Search and Cross Country Analyses of Unemployment

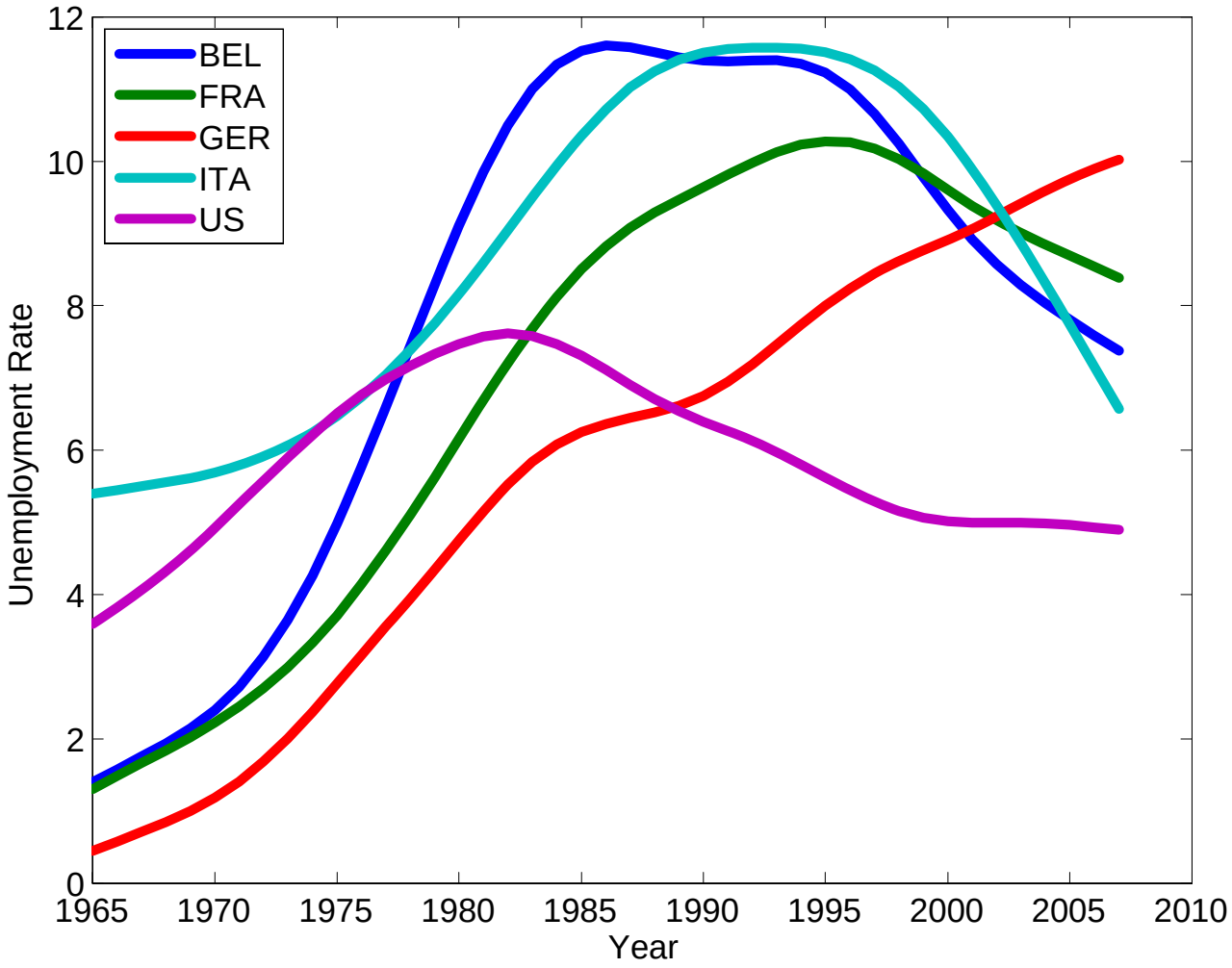
Previous sections focused on business cycle fluctuations.

This section focuses on low frequency changes in labor market outcomes.

Most of the search literature that studies low frequency movements in outcomes is motivated by looking at the evolution of relative unemployment rates across countries during the last 40 or so years.

Outline for Presentation

- A Broader Look at Cross Country Labor Market Evolutions
  - Changes in hours of work
  - Changes in participation
  - Contribution of unemployment to differences in hours of work
- Review of Cross Country Unemployment Rate Evolutions
  - Evolution of unemployment rates
  - Evolution of unemployment durations
  - Statistics on labor market flows
- Search and Cross Country Unemployment
  - Overview
  - Two Specific Models


BEL
FRA
GER
ITA
US
Unemployment Rate
Year
0
2
4
6
8
10
12
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010

Some well known features that are apparent from this figure:

