THE EURO CRISIS. POLITICAL AND ECONOMIC PERSPECTIVES

Sessions 2-3: The theoretical foundations of a common currency: the Optimal Currency Area (OCA)

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Outline

Section 1

The theory of Optimal Currency Area

Subsection 1

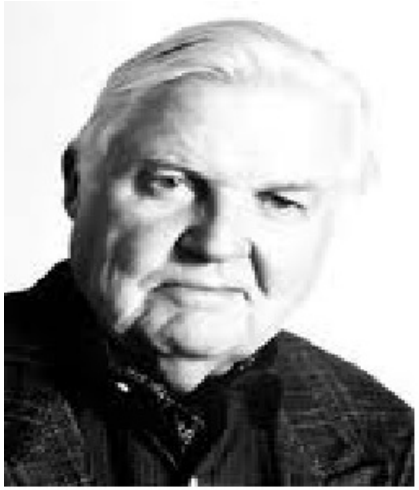
The Origins

The origins

- The concept of optimum currency areas arise from the controversial discussion of the optimal exchange rate regime in the 1950's and 1960's under BW IMS.
- Friedman (1953) was a prominent proponent of flexible exchange rate whatever the characteristics of the country: size, openness to foreign trade, mobility of factors of production
- The phrase "optimum currency areas" was coined by Robert Mundell in 1961 and then further elaborated by Ronald McKinnon (1963) and Peter Kenen (1969).
- The choice between fixed and flexible rates should not be independent of the economic characteristics of the countries.
- No one exchange rate is best for all countries. There are both costs and benefits assessed at the light of factors identified in the OCA literature.

R. Mundell, the intellectual father of the euro

- In 1999, Robert Mundell (1932-), a Canadian economist and Columbia University Professor won the Nobel Prize for his theoretical work of OCA
- He is deemed to have laid the intellectual groundwork for the creation of the European Union



Subsection 2

The benefits of monetary unions

Micro versus macro

- While the cost are related with macroeconomic managements, benefits are microeconomic as they arise from efficiency gains.
  - Definition of monetary union
    - Common currency
    - Common central bank setting one interest rate

Lower transaction costs

- Elimination of foreign exchange markets within union eliminates cost of exchanging one currency into another
- Cost reductions amount to 0.25 to 0.5% of GDP (according to European Commission).

Price transparency

- One common unit of account facilitates price comparisons
- Consumers "shop around" more
- Competition increases
- Prices decline and consumers gain
- Engel and Rogers (1995) find that crossing a border is equivalent to traveling 2500 miles within the US.
  Ex: Detroit-Windsor is equivalent to NYC-LA

Currency Union and trade

- First generation empirical studies found little relation between exchange rate volatility and trade
- Glick and Rose (2016) find that currency unions increase trade on average by 100%, and that the Euro has increased trade by a still-large 50%!
- However, Campbell, and Chentsov (2017) find that the apparent large impact of CUs on trade is driven by other major geopolitical events, correlated with CU switches, including communist takeovers, decolonization, warfare, ethnic cleansing episodes, the fall of the Berlin Wall and the whole history of European integration.
- In fact the trade impact of the Euro and all CUs together is most likely statistically insignificant

Currency Union and Foreign Investment

- A Currency Union implies:
  1. No more exchange rate risk for investors inside the CU
  2. A convergence of risk premia across all members in the case of banking and capital market union (absence of arbitrage)
- Expected to bring about substantial foreign investments from saving to catching up economies
- Therefore expected to boost domestic financial activity
- In theory economic growth but little evidence that it is the case

Subsection 3

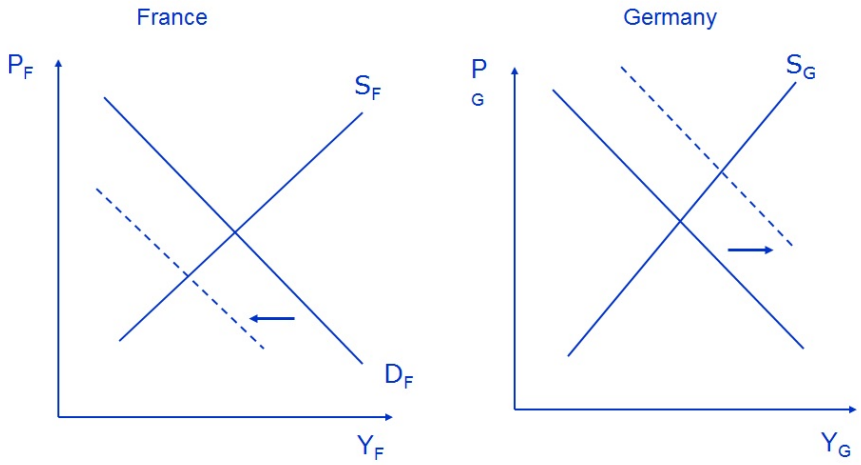
Costs of a monetary union and criteria of an OCA

