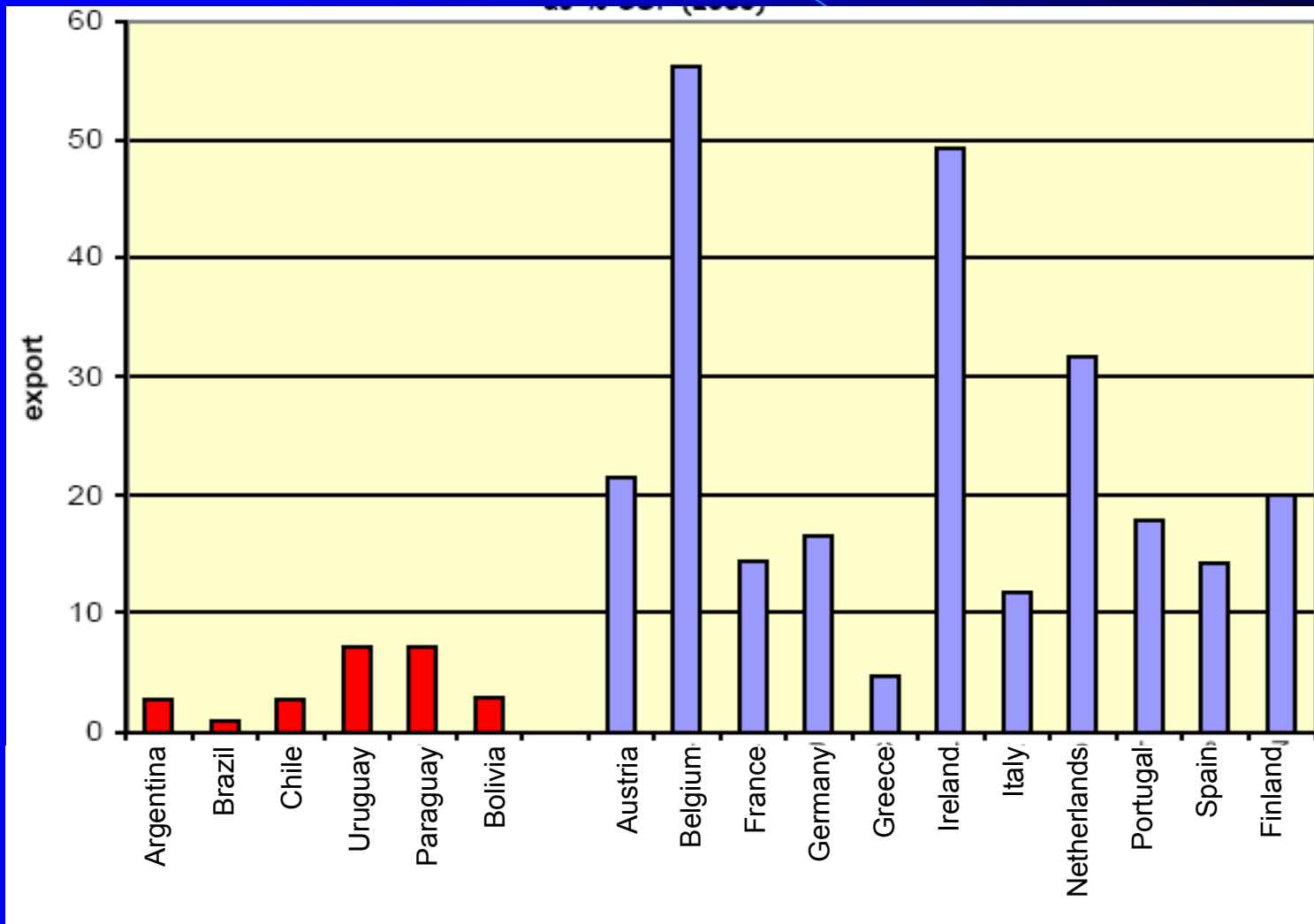
# Conclusions on East Asia Currency Area

- Asia **unlikely to achieve common exchange rate policy** and monetary integration soon
  - because of its heterogeneity, dependence on extra-regional trade, political diversity, concerns about compromising sovereignty, lack of strong collective institutions, and capital mobility
- Nevertheless, Asia is integrating through trade, even without an emphasis on formal trade liberalization agreements
- In addition, Asian countries are cooperating in trying to strengthen the region's financial markets.
  - E.g. network of FX swap agreements
  - E.g. efforts to spur the development of regional bond markets
- And the EMU took 50 years. Maybe Mundell will be right and eventually there will be an Asia \$.

# Currency Area in Latin America?

- After collapse of Argentina's currency board, some smaller countries have adopted dollar as their official currency
  - E.g. El Salvador, Ecuador
- Sub-regional trade areas in Latin America do not comply ex-ante with the Optimal Currency Area criteria.
  - Mercosur: Argentina, Brazil, Paraguay, Uruguay (Bolivia and Chile are associates)
  - CACM (Central American Common Market): Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua
  - CARICOM (Caribbean Community)
- Interregional exports of large Latin American countries are low

# Interregional exports of goods and services, Latin America and EU-11, as % GDP (2000)



# Monetary Unions: Experiences and Lessons

**Reuven Glick**

Center for Pacific Basin Studies  
Federal Reserve Bank of San Francisco

**FRBSF / BOE / WBI**

**Global Seminar for Senior Policymakers**

*Capital Flows, Monetary Policy,  
and Current Issues in International Finance*

Paris, France ■ April 23-26, 2007