1. There are dramatic changes in relative unemployment rates over time

2. At times there are large differences in unemployment rates

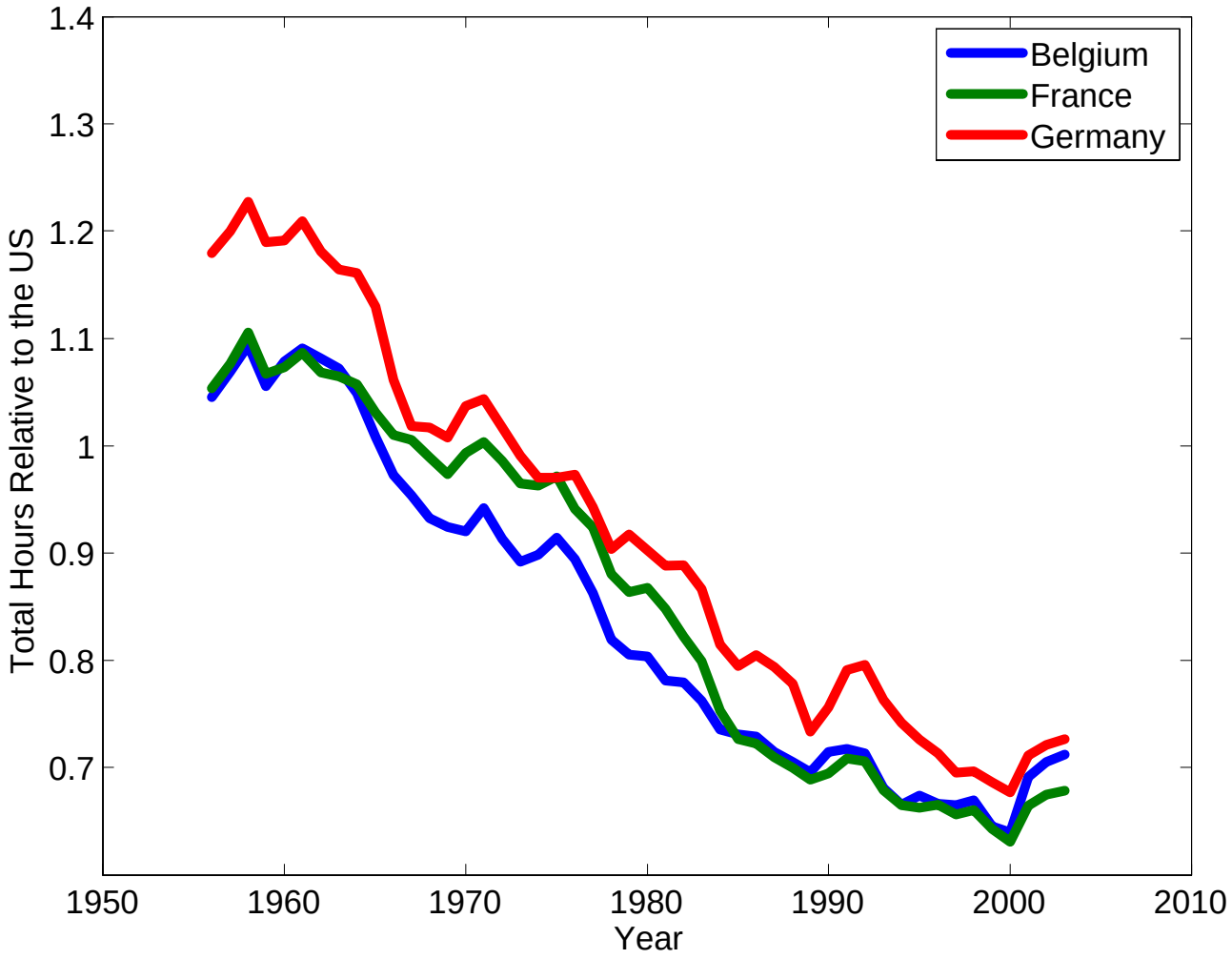
3. Dispersion increased and then decreased

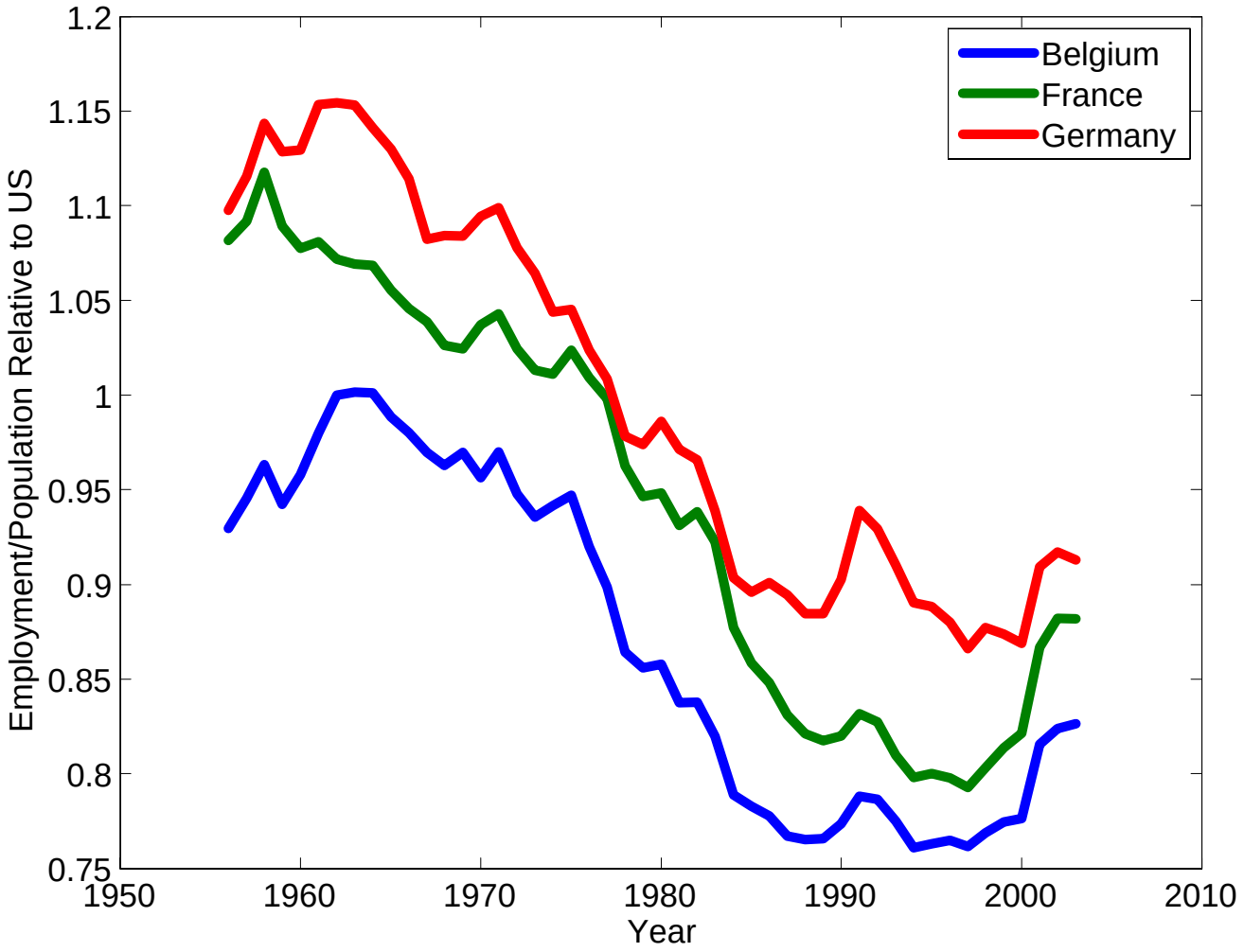
A Broader Look at Aggregate Labor Market Outcomes

