



UNEMPLOYMENT AND JOB CREATION

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Basic Ideas

- In most developing economies, concern about persistent unemployment (U) and limited job creation (JC)
- Open v. disguised U
- Desirability of informal sector employment
- Quality of jobs
- Jobless growth (productivity)
- What are these phenomena and what drives them?
- What research programs are needed?
- => Outline some stylized facts and give an example of a research program

Latin America

(Pages, Gaelle and Scarpetta, 2007)

- *U* and *JC* – major issues (despite reforms)
- Urban *U* varies from 4% in Mexico to 15% in Colombia
- Informal employment rising
 - Voluntary (optimal) or involuntary?
- Reallocation of labor across firms
 - People worried about losing jobs
- Leading explanations?
 - Weak macro performance
 - Large cyclical fluctuations
 - Frequent crises
- Proposed remedies
 - Raising labor demand by improving investment climate
 - Improve education and skills (labor supply)
 - Relax credit and information constraints
 - Promote adaptable labor markets and safety nets for displaced workers

Latin America (2)

- Argentina (Galiani and Hopenhayn, 2003)
 - *U* spells tend to be short but re-incidence of *U* spells makes *U* risk high and comparable to Europe
 - This *U* risk has risen in the last decade and is shared unequally (e.g., young unskilled are high risk)
 - => high turnover and low long-term *U* incidence rates in LAC do not mean unemployment risk is evenly distributed
- Duryea and Szekely (1998)
 - Rise in young workers share in labor force raises unemployment on account of search problems (demographic factors)
- Maloney (1998)
 - Attractiveness of self-employment => efficiency wages => informality
 - => Labor market rigidity may not be a major issue

Latin America (3)

(Perry and Olarreaga, 2007)

- Contrary to expectations, liberalization accompanied by increased skill premia and wage inequality
- The effects of trade liberalization mostly coincided with reductions in poverty
 - Fall in the cost of consumption goods of the poor and coincidence of short-term U , together with significant overall outflows of people from U (v. Galiani and Hopenhayn, 2003)
 - Liberalization may give poor better possibilities to adjust; role of informal sector not necessarily negative (v. Mitra and Yemtsov, 2007, on transition economies)

Unemployment and Institutions (LAC)

■ Effect of minimum wages on:

□ *Unemployment*

- Increases unemployment of most vulnerable in Latin America – women, young, least educated (World Bank, 2006)
- Increase unemployment only of those with secondary education in Honduras (Gindling and Terrell, 2007)

□ *Wages and Employment* in the Covered Sector

- Positive effect on wages - maybe in the middle of the distribution rather than at the bottom (Arango and Pachón, 2003)
 - but compliance an issue
- Employment mostly found to be negative (Neumark and Wascher, 2006; Pages and Micos, 2003; etc.)

□ *Wages and Employment* in the Uncovered (Informal) Sector

- Wage effect: *Positive* (“lighthouse” effect) in Brazil (Kristensen and Cunningham, 2006; Maloney and Núñez, 2003); *Negative* in Costa Rica; *No effect* in Honduras (Gindling and Terrell, 2007)
- No information on employment in informal sector

Other Developing Country Evidence

- Rama (1999) -- Sri Lanka
 - Compensation gap between good and bad jobs; bad job vacancies abound => voluntary unemployment
 - => increase competition, lower job security, reform government pay and employment policies (remove artificial benefits associated with good jobs and improve bad jobs)
- Ruppert (1996) – Algeria
 - To avoid high long-term U – pursue active labor market policies (supply side) and private sector development (demand side)
- McDonald and Yao (2003) – Mauritius
 - U is seen as resulting from skill-biased technical change and centralized wage bargaining (mismatch between labor demand and skill availability; yet wages cannot adjust)
 - => invest in education and make bargaining more flexible

Central-East Europe – World Bank (2006)

- Insufficient rates of job creation -- high cost of doing business
- Output growth not a problem – key problem is “jobless growth.”
 - Desirable outcome of rising productivity and competitiveness in global economy based on undesirable initial conditions (low productivity).
- Wages rather than employment rising with output and productivity
 - Efficiency wages v. wages set by unions or government?
 - High wage dispersion in East Europe could reflect flexibility in wage setting or regulated outcomes
- Shift from stable formal jobs to casual and less formal jobs, including self-employment
 - Reflects in part strict employment protection legislation in some countries and also flexibility on the part of firms and workers in coping with the situation

Europe (Munich and Svejnar, 2007)

- Central-East Europe -- U = still a problem two decades after fall of Berlin Wall
- West -- U = an issue in many countries for decades
- => Are similar or different factors at play?
- => What policies could be deployed?
- Central-East Europe: 3 hypotheses
 - Economic structure (mismatch)
 - Macroeconomic policies or major external shocks
 - Ongoing transition from plan to market in the presence of globalization
- Western Europe: 3 hypotheses
 - Structural (mismatch) shocks
 - Aggregate demand shocks
 - Hysteresis (see e.g., Jackman, Pissarides and Savouri, 1990, and Jackman and Layard, 2004)

Example of a Research Project

- A group of researchers, with several teams examining different aspects of the 3 reasons for high U in Central-East Europe
- Will review here main findings to date of several teams and present preliminary results of one study (Münich-Svejnar) in more detail

Labor Market Institutions and Unemployment

(Olivier Blanchard, Simon Commander and Axel Heitmueller)

- Calculate measures of L mkt institutions in six TEs
 - Unemployment Insurance (UI): net replacement rates (declining)
 - UI: strictness (flat or increasing)
 - Wage bargaining (high or increasing decentralization)
 - Employment protection (not strong by EU standards)
 - Tax wedge, employer + employee income tax (high and stable)
- U not related to institutions in regressions
 - Except possibly for initial UI benefits and tax wedge
- Conclude: U not explained by labor market institutions alone
 - If institutions matter, likely in combination with other factors

Job Destruction, Job Creation and Unemployment (Giulia Faggio)

- L in new sector has not replaced L lost in old sector
- Q: Is labor reallocation (transition) still at work?
 - Looks at JC, JD and U as initial conditions and policies vary
 - Amadeus database => construct JC and JD rates for 10 TEs
- Macro-level regression findings:
 - Unemployment has a negative effect on JC in new firms
 - High U associated with higher UI benefits and taxes => lower JC?
 - Current long-term U depends on history of short term U and hence JC and JD
- Firm-level regression results:
 - Foreign ownership has a positive effect on employment growth

Initial Human Capital (HC) and Regional L Mkt (Stepan Jurajda and Katherine Terrell)

- Transition: High dispersion and lack of convergence in regional U rates
 - focus on regional differences in HC endowments
 - Idea: Skill and skill-capital complementarities explain high regional dispersion in unemployment
- Findings (BU, CR, HU, UKR):
 - Over one-half of variation in regional U rates explained by concentration of HC
 - Regional variation in HC is wide and rising
 - K and skilled L move to regions with high skill concentration