Main cost: forego monetary policy

- Costs arise because, when joining monetary union, a country loses monetary policy instrument (e.g. exchange rate)
- This is costly when shocks have asymmetric impact across the members

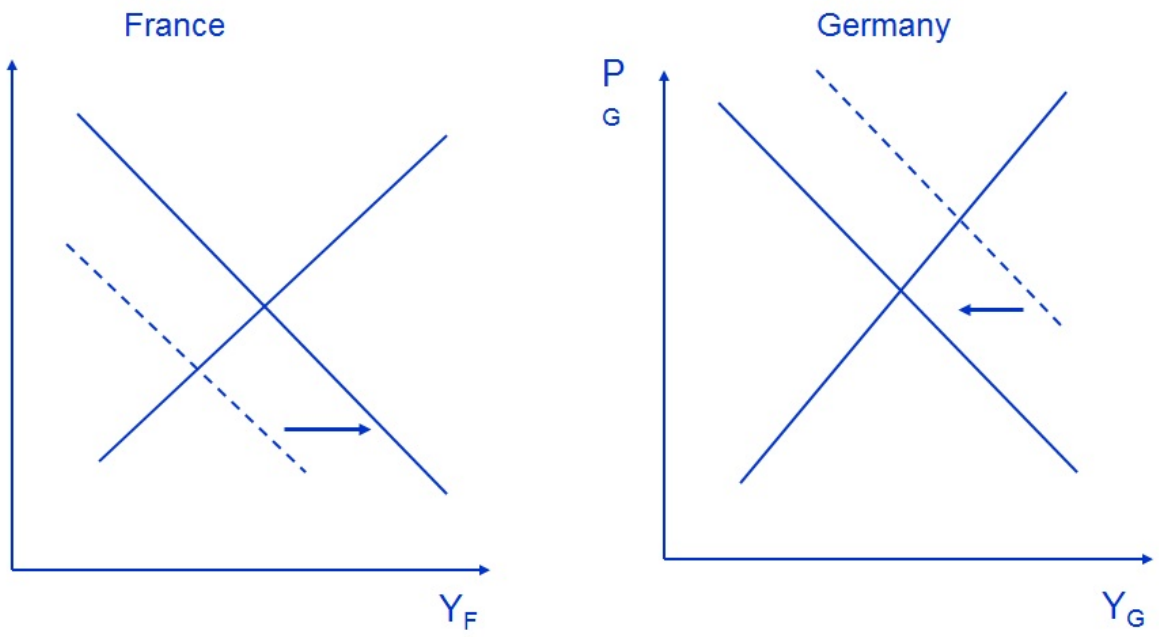
Shifts in demand

- Assume two countries, France and Germany
- A common shock has asymmetric effect on demand
  - Decline in aggregate demand in France
  - Increase in aggregate demand in Germany
- What effect of this shock in two regimes: monetary union and monetary independence?



Monetary independence

- National interest rate and/or exchange rate can be used



Monetary union

- How can France and Germany deal with this shock if they form a monetary union?
- France cannot stimulate demand using monetary policy; nor can Germany restrict aggregate demand using monetary policy

→ The OCA theory states that members of a CU should not be too dissimilar

The degree of diversification (Kenen, 1969)

- Countries with less diversified output structure are subject to more asymmetric shocks
- The better diversified the economy, the less it is likely to be destabilized by a sector-specific shock.
- Ex: asymmetric impact of Chinese voracious appetite for capital goods on Germany capital-goods producer versus consumer-goods producers Portugal and Italy

Adjustment mechanisms

$\rightarrow$ The OCA theory emphasizes the factors that can mitigate the cost of loosing monetary policy independence, i.e. make the adjustment problems manageable.

Subsection 4

How to reduce adjustment costs? The criteria

First adjustment mechanism: labor (Mundell, 1961)

- Unemployed workers move to the country where labor is needed.
- Emigration brings the labor force down to the jobs available.
- Full employment is restored