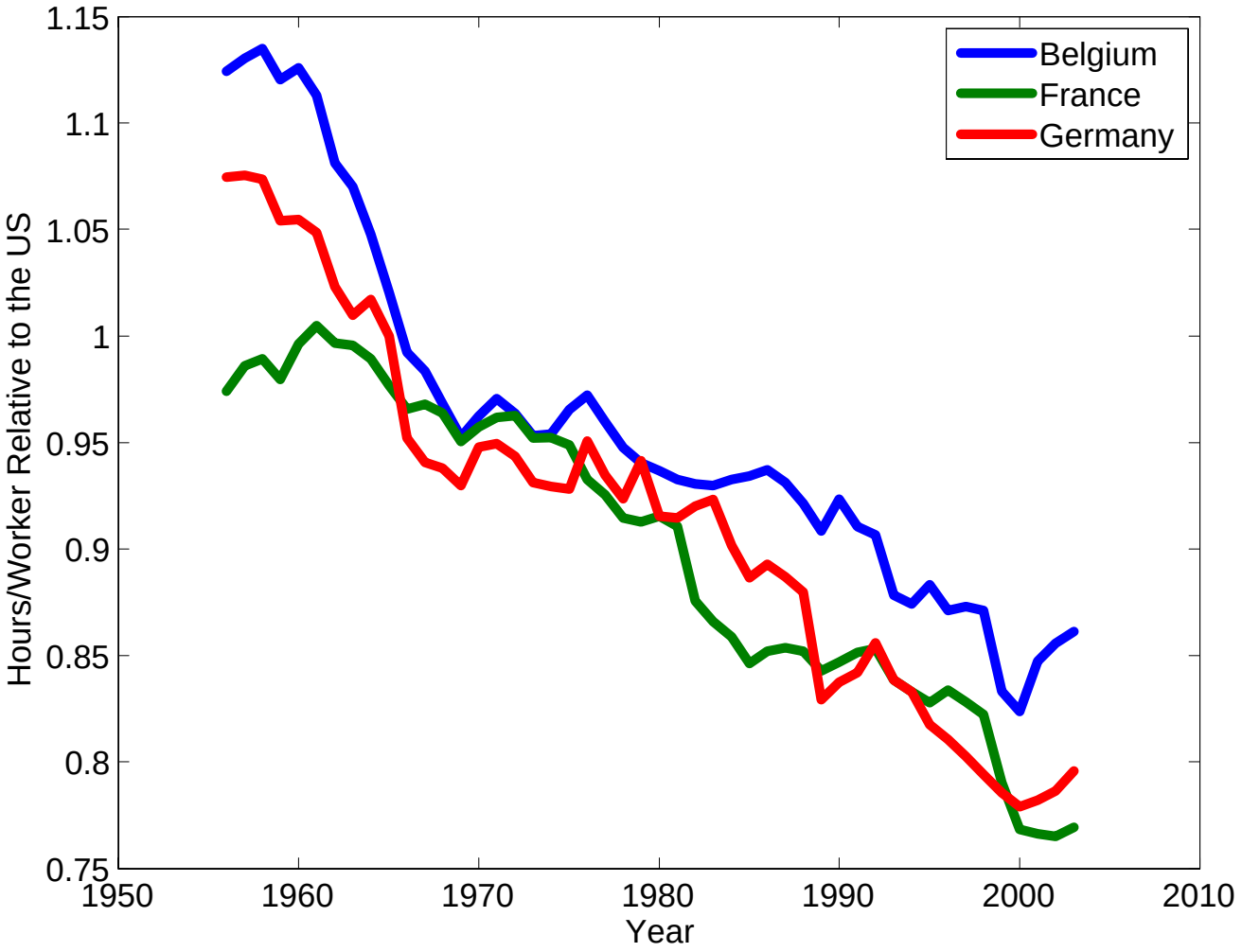
A defining feature standard search models used in macro is that all labor market adjustment is captured by the employed/unemployed margin.

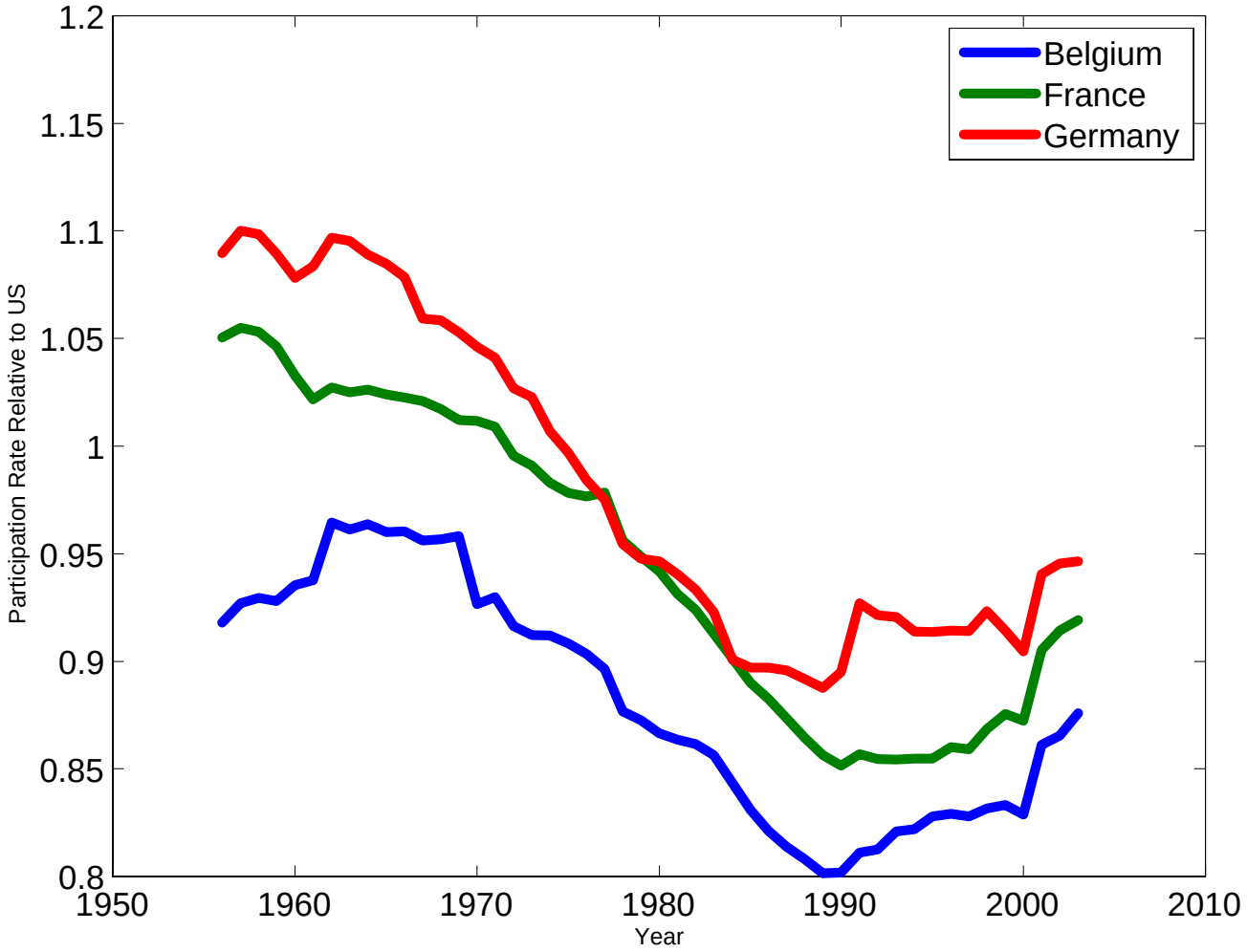
In reality there may also be important adjustments along both the intensive margin (hours per worker) as well as the participation margin.