Skill Endowments in the CE Countries

(Janos Köllö)

- Thesis: Presence of many workers with only primary or vocational education => low employment rates
 - Industry and agriculture (simple tasks) declined in CEs
 - Growing tertiary sector demands higher skills (communication)
 - => Employment of low skilled workers fell dramatically
 - Other explanations: SBTC (ltd. evidence) and wage rigidity
- Evidence: IALS, workplace skill requirements, panel data on L and W of unskilled in occupations, firm-level skill share equations (response to tech. change)
- => Policy issues related to education and training



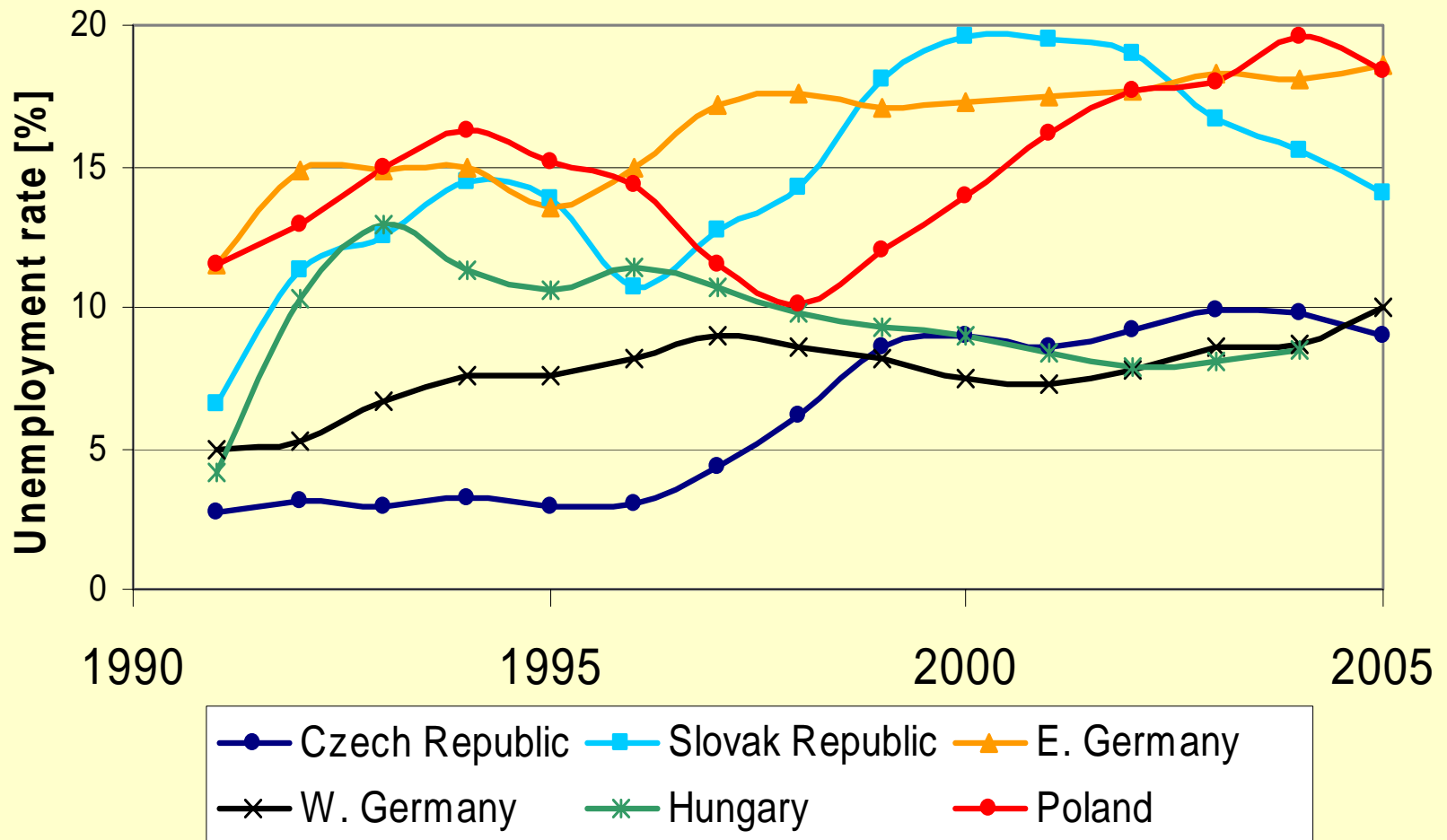
UNEMPLOYMENT IN EAST AND WEST EUROPE

Daniel Münich
Jan Svejnar

Basic Ideas

- Q: Is unemployment a result of
 - ongoing transition (restructuring)
 - macroeconomic policies and external shocks
 - economic structures (mismatch) => focus on L mkt institutions (as in Western Europe), labor mobility and skill formation
- Use *national and district-level panel data* on
 - the unemployed U , vacancies V , inflow S into unemployment, and outflow O from unemployment
 - in CR, HU, PO, SR, and East and West parts of Germany
- Examine the three hypotheses in the context of inflow into unemployment and efficiency of matching of the U and V

Unemployment rates 1991-2005 [%]



Two aspects of research

- Examine the relationship between economic activity and U (and its dynamics) by focusing on
 - inflows S into U (labor turnover/job destruction in firms)
 - Outflows O from U (matching of the unemployed and vacancies)

Setting

- Outcomes in the U-V space seen as an intersection of the Beveridge (UV) curve and the vacancy supply (VS) curve
- UV curve characterizes labor market equilibrium – U exists (U and V do not match instantaneously) and $S = 0$
- The UV curve is negatively sloped -- supply of more vacancies implies lower unemployment
- The VS curve maps combinations of U and V that reflect the employment and wage setting behavior of firms and workers
- The intersection of the UV and VS curves gives the equilibrium rate of unemployment and vacancies
- one can distinguish three types of shifts in the U-V space
 - aggregate demand shocks
 - structural (mismatch) shocks
 - hysteresis