Massachusetts in the 1980's

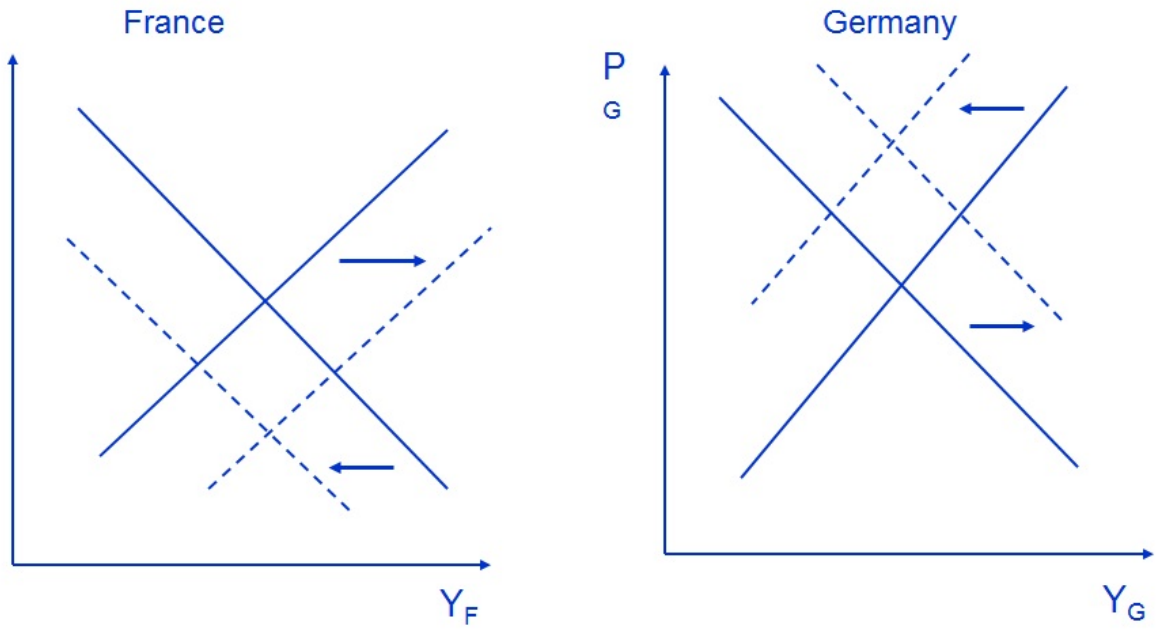
- The minis give way to micro
- Real estate bubble

Table 1
Labor Mobility in Action

	MA Share in US Employment	MA Unemployment Rate	US Unemployment Rate
1986	2.70	4.0	7.0
1991	2.48	8.8	6.8
1996	2.43	4.6	5.4

Wage flexibility (Mundell, 1961)

- The movement of wages prompts supply shocks that drive a new equilibrium with lower prices



Second transfer mechanism: fiscal transfers Kenen (1969)

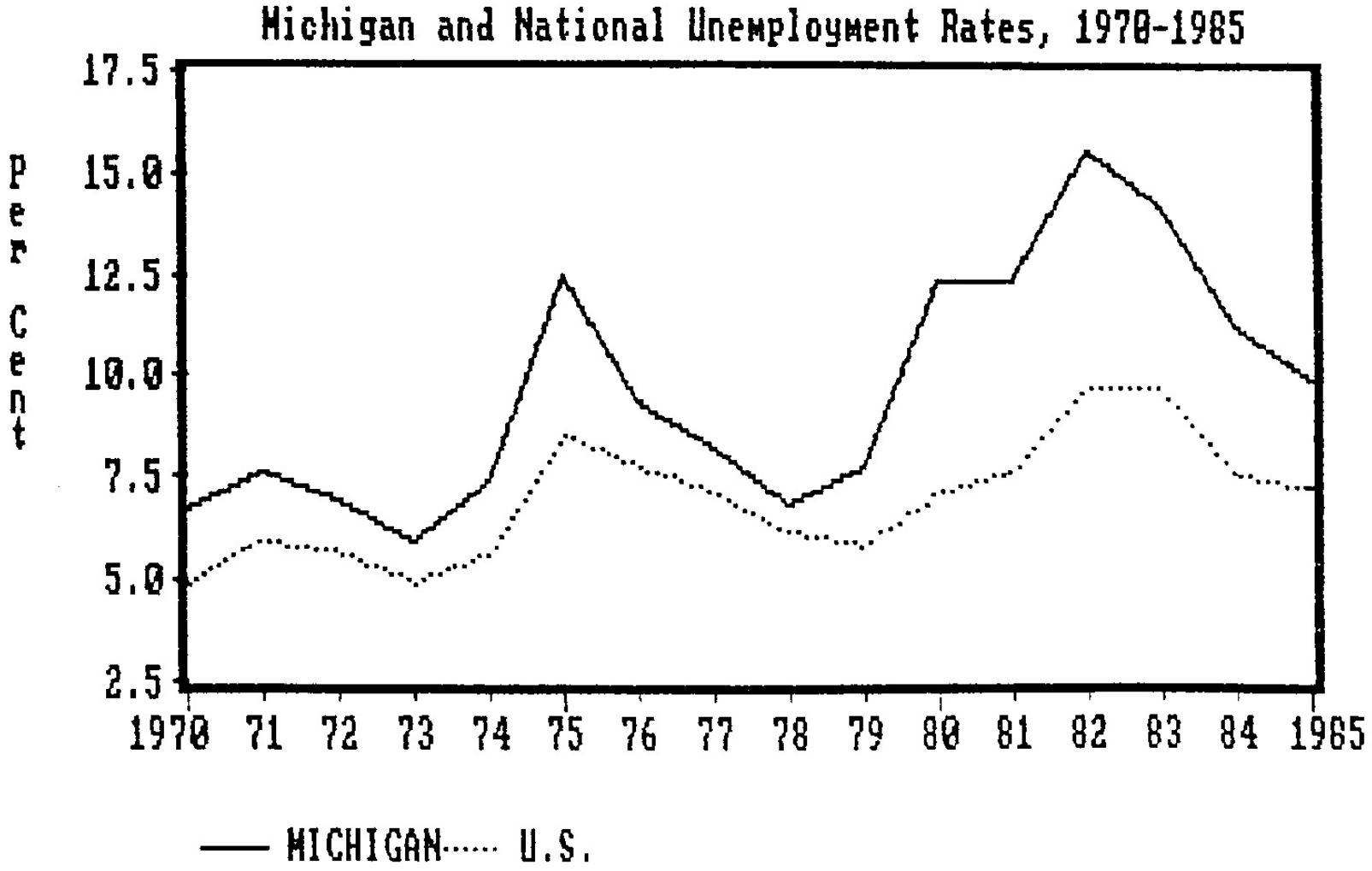
- Income transfers from booming to recession country.
- Tax revenues and spending adjust
- Automatic redistribution by central government smooths consumption.