If adjustment along these margins is quantitatively important, the standard search models may be potentially excluding important elements.


Belgium
France
Germany
Total Hours Relative to the US
Year
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
1950
1960
1970
1980
1990
2000
2010


Belgium
France
Germany
Employment/Population Relative to US
Year
1.2
1.15
1.1
1.05
1
0.95
0.9
0.85
0.8
0.75
1950
1960
1970
1980
1990
2000
2010


Belgium
France
Germany
Hours/Worker Relative to the US
Year
1.15
1.1
1.05
1
0.95
0.9
0.85
0.8
0.75
1950
1960
1970
1980
1990
2000
2010


Belgium
France
Germany
Participation Rate Relative to US
Year
1.2
1.15
1.1
1.05
1
0.95
0.9
0.85
0.8
1950
1960
1970
1980
1990
2000
2010

Relative Hours, Actual and Adjusted for U 2005

	Actual	*Adjusted*		*Actual*	*Adjusted*
FRA	.76	.80	DEN	.93	.93
BEL	.77	.80	AUS	.99	.98
GER	.78	.84	CAN	.99	1.01
ITA	.78	.80	IRE	1.00	.99
NOR	.85	.85	US	1.00	1.00
SPA	.85	.89	SWI	1.02	1.02
UK	.89	.89	NZ	1.03	1.01
FIN	.91	.95	JAP	1.04	1.03
SWE	.92	.94	POR	1.06	1.09

Summary:

Something “big” has happened to the volume of work in Europe relative to the US.

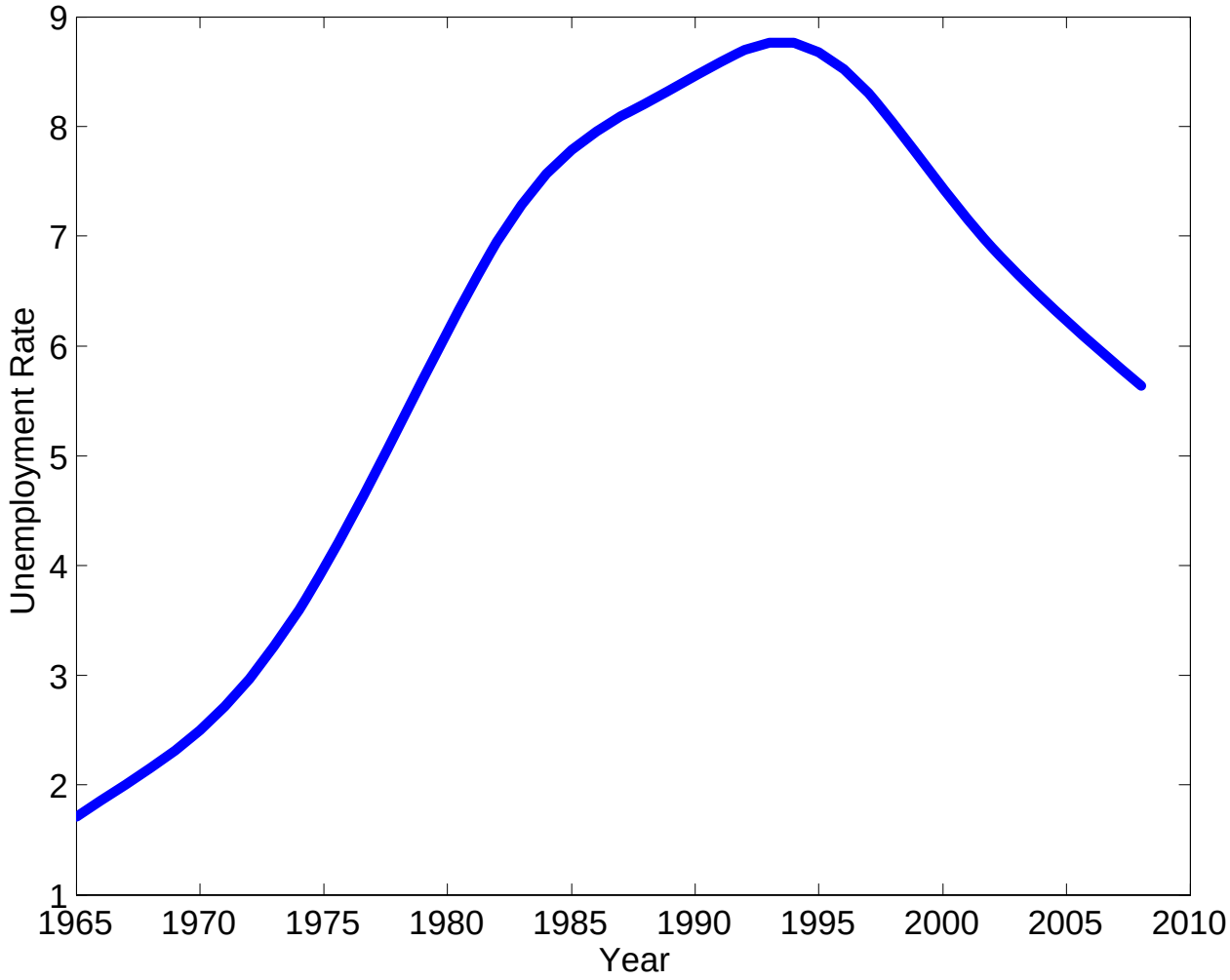
Statistically, (measured) unemployment is a relatively small piece of these differences.

It seems potentially unwise to focus on unemployment in isolation from the other changes that are taking place.