Beveridge curve dynamics

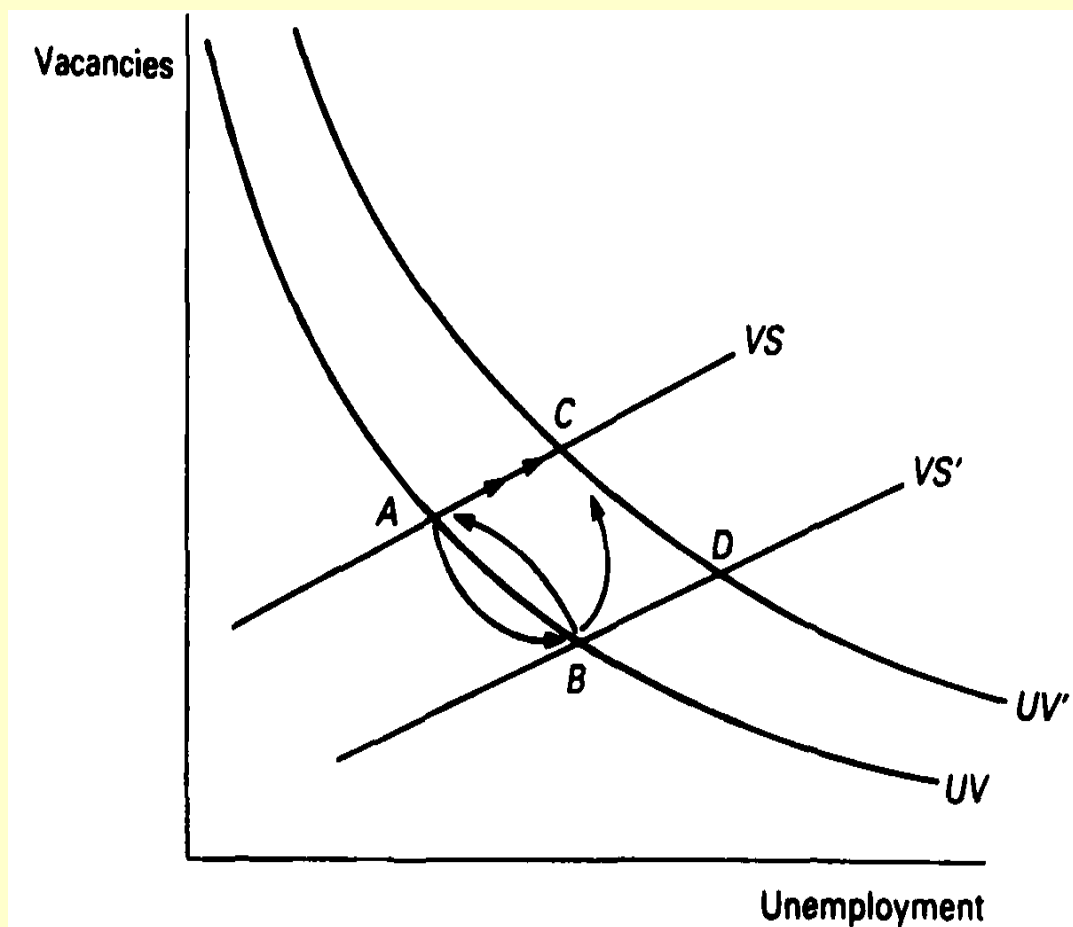
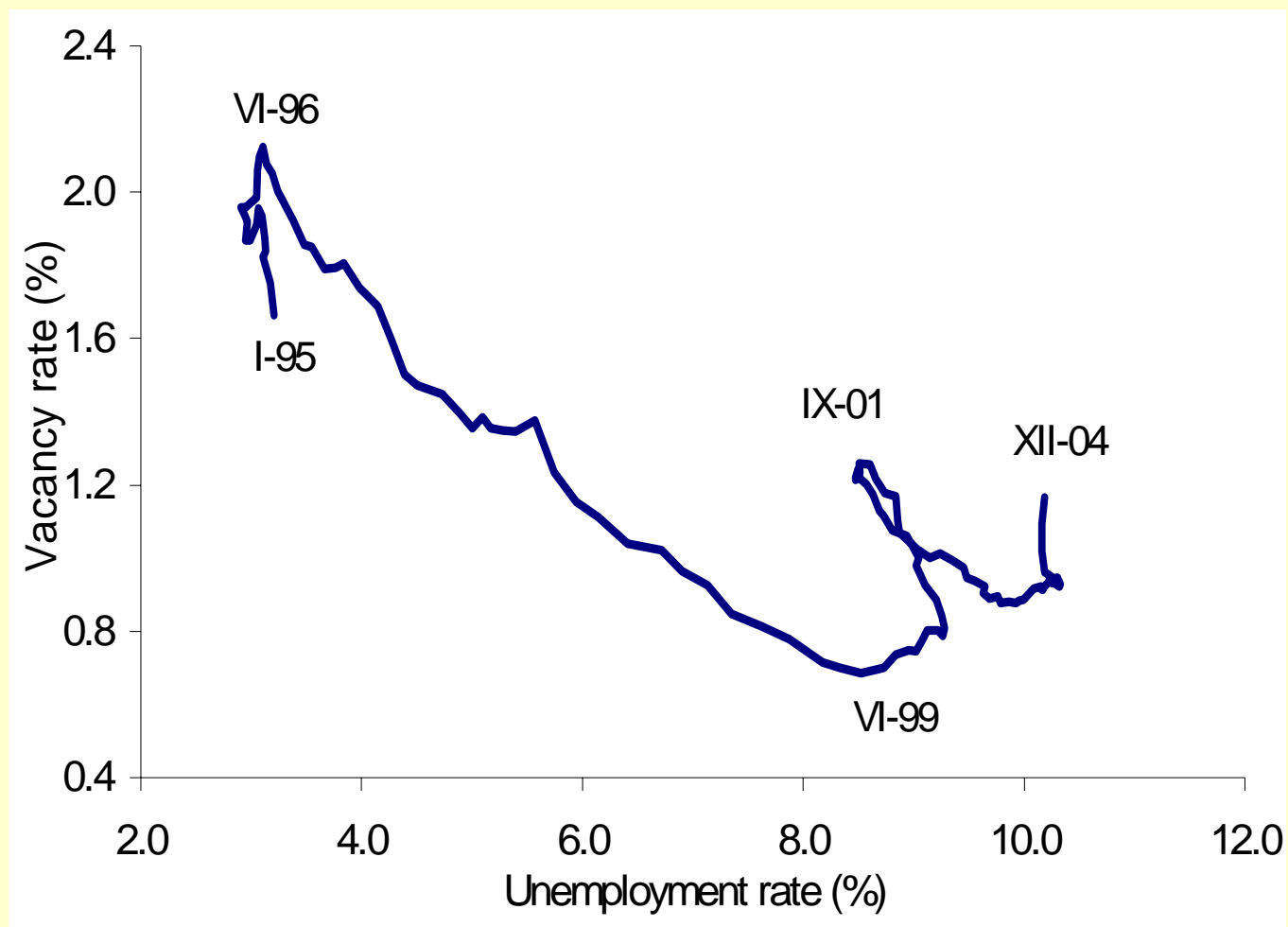
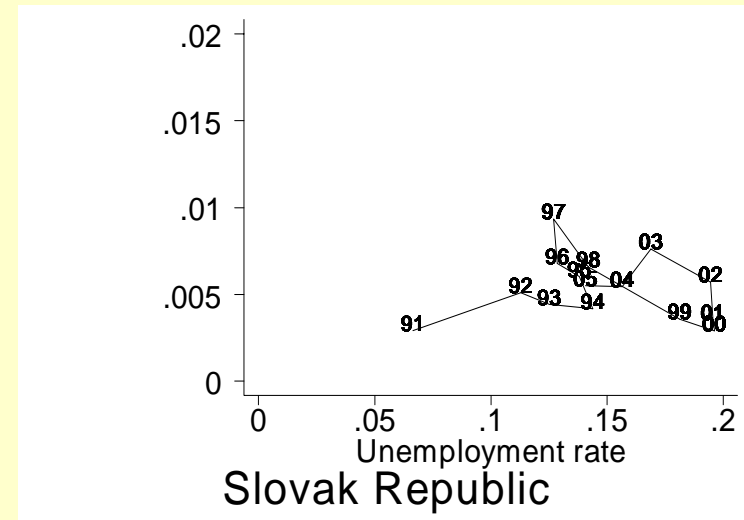
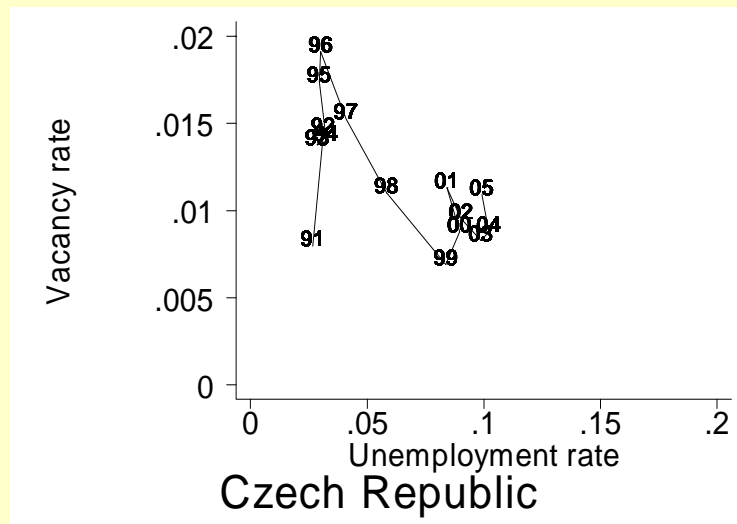
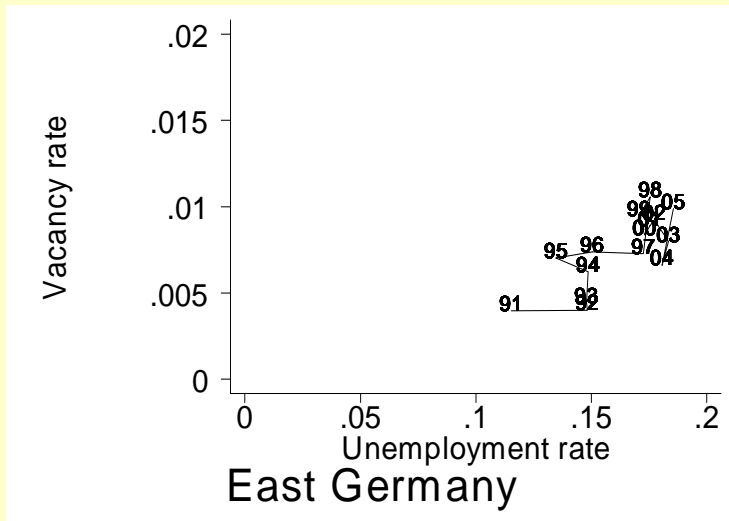