Michigan 1979

- "When America sneezes, Michigan catches pneumonia"
- Oil shock in 1979 increases heater prices and depresses demand for motor vehicles
- Huge unemployment rise

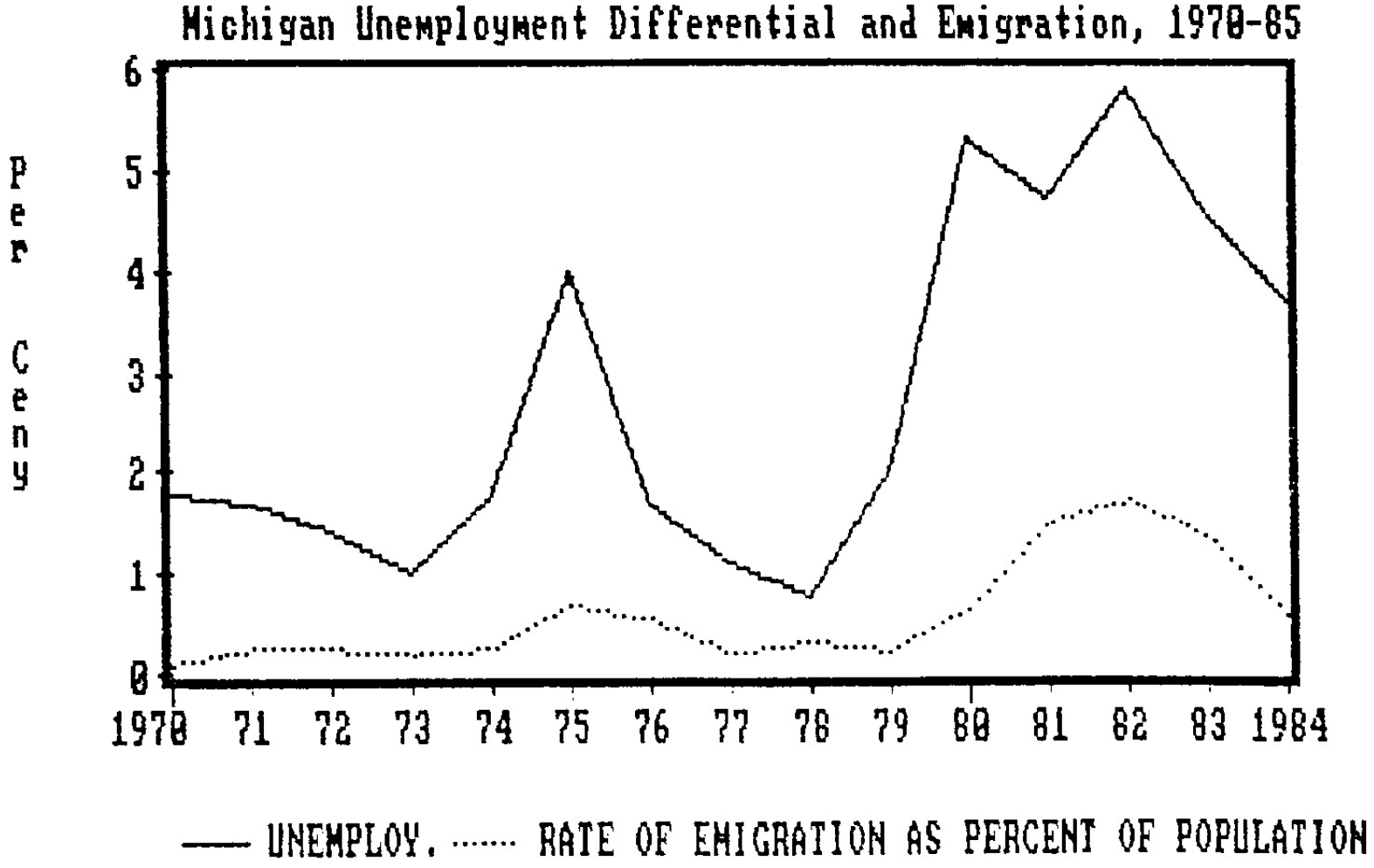
Michigan 1979

Figure 1



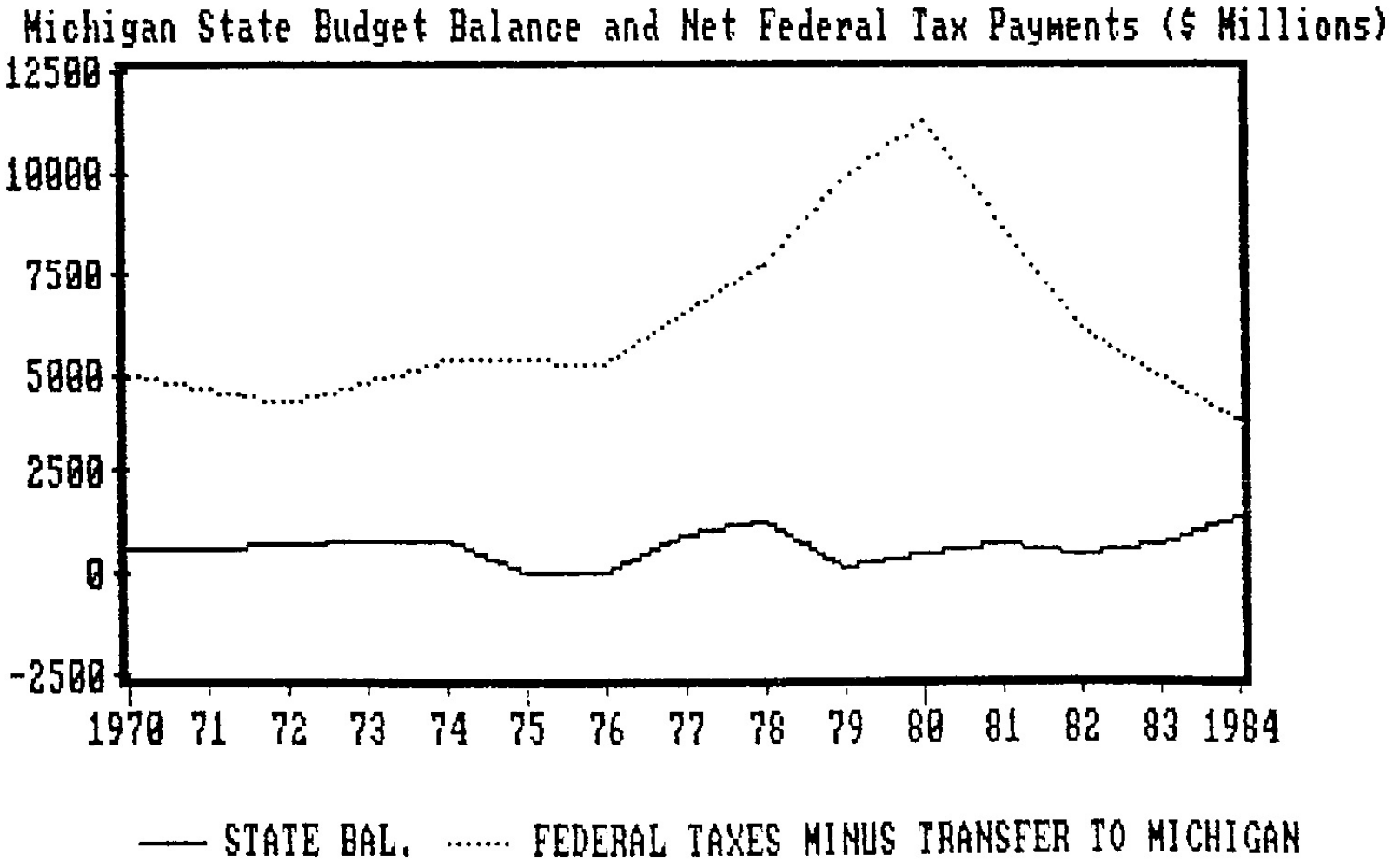
Michigan 1979

Figure 2



Michigan 1979

- Two years shift between state budget position and federal transfers



Savings and Loans crisis 1986

- Failure of 1,043 out of the 3,234 savings and loan associations from 1986 to 1995 due to a Tax Reform Act of 1986 significantly decreasing the value of assets held by S&L (driven by deregulation in the 1980's).
- Uneven impact across regions related with the sudden changes in oil prices
- 150 billions US$ liquidity to prevent widespread failure
- Transfer from the American System of fiscal federalism to Southwest:
  - Depositors in Texas received 20 billions US$ in deposit insurance while the US Treasury collects only 1.3 b from the S&L institutions.
  - In contrast, in Illinois, received $257 million while they contribute to $1.4 billion.

Automatic transfers to Florida after the subprime crisis

Table 2
Florida and the Feds

	2007	2010
Revenue paid to DC	136.5	111.4
Special unemployment benefits	0	2.9
Food stamps	1.4	5.1

OCA Criteria in a nutshell

Main

1. Symmetry of shocks
2. Product integration
3. Factors mobility

Auxiliary

1. Different legal systems
2. National social policies

Subsection 5

Fiscal Policy in a Monetary Union

The Fiscal Debate (Wyplosz,JEP 1997)

- Before the Maastricht Treaty, most academic analyses emphasized that national fiscal policy would have to become more active to compensate for the loss of the exchange rate instrument