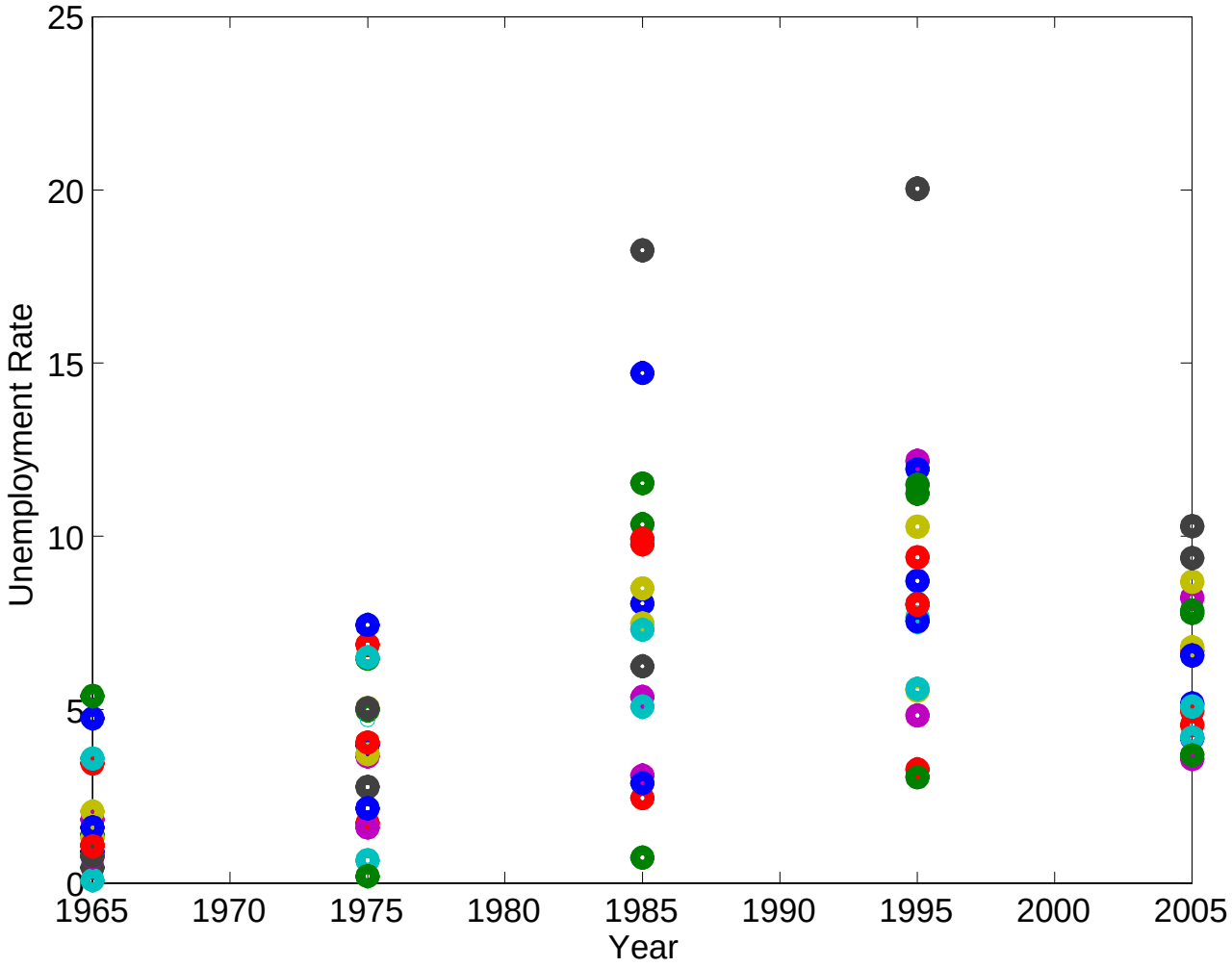
In principal we could easily imagine that the other changes would also have implications for unemployment.

This calls for an analysis of unemployment that is more fully integrated with broader analyses of labor supply and demand.

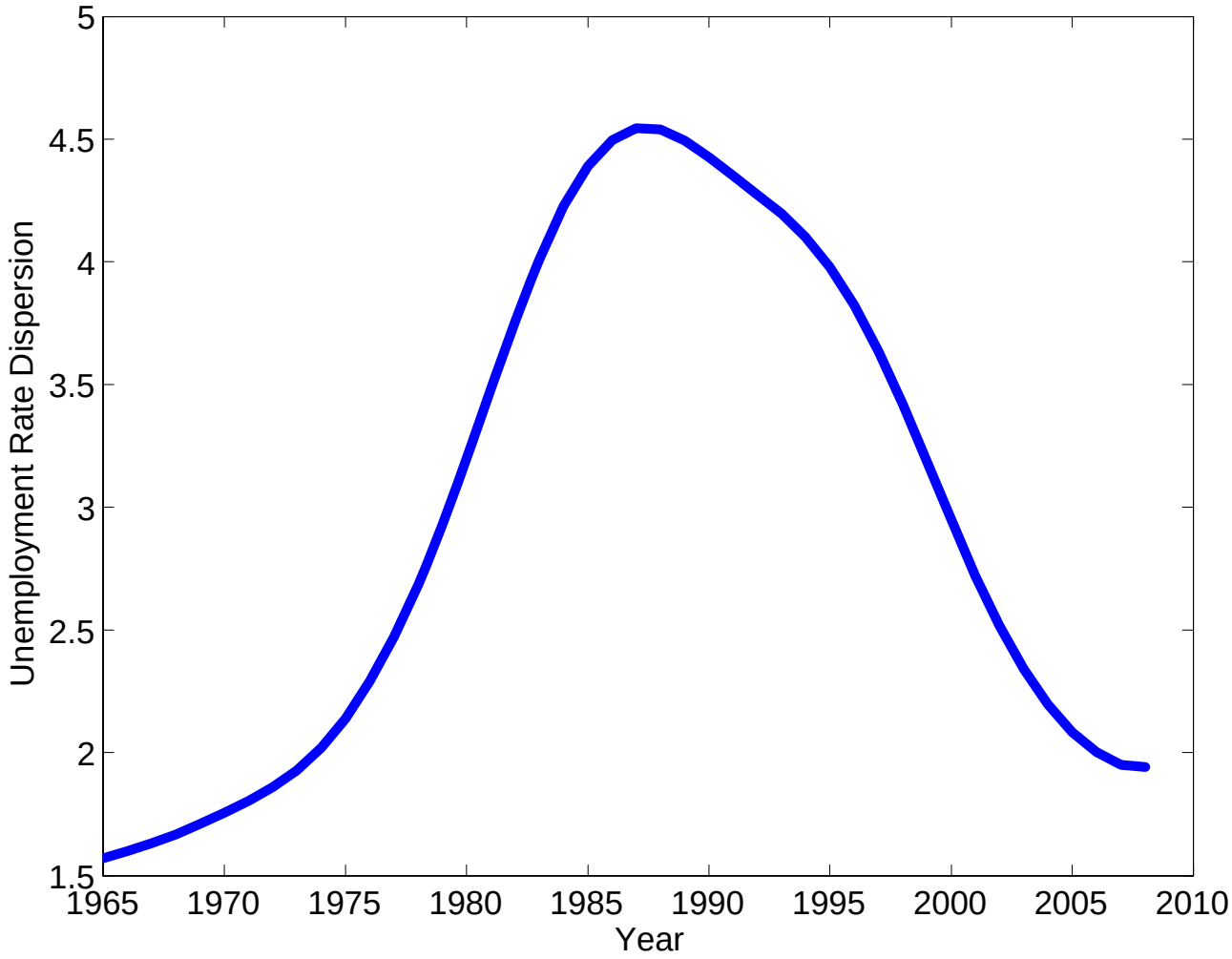
Mean Unemployment Rate 18 OECD Countries