Figure 4. Three types of shocks in Beveridge space

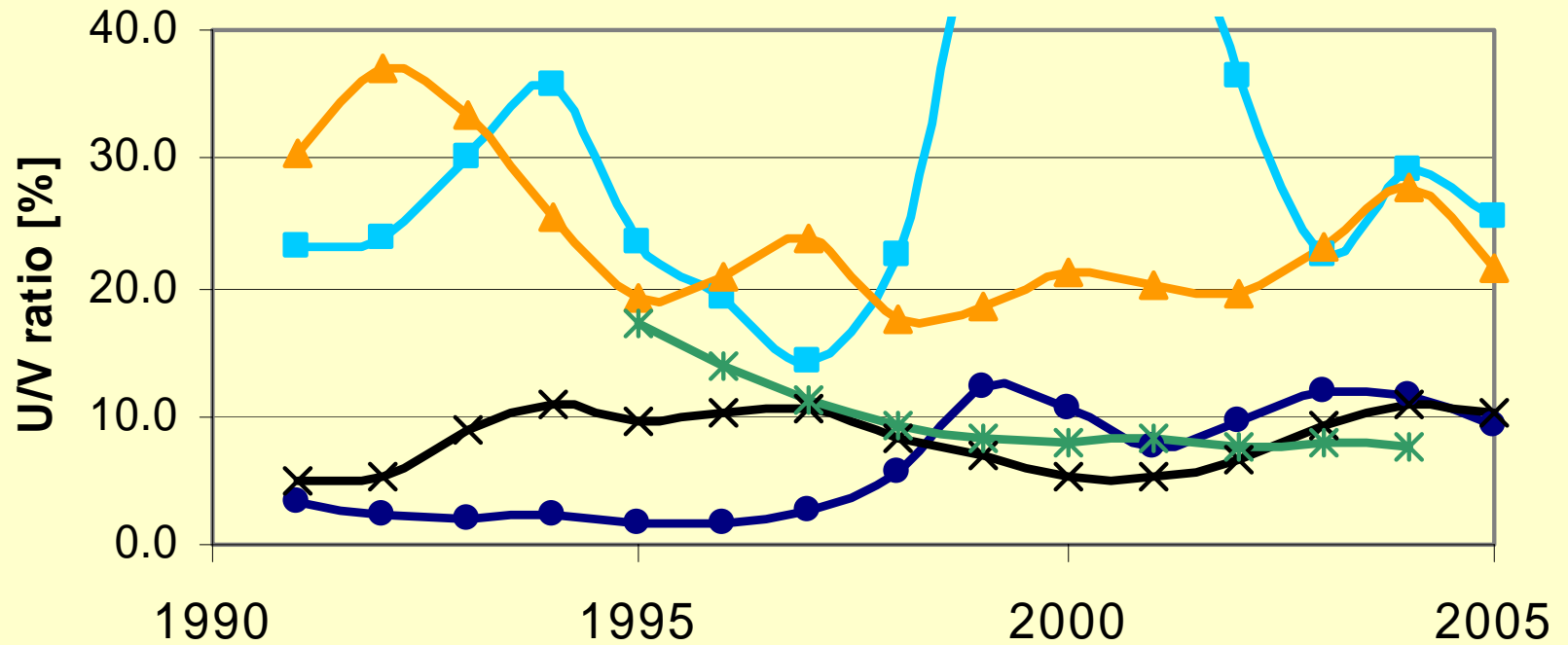
Beveridge curve (Czech Republic, seasonally adjusted data)



Beveridge curves (selected)



U/V ratio 1991-2005 [%]