- Indeed, a central government with powerful redistribution and stabilization authority was not likely within the foreseeable future (and is still not!).
- So one argument was that Europe needed national-level stabilization policies much more than individual U.S. states do.

The Fiscal Debate: Market discipline

- The opposite approach, that monetary union requires fiscal policy restraint, is grounded in the view that excessive budget deficits may lead to eventual monetization of the debt (Sargent and Wallace, 1981).
- Monetary authorities were clearly concerned by high debt (especially in Italy)
- They feared that an explicit or implicit lender-of-last resort function might force the European Central Bank to step in and indirectly monetize a country's public debt if banks faced a financial crisis in the wake of a default.

The Fiscal Debate

- How to provide the incentives for appropriate fiscal policy? How to define "excessive" deficit? How to define a "sustainable" debt? One that assures that government can actually repay their debt
- How to leave fiscal space for active national fiscal policy?
- Maastricht approach was quite unsophisticated: a 3 percent annual debt/GDP rule corresponding to what is called the "golden rule" in Germany and a 60 percent debt/GDP rule.
  - "golden rule" in Germany: governments usually dedicate about 3 percent of GDP to investment spending.
  - "consumption" includes education and socially productive spendings?
  - The 60 percent debt/GDP rule was chosen because it was the average of EU countries when the Maastricht Treaty was being negotiated.
- US: balanced budget and states can issue debt only for capital spending (like France)
- But big difference: Europe has no central government like the US

Fiscal policy and market discipline (Wyplosz,1997)