Distribution of Unemployment Rates: 18 OECD Countries



Dispersion of Unemployment Rates: 18 OECD Countries



Importance of Flows

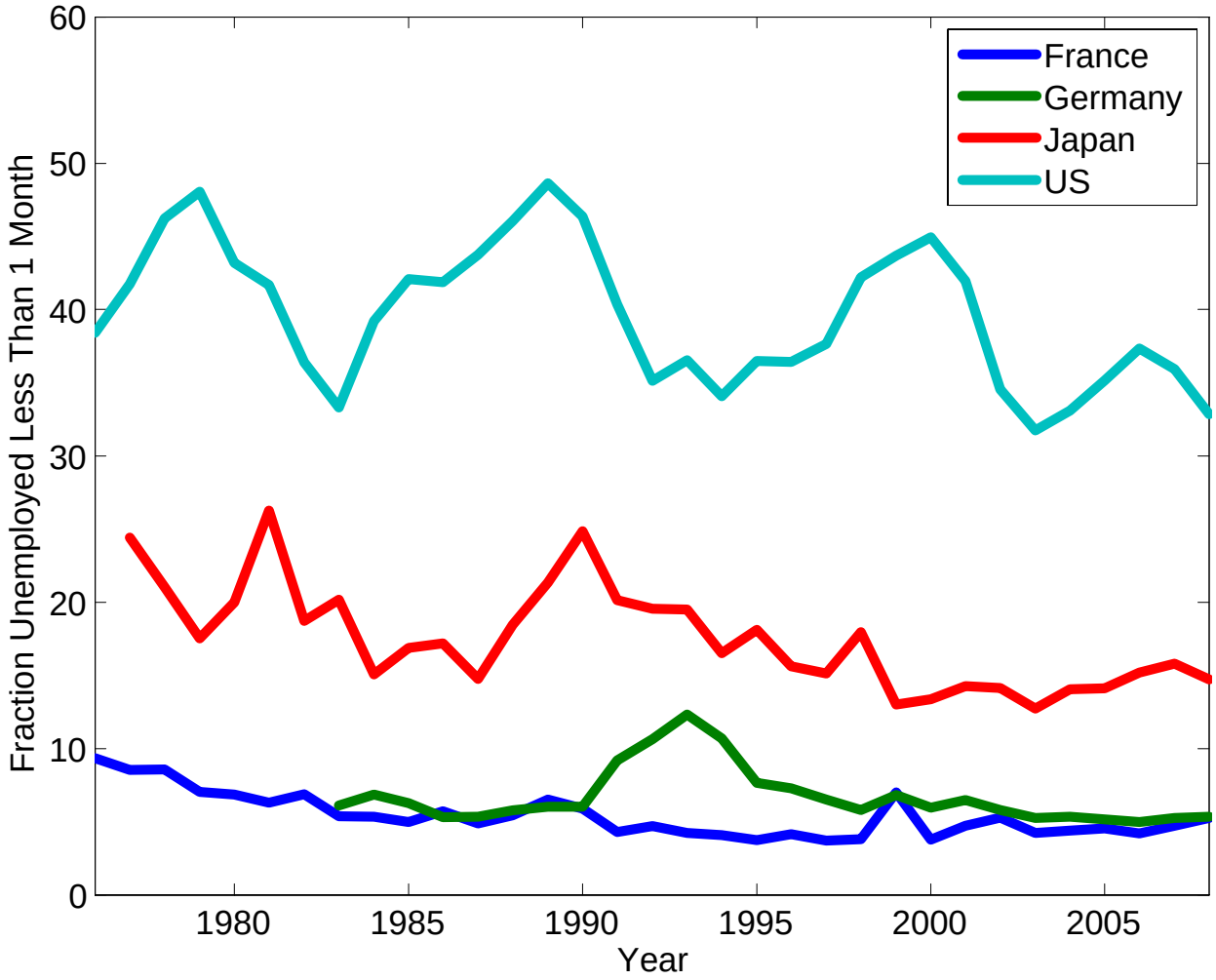
Rob presented data earlier to emphasize the potential importance of worker flows in thinking about unemployment.

It is natural to then ask how flows differ across countries.

Cross country-time series data comparable to what Rob presented for the US is not available.

I will present some cross country time series data on the distribution of unemployment by duration, and some estimates of average inflow/outflow rates.