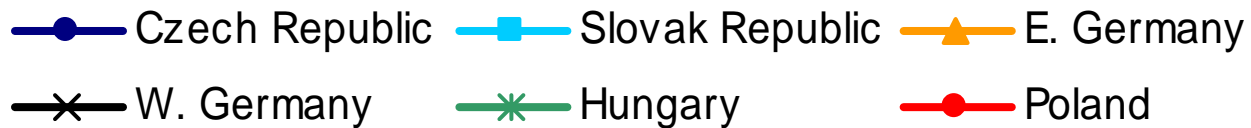
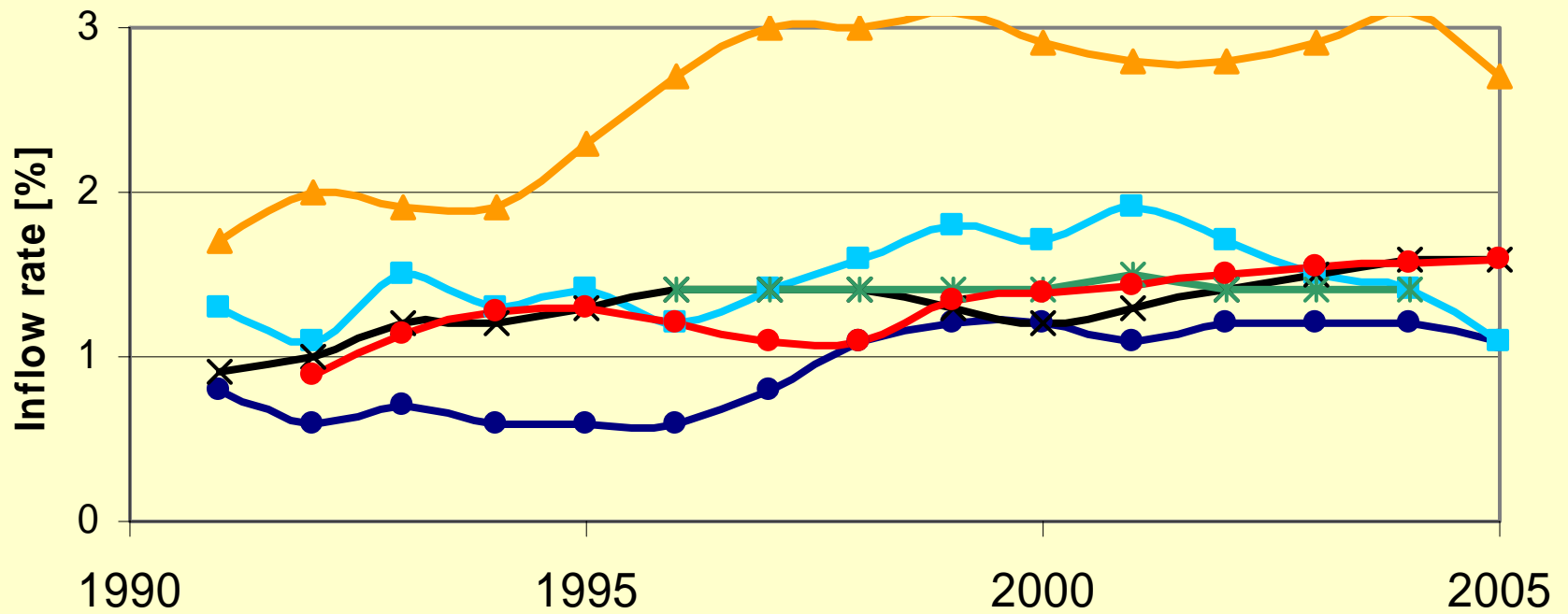


- Czech Republic
- Slovak Republic
- ▲ E. Germany
- × W. Germany
- * Hungary
- Poland

Inflow side

- Models of transition assume that the turnover (inflow) rate would rise dramatically as the old state sector sheds workers who go through U into new jobs in the new private sector (Aghion and Blanchard, 1994, Blanchard, 1997, and Castanheira and Roland, 2000)
- => Prediction: S will be first very high and gradually decline to the level observed in similar market economies (e.g., West Germany)
- The five transition economies -- the S rate trajectories have been very different from the theoretical prediction

Inflow rates 1991-2005 [%]



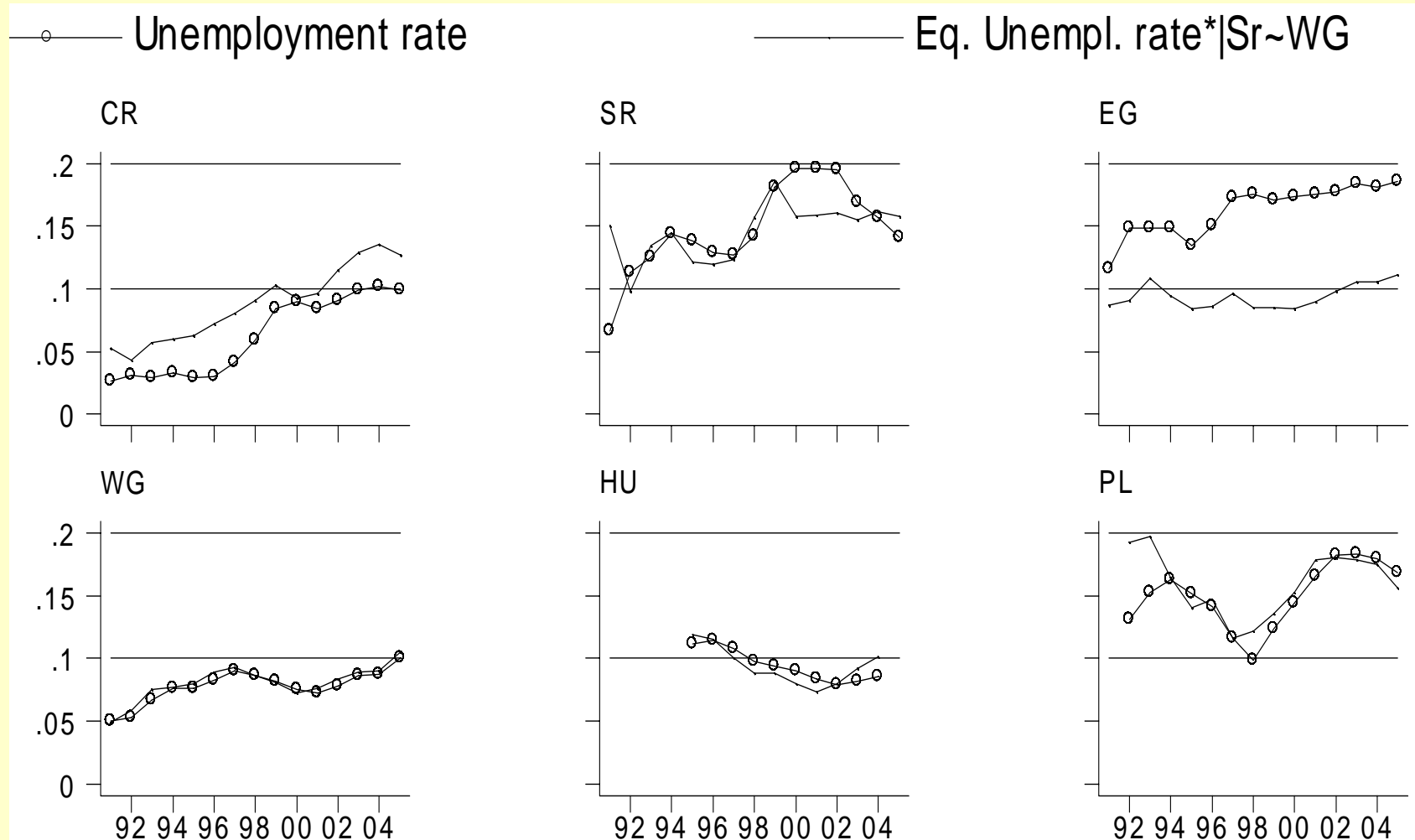
What explains this pattern?