- One attractive and alternative approach was to rely on financial markets to impose discipline.
- To the extent that markets price risk correctly, the demand for public debt of various governments could act as both a barometer and a constraint.
- If a country lets its debt grow and there is an enhanced risk of default, markets should react by **downgrading** their evaluation and by increasing the interest rate at which new debt is being financed until the authorities curtail their deficit
- However history and empirical evidence cast doubt on market discipline mechanism
- When markets do react, it is often too late and too violently
- They abruptly cut financing, making it impossible for the government to borrow further and bankrupting large bondholders, among them commercial banks and other financial institutions.
- Central banks may feel compelled to monetize (part of) the debt.

Fiscal policy and market discipline (Wyplosz,1997)

- Central banks may feel compelled to monetize (part of) the debt.
- This is presumably why the Maastricht Treaty includes **a no-bailout clause** which explicitly forbids the rescue of one government either by its fellow membersor by community institutions, including the European Central Bank.
- Fiscal misbehavior becomes a strictly national issue with no union-wide implication and fiscal restraint is unnecessary.
- Yet Germany has argued that the no-bailout clause cannot be fully credible, that any rule can always be circumvented
- Solution to avoid monetizing some nation's out-of-control debts: explicit fiscal restraints in the excessive deficit procedure
- The cost: reduced ability to run countercyclical policies.

Section 2

Was EMU an optimal currency area?