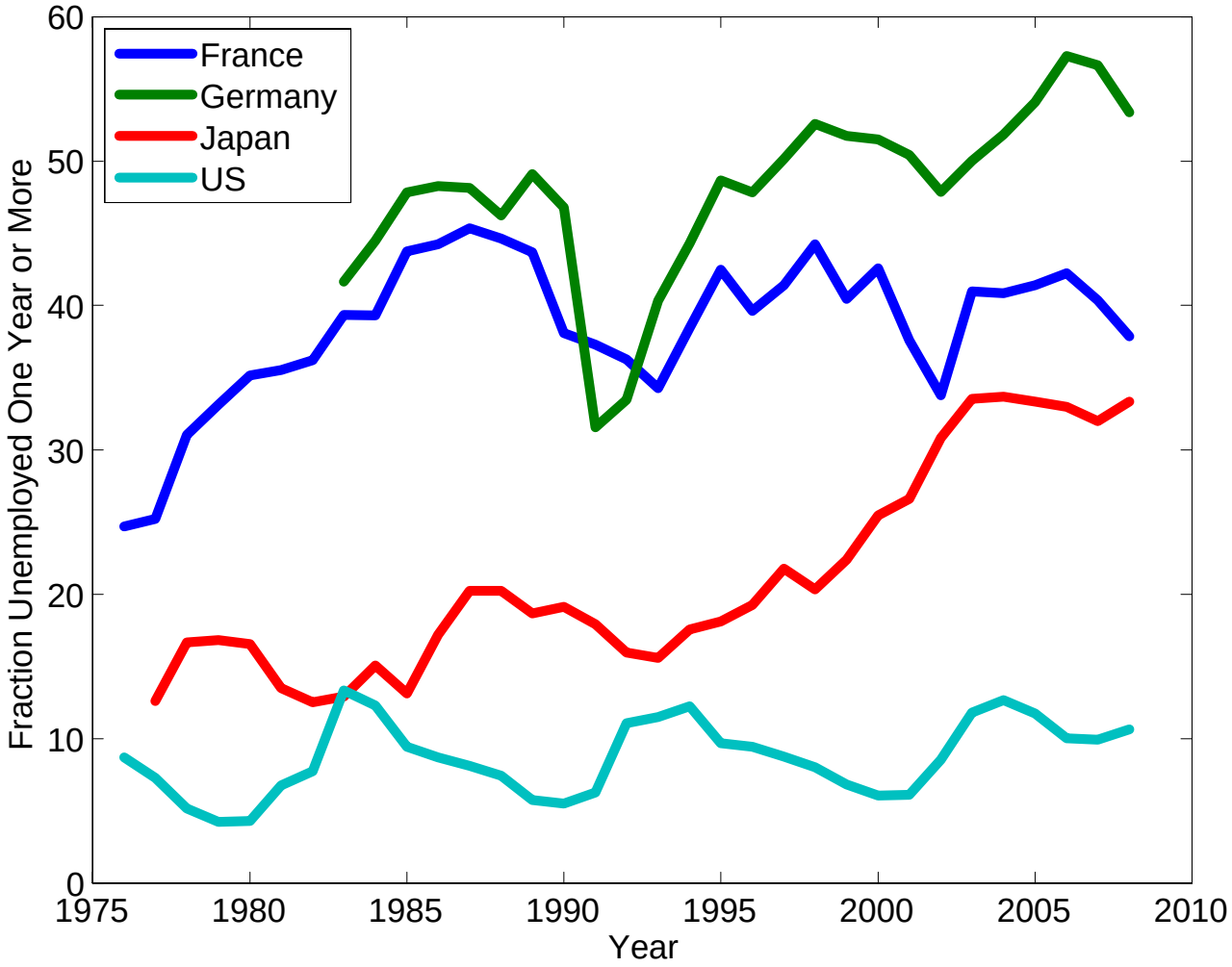
Fraction of Unemployed With Spell Less than 1 Month



Key Properties

- Large differences in levels across countries.
- Slight downward trend for all countries.
- Effectively no change in relative levels across countries over time.
- Low proportion of short spells in Germany and France even when their unemployment rates were relatively low.

Fraction of Unemployed with Spell Exceeding One Year



Key Properties

- Large differences in levels, inversely correlated with importance of short unemployment spells
- No change in relative ordering over time
- Some change in relative values over time

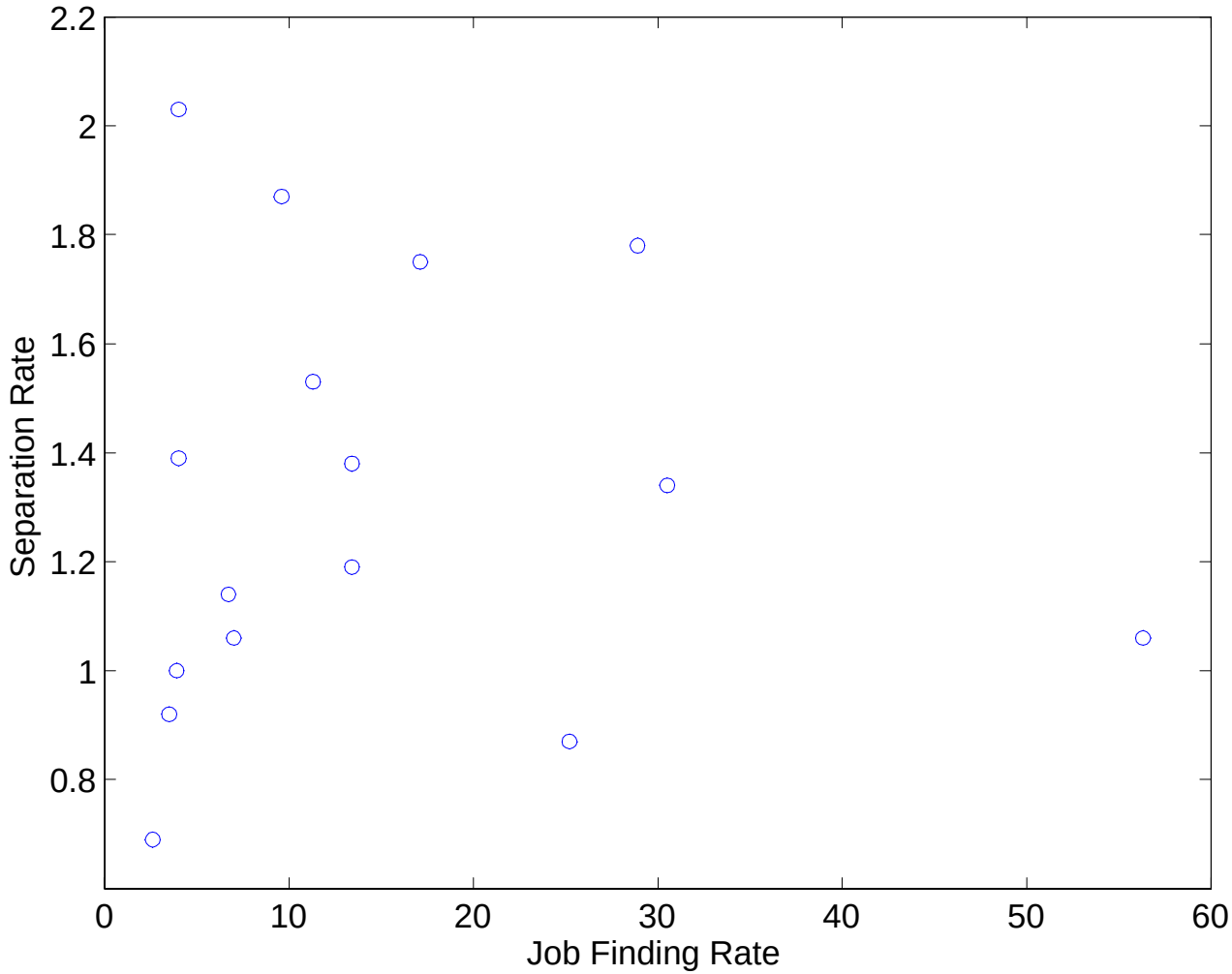
Job Finding and Separation Rates in 18 OECD Countries