- A leading hypothesis -- significant job-to-job mobility rather than job-to-unemployment flows (Boeri 1999, Terrell and Sorm, 1999, München, Svejnar and Terrell, 2003, and Jurajda and Terrell, 2003, and Boeri, Burda and Köllö, 1998)
- Another explanation -- amount of restructuring not as large as expected relative to market economies (Könings et al. 1996)
 - Market economies restructuring substantially in view of globalization
 - TEs such as Hungary and Poland were already in part restructured
 - Other TEs such as Czech and Slovak republics proceeded slowly in cutting off current and former state-owned firms from subsidies (Lizal and Svejnar, 2002)
- East Germany is a special case (ALMPs)

Transition-related shocks?

- To what extent U in transition economies caused by shocks related to policies pursued by these countries versus shocks that affect them and similar market economies?
- => Take West German economy as a benchmark and calculate the U rate that each transition economy would have, had it had the same S rate as West Germany

Actual and hypothetical unemployment rates during 1992-2005






Outflows and efficiency of matching

Conceptual framework of matching functions

- $O = M(U, V)$
- Some authors expect the matching function M to display constant returns to scale (CRS)
- Others identify reasons such as externalities in the search process, heterogeneity in the unemployed and vacancies and lags between matching and hiring, why increasing returns (IRS) may prevail
- IRS may constitute a necessary condition for multiple equilibria and a rationale for government intervention
- We are finding that increasing returns appear to be an important phenomenon
 - especially in the later (1997-2003) than the earlier (1993-96) period

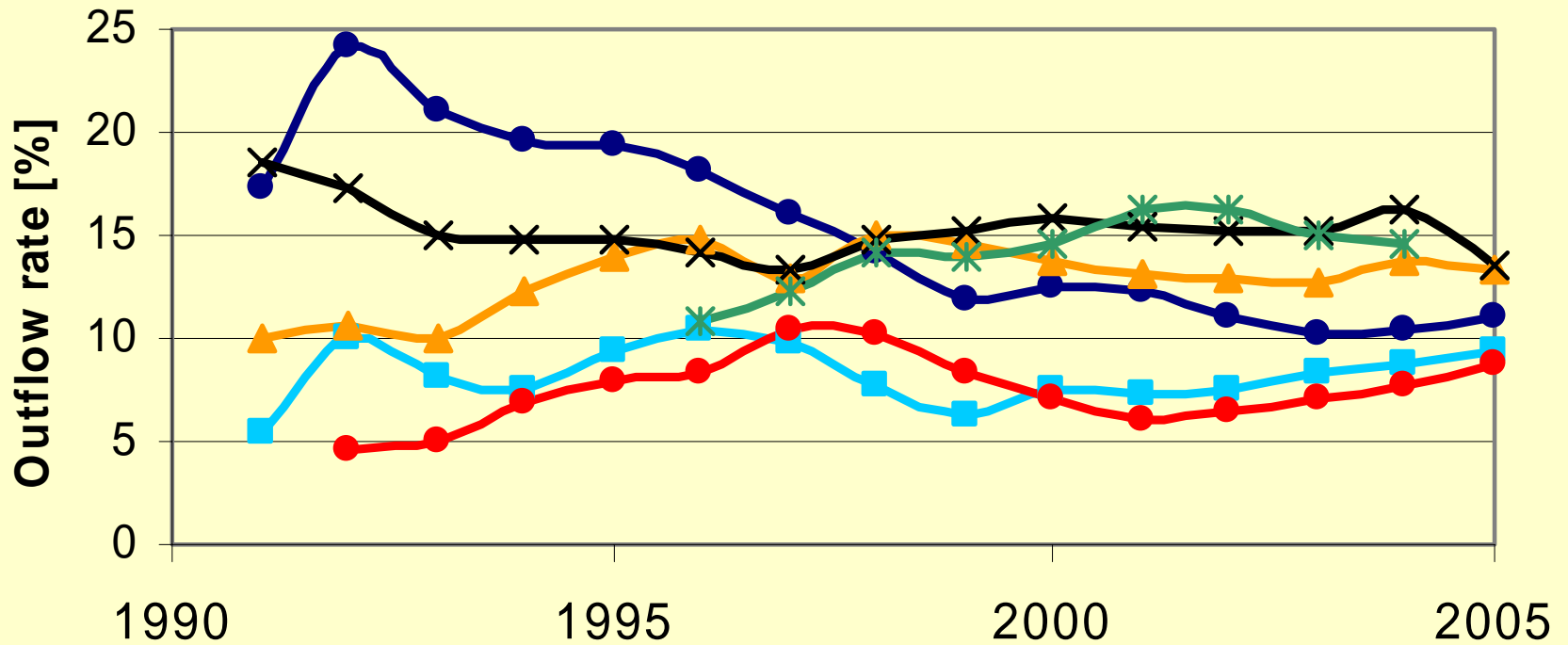
Hypotheses about reasons for high U

- H1: restructuring still at work -- inflow S (from old jobs) high $\Rightarrow U$ high due to high turnover
- H2: U - V matching “fine”, high U caused by low L demand (macro policies, exchange rate, shocks) \Rightarrow low V relative to S
- H3: inefficient U - V matching (L mkt institutions or geographical or skill mismatch) $\Rightarrow U$ and V both high but not in the same districts or skill groups



AGGREGATE TIME SERIES OF REMAINING KEY VARIABLES

Outflow rates 1991-2005 [%]



- Czech Republic
- Slovak Republic
- ▲ E. Germany
- × W. Germany
- * Hungary
- Poland

Vacancy rates 1991-2005 [%]