Subsection 1

The analysis in the 90's before the introduction of Euro

Incidence of shocks in Europe before Euro (Bayoumi and Eichengreen, 1992)

- OCA theory: if disturbances are distributed symmetrically across countries, symmetrical policy responses will suffice
- Analyze the effects of disturbances on output and prices for 11 EC member nations (data over 1960-1988) and compare them with 11 other advanced economies and with US regions
- They
- Are shocks more asymmetric in the EU than the US "smoothly functioning MU"?

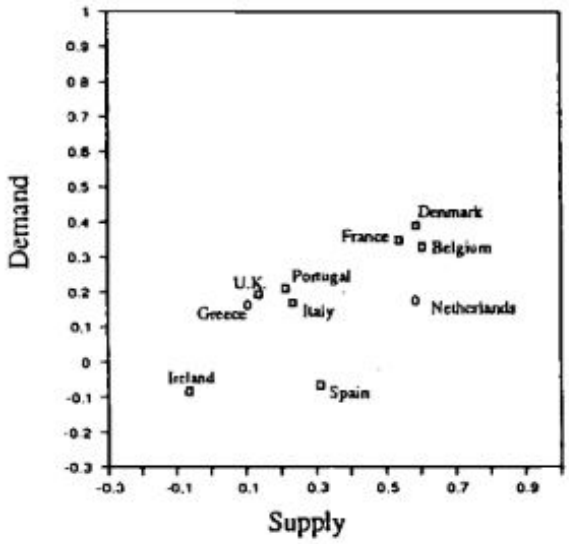
Incidence of shocks compared (cont')

- They find that the coherence of output among EC 11 and 11 other advanced economies is the same
- But they find a greater coherence of price and output movements among U.S. regions than among EC countries: in the US, 74% of the variance of regional GDP is explained by a common factor versus 57% in the EC.
- Both the EC and the US can be divided into a core" of regions characterized by relatively symmetric behavior and a "periphery whose disturbances are more loosely correlated with those experienced by center.

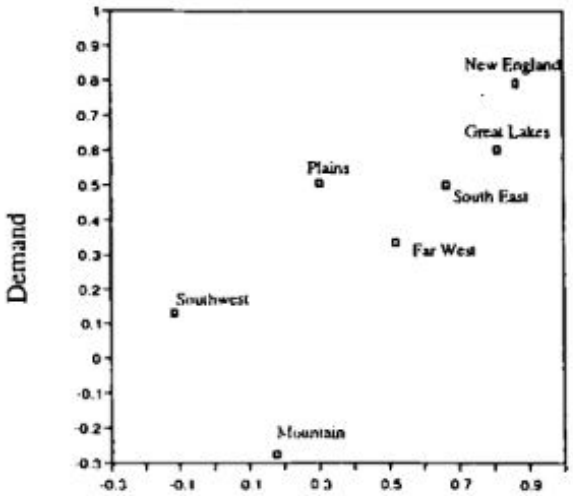
Incidence of shocks compared (cont')

- Chart juxtaposes the correlation coefficients of demand shocks and of supply shocks with Germany and US Mid-East respectively.
- Distinction between "core" (highly correlated supply shocks) and a "periphery"
- But the U.S. regional data have higher correlations
- The European core correlations are close to the whole US

Correlation of supply and demand disturbances with German supply and demand disturbances



Correlation of U.S. Supply and demand disturbances with supply and demand disturbances of mid-east region



Incidence of shocks compared (cont')

- Have shocks grown similar with time?
- Higher correlations among EC countries than control advanced but no evidence of convergence
- The countries of the EC core have more correlated supply and demand shocks than either the periphery or the control group
- No evidence of convergence by newcomers

Table 5. Percentage of Variance Explained by the First Principal Components for Geographic Groupings

	EC11	Other 11	EC Core	EC Peri-phery	Control Group	U.S. Regions
			Supply Shocks			
Full Period	33	26	54	32	33	49
1963-71	34	33	39	40	42	53
1979-79	44	41	63	41	51	65
1980-88	35	37	62	41	47	68
			Demand Shocks			
Full Period	31	26	53	36	41	51
1963-71	30	34	58	30	37	44
1972-79	40	38	50	49	48	49
1980-88	40	34	54	43	56	75

Notes: The control group comprises US, Japan, Canada, Australia, New Zealand and Iceland. The sample period is 1962-88.

Incidence of shocks. Additional findings on size and speed of adjustment

- The peripheral countries experience supply shocks twice as large as the core countries.
- The supply shocks to U.S. regions are similar to those experienced by the EC core and uniformly lower than those of the EC periphery
- But the U.S. regions have larger demand shocks than the EC countries.
- The high.variability of demand affecting U.S. regions may reflect the greater specialization of industrial production in the U.S.
- The evidence suggests that completion of the internal market in Europe may well magnify aggregate demand disturbances by leading to increased specialization.
- The US regions adjust to shocks more quickly than do EC countries, despite the lack of the exchange rate instrument
- Probably because of greater factor mobility in the United States than in Europe.