	Finding	Separation		Finding	Separation
AUS	17.1	1.75	JAP	19.0	-
BEL	3.5	.92	NZ	21.7	-
CAN	28.9	1.78	NOR	30.5	1.34
DEN	9.6	1.87	POR	3.9	1.00
FIN	13.4	1.38	SPA	4.0	2.03
FRA	6.7	1.14	SWE	25.2	.87
GER	7.0	1.06	SWI	13.4	1.19
IRE	4.0	1.39	UK	11.3	1.53
ITA	2.6	.69	US	56.3	1.06

Key Points

Differences in job finding rates much larger than differences in job separation rates.

Correlation between the two is effectively zero.


Separation Rate
Job Finding Rate
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0
10
20
30
40
50
60

Using Search Models to Account for Cross Country Unemployment Evolutions

Largest literature is one that focuses on the rise of unemployment in continental Europe relative to the US

Background on this literature

If unemployment rises in one set of countries relative to another there are conceptually at least two distinct types of explanations:

1. countries were affected by different "shocks"

2. countries were affected by the same shocks but had different responses to these shocks because of some underlying differences (i.e., institutions).

The Common Shocks-Differing Institutions Theory

Krugman (1994) was an early proponent of the common shock view

Details of Krugman's (verbal) theory:

- common shock was something that created a force for the skilled wage differential to increase
- differing institutions affected how wage inequality responded to this force
- in the US we observed widening wage gaps and no increase in unemployment
- in many European countries we observed relatively little change in wage inequality but an increase in unemployment.

While intuitively appealing, the simplest version of this story did not seem to fit the underlying patterns in the data. (e.g., Card et al ()).

Note for future reference: Krugman's theory did not mention search frictions in any way. The key mechanism in his theory had to do with wage determination and how wages respond to shocks.

Blanchard and Wolfers (2001) carried out a statistical analysis aimed to distinguish between the two different types of stories and concluded that the common shock view was more promising.

Some issues worth noting:

- BW did not specify what the common shock was
- Because the shock is not identified, the analysis did not offer any particular economic mechanism as key
- It follows that search is not singled out as being important
- BW only considered a small set of potential differing shocks

Nonetheless, most of the literature has sought to develop explanations of the common shock-differing institutions variety.

Examples include:

Bertola-Ichino (1996)

Ljungqvist-Sargent (1998)

Marimon-Zilibotti (1999)

Mortensen-Pissarides (2001)

Hornstein-Krusell-Violante (2009)

All of these papers feature search in one fashion or another.

I will summarize two specific contributions

1. Ljungqvist-Sargent

2. Hornstein-Krusell-Violante

Both models feature search in an apparently prominent manner, but there is a fundamental difference in the substantive aspects of the explanations:

- LS attributes the increase in unemployment to labor supply responses
- HKV attribute it to labor demand responses.

The Role of Search

In what follows I want to focus on the substantive role played by search in the explanations offered by these two papers. In particular, to the extent that search is important, we want to focus on the following possibilities:

- Is search important purely for the purposes of labelling the non-employed as unemployed?
- Is search simply one of several possible features that produce a particular outcome?
- Is search important in an essential way?

Ljungqvist-Sargent Model

- Basic search model with stochastic skill accumulation
- Institutional Difference: Generosity of UI
- Shock: Increase in Turbulence

Results

With no turbulence:

- generous indefinite UI benefits have very little effect on aggregate unemployment.
- but long term unemployment is more pronounced in the economy with generous indefinite benefits.

With substantial turbulence:

- generous indefinite UI benefits lead to a very large increase in aggregate unemployment
- with a particular concentration of long term unemployment.

Key Punch Line: The effect of UI is very dependent on the economic conditions present in the economy

Limitations of LS

- Not clear which model ingredients are quantitatively important, e.g., search intensity, nature of skill accumulation while employed and unemployed.
- No attempt to distinguish the experiences of individual countries in terms of explicit features of long term social insurance and consequent unemployment dynamics
- Evidence on the key shock is indirect. Not clear that the observations identify turbulence per se as opposed to some other feature of wage dynamics.
- No attempt to establish that the shocks of interest were common across countries
- No attempt to match unemployment rates at a disaggregated level, e.g., youth unemployment.

Irrelevance of Search in LS Mechanism

Search seems to be a completely inessential aspect of the basic economic argument.

Key economics is that if workers suffer large depreciation in the value of skills and social insurance offers generous support linked to previous earnings then work incentives are drastically reduced.

One could model this without having search as part of the model.

Not clear that unemployment in the data is the appropriate measure for what they are focusing on.

Bottom Line on LS: Intuitive story of how generous long term benefits can affect work incentives.

Hornstein-Krusell-Violante Model

Model: Standard Mortensen-Pissarides model with capital obsolesence

Insitution Differences: Labor taxes, UI and firing costs

Shock: Increase in rate of capital embodied technological change

HKV Exercise

They calibrate the model to match features of the US economy, and then consider policy settings that are typical for European economies.

Europe is identical to the US in all non-policy factors except σ.

Results:

European style economy has a much larger response in unemployment, dominated by an increase in unemployment duration.

Limitations of HKV

Several limitations of LS apply here equally well.

No attempt to distinguish among European countries in terms of policies and responses

No attempt to measure the shock across countries

No implications for heterogeneous responses in unemployment across the population

Implications for job destruction are counterfactual?

Implications for wages?

Is Search Essential in HKV?

No.

Key role of search is to generate differential responses of wages to a given shock.

One need not have search frictions to have differential responses in wages. This could alternatively come from different wage determination processes.

Open question: to what extent do differential wage responses across countries reflect different outcomes from a common wage setting process due to differences in policies, or differences in wage setting processes.

Summary

- Search framework is useful for addressing cross-country differences in unemployment:
  - allows one to identify individuals as unemployed
  - allows one to address data on differences in flows
  - is one model that creates “rents”
- But, search frictions per se have not (at least yet) been shown to be the key model feature that provides an explanation for cross country differences in unemployment rate evolutions
- Existing models probably take a too narrow perspective by focusing purely on cross country unemployment rate evolutions.