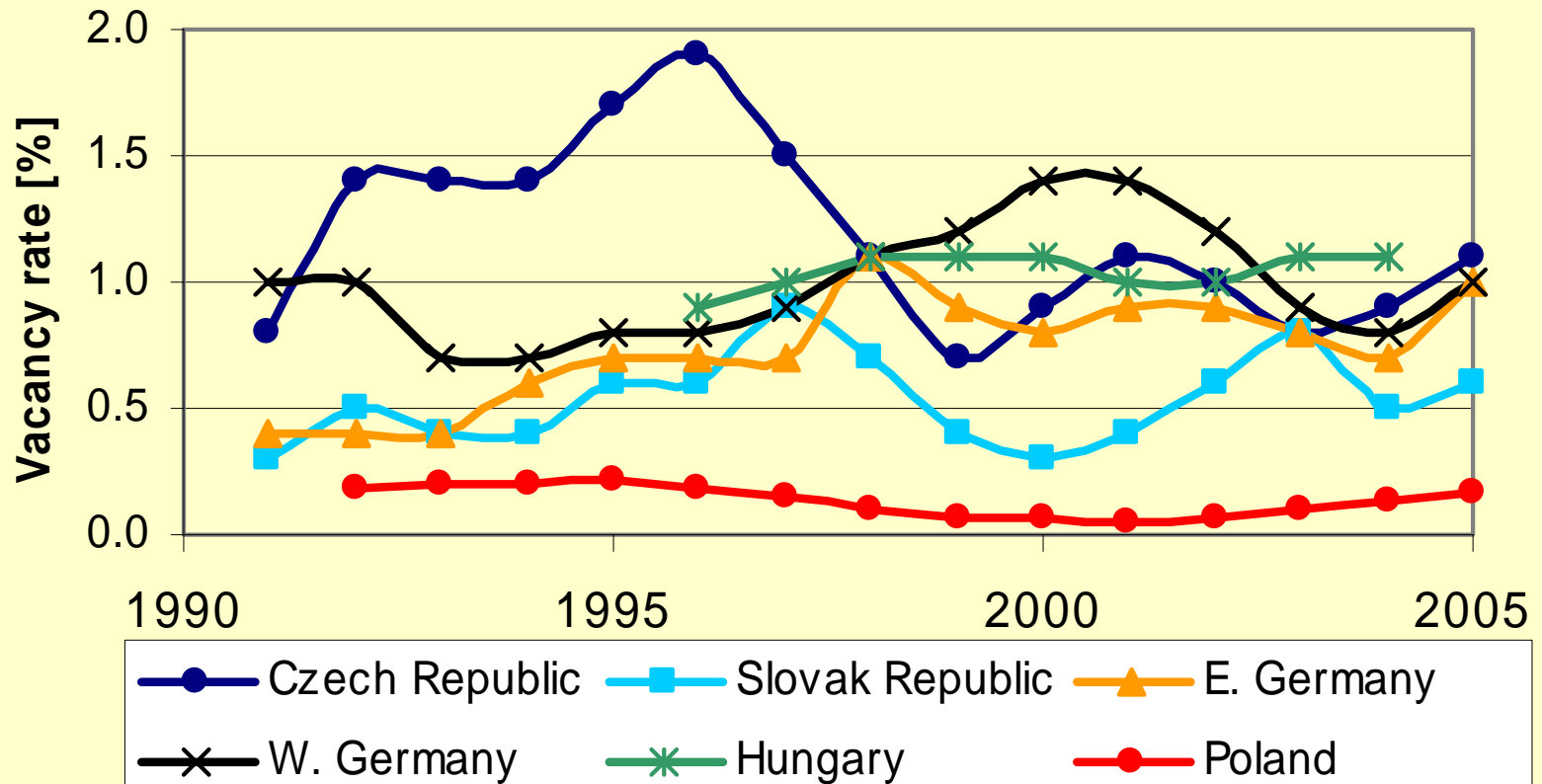


Table 2: Persistence of Regional Differentials - Pearson's Rank Correlations

Base Year 1992							Base Year 1999						
Year	CR	SR	EG	WG	HU	PL*	Year	CR	SR	EG	WG	HU*	PL
Unempl. Rate													
1996	0.81	0.82	0.54	0.94	n.a.	0.90	2002	0.95	0.95	0.87	0.96	0.95	0.86
1999	0.73	n.a.	0.32	0.94	n.a.	0.83	2005	0.91	0.92	0.71	0.89	0.92	0.83
Inflow Rate													
1996	0.79	0.75	0.60	0.89	n.a.	0.90	2002	0.94	0.93	0.87	0.97	0.96	0.94
1999	0.70	n.a.	0.47	0.87	n.a.	0.87	2005	0.90	0.82	0.51	0.80	0.95	0.92
Outflow Rate													
1996	0.50	0.57	0.43	0.84	n.a.	0.48	2002	0.86	0.88	0.68	0.87	0.86	0.45
1999	0.38	n.a.	0.46	0.84	n.a.	0.47	2005	0.83	0.86	0.54	0.78	0.66	0.72
Vacancy Rate													
1996	0.33	0.25	-0.03	0.51	n.a.	0.55	2002	0.69	0.35	0.66	0.81	0.85	0.8
1999	0.29	n.a.	0.01	0.51	n.a.	0.46	2005	0.40	0.34	0.00	0.38	0.50	0.6
U/V ratio													
1996	0.81	0.82	0.54	0.94	n.a.	0.90	2002	0.95	0.95	0.87	0.96	0.95	0.86
1999	0.73	n.a.	0.32	0.94	n.a.	0.83	2005	0.91	0.92	0.71	0.89	0.92	0.83

Literature on matching in TEs

- Grown rapidly
- Produced contradictory results
- Studies use different methodologies and data
- Methodologically, they differ especially with respect to the
 - specification of the matching function and treatment of returns to scale
 - inclusion of other explanatory variables that might affect outflows
 - extent to which they use static or dynamic models
- In terms of data, the studies differ in whether they
 - use annual, quarterly or monthly panels of district-level or more aggregate (regional) data
 - cover short or long time periods
- None adjusts the data for the varying size of the (district or region)

Our approach

- Unlike other studies, we use a more up-to-date empirical methodology and superior data
 - control for the endogeneity of explanatory variables
 - account for the presence of a spurious scale effect introduced by the varying size across units of observation (districts)
 - use long panels of comparable monthly data from all districts in the countries that we analyze

Empirical Specification (simple, but...!)

- Cobb-Douglas function which may be written in a deterministic form as

$$\ln O_{i,t} = \beta \ln U_{i,t-1} + \gamma \ln V_{i,t-1} + \ln A \quad (2)$$

- $U_{i,t-1}$ = number of unemployed in district i at the end of period $t-1$
- $V_{i,t-1}$ = number of vacancies in district i at the end of period $t-1$
- $O_{i,t}$ = outflow to jobs during period t
- A captures the efficiency of matching.