Policy implications

- The European Community may find it more difficult to operate a monetary union than the United States.
- Large idiosyncratic shocks strengthen the case for policy autonomy and suggest that significant costs may be associated with its sacrifice (exacerbated by lesser factor mobility).
- Strong distinction between a core of EC members with highly-correlated aggregate supply and periphery with larger and more idiosyncratic disturbances $\rightarrow$ two-speed MU
- Germany and its immediate EC neighbors come much closer than the Community as a whole to representing a workable monetary union along American lines.
- Probably because of greater factor mobility in the United States than in Europe.

Factor mobility compared US-EU

- Eichengreen (1991) proxies factor mobility:
  1. Real security prices give a measure of how capital reallocates across regions
  2. He finds that security prices are 5 times more correlated across Germany and France than in Canada.
     $\rightarrow$ He concludes that capital mobility is much larger in Canada. Why?
  3. Greater labor mobility in the US but the difference is not that large.
- He concluded that Europe lacks factors mobility to qualify a OCA

Subsection 2

What could happen after: Integration and asymmetry of shocks

And yet it happened...

- The comparison with other MU concludes that Europe was not an OCA
- But it has not slowed down the monetary integration process
- One way to justify the political process was then to argue that integration would accelerate convergence and reduce asymmetry across the zone

The European Commission view: the Optimistic

- Intra-industry trade leads to similar specialization patterns
- Integration leads **to more equal economic structures and less asymmetric shocks**
- Empirical evidence of Frankel and Rose favors optimistic view.
- Role of services: they are increasingly important, and less subject to economies of scale

The Pessimistic view (Krugman's view)

- Krugman and Venables (1992) find that increased integration paradoxically makes it more likely that firms in the same industry will cluster together
- Intuitively, there are two conditions:
  1. If economies of scale at the firm are large because then there is an incentive to more regional concentration of industrial activities
  2. If intermediates are a large share of cost because then agglomeration effects are beneficial
- They conclude that integration leads to more asymmetric shocks
- The adjustment cost will be a fall in real wages and a rise in unemployment in national vanishing industry

US experience

- According to Kenen, specialization makes the area less of an OCA
- Production is far more localized in the US (see chart)
- The European automotive industry had not developed a single hub comparable to Detroit in 1990.
- With measures to unify the continental market, will specialization take place?

Table 1: Shares of industry employment

	Steel	Autos	Textiles
United States (1990)			
Northeast	13.4	7.9	14.2
Midwest	51.8	65.6	3.2
South	24.5	23.4	79.6
West	10.4	7.0	3.9
EC (1989)			
France	18.9	25.3	15.8
Germany	20.2	34.7	13.2
Italy	18.7	9.5	17.4
UK	15.8	13.0	18.6

Source: OECD Employment Statistics.

Does monetary integration reduce asymmetry?

- The economic analysis suggests that economic/ monetary integration does not slow down asymmetry
- On the contrary, it fosters activity and sectors specialization across countries
- Their conclusion suggests that Europe was not an OCA before the introduction of Euro and would not be better after

Section 3

Takeaway and forward

What does OCA bring to the analysis?

- OCA was helpful to identify the shortcomings of currency unions (existing or in project):
  - The Eurozone was not an optimal currency area in the 1990's
  - Asymmetry in the area was an original sin
  - Evidence that integration would actually foster more specialization so more asymmetry
- Natural policy implications was to develop adjustment mechanisms to smooth the effects of asymmetric shocks

Policy options

- Same diagnosis: adjustment is necessary through more flexibility; but different policy solutions:
  1. Autonomous national budgetary authorities and no constraining rules
  2. Structural reforms to increase labor flexibility
  3. Budget union to compensate adverse effect with fiscal transfers
  4. Single federal bond
- Data can help settling debates but in the end the choice depends on the political spectrum of the decision-makers

Was OCA too simplistic?

- Borjes tale: cartographers decided to draw a one-to-one replica of the empire. But subsequent generations could not use the map and discarded it with the science of geography.
- Should OCA be discarded?
- OCA did not predict the adoption/ end of single currencies because in the end, it is a political choice.
- Understanding social phenomena requires simplification.
- Different map are used for different regions: it is useless to try and agree on one single model to explain the world complexity.
- Economists and more generally social scientists need to learn to navigate among models i.e. choose which model works better for specific situation.
- ... and adopt multi-disciplinary approach to address the complexity of social phenomena