Empirical Specification

- Let lowercase letters stand for logarithms of variables
- a_i be district specific effects
- $\varepsilon_{i,t}$ be an idiosyncratic error term
- Can write (2) as

- $$o_{i,t} = \beta u_{i,t-1} + \gamma v_{i,t-1} + a_i + \varepsilon_{i,t} \quad (3)$$

Estimation problems

$$o_{i,t} = \beta u_{i,t-1} + \gamma v_{i,t-1} + a_i + \varepsilon_{i,t} \quad (3)$$

- OLS not appropriate if a_i are correlated with u and v
- Correlation likely to exist due to differences between districts
- Specific factor is district size (spurious scale effect)
- With panel data, one can use **means deviation** or **first differencing** to remove a_i
- But RHS u and v are predetermined through previous matching (endogenous) → inconsistent estimates → IV needed → first differencing preferred

- **First difference** transformation **contaminates** the transformed variables only with recent error terms $\{\varepsilon_t; t = T-1, T-2\}$
- To see this, rewrite (5) in a first difference form

$$\Delta o_t \equiv o_t - o_{t-1} = \beta(u_{t-1} - u_{t-2}) + \gamma(v_{t-1} - v_{t-2}) + \varepsilon_t - \varepsilon_{t-1} \quad (6)$$

Lagged outflows in (4) in turn given by a lagged version of (3)

$$U_{t-1} \equiv U_{t-2} + S_{t-1} - O_{t-1} \quad \text{---} \rightarrow \quad o_{t-1} = \beta u_{t-2} + \gamma v_{t-2} + \varepsilon_{t-1}$$

$$U_{t-2} \equiv U_{t-3} + S_{t-2} - O_{t-2} \quad \text{---} \rightarrow \quad o_{t-2} = \beta u_{t-3} + \gamma v_{t-3} + \varepsilon_{t-2}$$

- ... and further lags of U (or S), and V can be used as valid instruments.

- **District mean deviations** transformation (fixed-effects): contaminates variables with all error terms.

Newly unemployed

- Studies (e.g., Coles and Smith, 1994, and Coles and Petrongolo, 2003) suggest propensity to match higher at time of entry into unemployment
 - Newly unemployed search through all existing vacancies
 - May have not experienced depreciations of skills
- Remaining unemployed match only with the newly posted vacancies
- To reflect this, we include inflow into unemployment as an additional explanatory variable

Other empirical problems

- Measurement error
- Continuous vs. discrete process
- Segmented labor market
-

Data

- Panel of data on 76 Czech, 38(79) Slovak, 21 Hungarian, 34 East German and 140 West German districts. The data cover January 1991- 2005 and contain monthly observations for the following variables:
- $O_{i,t}$ = the number of individuals flowing from unemployment in district i during period t ,
- $U_{i,t}$ = the number of unemployed in district i the end of period t ,
- $S_{i,t}$ = the normalized number of individuals flowing into unemployment (the newly unemployed) in district i during period t ;
- $V_{i,t}$ = the number of vacancies in district i at the end of period t ,

Matching function estimates for West Germany during 1997-2005

	<u>Trend</u>	Std.Err.	β	Std.Err.	γ	Std.Err.	δ	Std.Err.	RTS	p-value	adjR2
<i>Panel A: Cross-sectional estimators</i>											
OLS	0.012	0.001	0.68	0.00	0.15	0.00	-	-	0.83	0.00	0.85
OLS (Month Dummies)	0.011	0.001	0.69	0.00	0.13	0.00	-	-	0.82	0.00	0.90
OLS (Size Adjusted)	0.010	0.001	0.55	0.03	0.03	0.02	-	-	0.58	0.00	0.62
<i>Panel B: Panel data estimators</i>											
Random Coefficients	0.010	0.000	0.74	0.01	0.08	0.00	-	-	0.81	0.00	0.65
Fixed Effects	0.010	0.000	0.74	0.01	0.07	0.00	-	-	0.81	0.00	0.66
1st Differences	0.013	0.003	1.64	0.06	0.07	0.01	-	-	1.71	0.00	0.64
<i>Panel C: Panel data estimators (preferred estimation methods)</i>											
1st Differences + IV	0.014	0.002	1.31	0.04	0.14	0.03	-	-	1.45	0.00	0.63
1st Differences + IV	0.012	0.002	1.27	0.04	0.16	0.03	0.12	0.01	1.56	0.00	0.64
1st Differences + IV*	0.009	0.002	1.28	0.04	0.13	0.03	0.15	0.01	1.55	0.00	0.63

*Estimated coefficient on lagged outflow added: $\phi = .200$ (.033)

Number of observations = 14734

Matching function estimates

Panel A: 1994-1996

Country	Trend	Std. Err.	β	Std. Err.	γ	Std. Err.	δ	Std. Err.	adjR2	RTS	p-value	Nobs
CR	-0.112	0.027	0.75	0.16	0.23	0.11	0.26	0.03	0.65	1.24	0.31	2661
WG	-0.103	0.005	1.27	0.07	0.22	0.04	0.20	0.02	0.67	1.69	0.00	5004

Panel B: 1997-2005

Country	Trend	Std. Err.	β	Std. Err.	γ	Std. Err.	δ	Std. Err.	adjR2	RTS	p-value	Nobs
CR	-0.039	0.008	1.16	0.07	0.51	0.06	0.19	0.02	0.74	1.86	0.00	7770
WG	0.012	0.002	1.27	0.04	0.16	0.03	0.12	0.01	0.64	1.56	0.00	14734

Preliminary Conclusions

- H1 (restructuring – high S)
- H2 (low L demand -- low V relative to S)
- H3 (high U and V and inefficient U - V matching)

- West Germany consistent with H1 and H2; U has risen with increasing S (H1), V declined while inflow has risen (H2), U and V rates high but matching is efficient (not H3)
- Czech Republic starts with low U but increasingly conforms to H1 (higher U and S) and H2 (V low relative to S), but not H3 (low V and efficient matching)

Preliminary Conclusions (2)

- H1 (restructuring – high S)
- H2 (low L demand -- low V relative to S)
- H3 (high U and V and inefficient U - V matching)
- East Germany conforms to H1 as well as H2; relatively high U and S , and low V rate
- Slovakia -- high U , rising S rates and a low V rate; consistent with a combination of H1 and H2 (H3 = ?)
- Poland similar to Slovakia but very low V
- Because of low U , Hungary does not fit clearly into any H: S is relatively moderate and O is sizable (not H1), V rate is not too low relative to S (not H2), U and V are not relatively high (not H3)



Additional conclusions from inflows

- Transition economies may have experienced significant job-to-job mobility rather than job-to-unemployment flows
- Amount and speed of restructuring may not have been as large as theorists expected, relative to restructuring in market economies

Overall Project Conclusions

- Institutions do not seem to drive unemployment (B-C-H); presence of low skilled workers does (K)
- Regional disparities in *U*, *S* and *O* are persistent (J-T, K, M-S)
- Restructuring proceeding everywhere (F, M-S)