Unemployment and Vacancies in Turkey: The Beveridge Curve and Matching Function

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Introduction

The views expressed in this presentation are those of the authors and do not represent the official views of the Central Bank of the Republic of Turkey.

Introduction

The goal of the paper:

- To examine the relationship between unemployment and vacancies within the context of the Beveridge curve and Matching Function for Turkey.
- To investigate the compliance of these two labor market indicators of Turkish economy with the well documented characteristics of the relationship between unemployment and vacancies in the existing labor economics literature.

Introduction

Findings

- We find that Turkish Beveridge Curve depicts a negative relationship between vacancies and unemployment as theory suggests.
- The unemployment-vacancies pairs are found to follow a counterclockwise trajectory around the empirical Beveridge curve.
- The estimated Matching Function shows a positive relationship between job finding rate and tightness of labor market.
- The parameters of the estimated matching function are found to be different for different data sets (Kariyer.net vs. Turkish Employment Agency (TEA)).
- Disaggregated Beveridge curve shows different patterns for different types of unemployed.

Outline

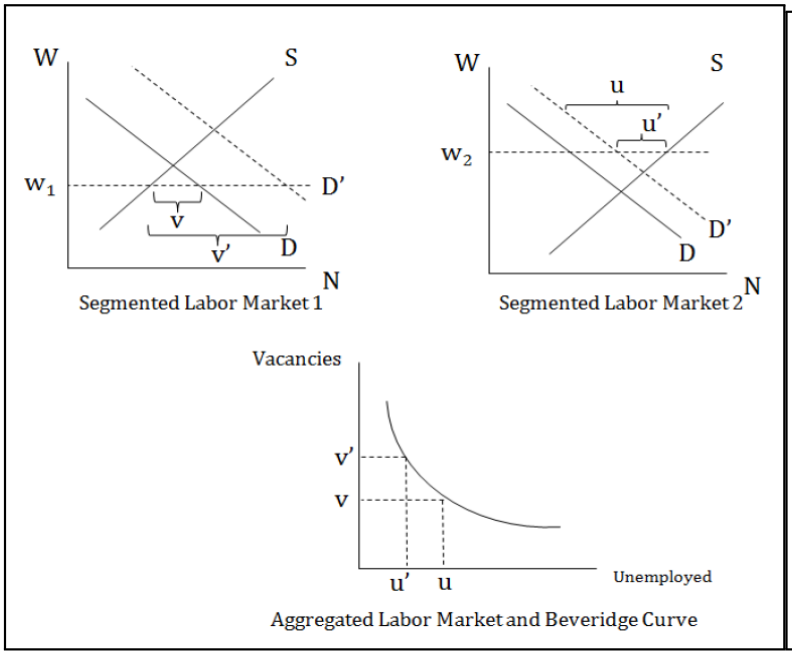
Outline of the presentation

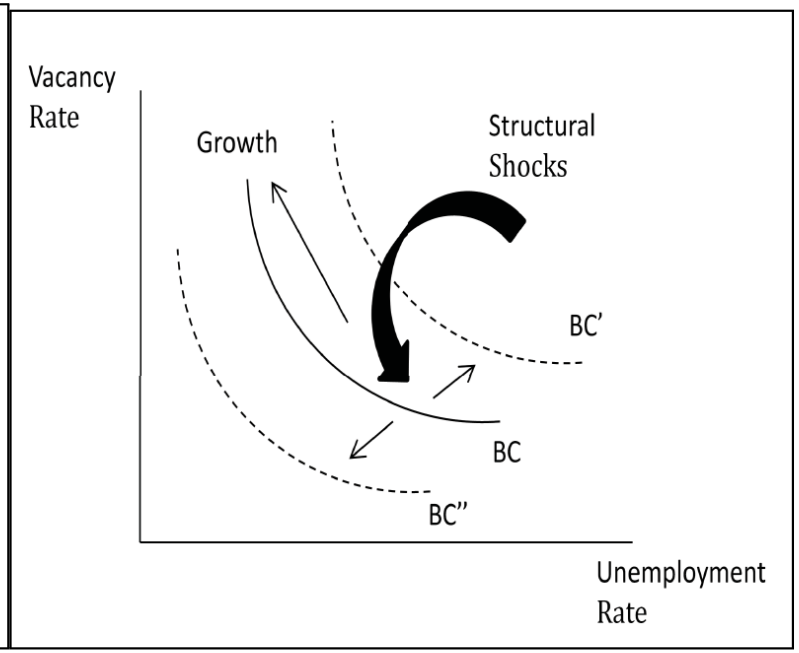
1. Theoretical Background
2. Empirical Literature
3. Data
4. Turkish Beveridge Curve and Matching Function
5. Disaggregated Beveridge Curve
6. Conclusion

Beveridge Curve Theoretical Background

First approach: Disequilibrium

Disequilibrium in segmented labor markets: real wage rigidities
Dow and Dicks-Mireaux (1958), Lipsey (1960) and Hansen (1970)





Beveridge Curve Theoretical Background

Second Approach:Search and Matching Framework

- Diamond-Mortensen-Pissarides (DMP) model

$$m(U_t, V_t) = \mu U_t^{\alpha} V_t^{\beta} \quad \text{where } \mu, \frac{dm}{dU} \text{ and } \frac{dm}{dV} \geq 0, \quad (1)$$

$$\frac{dU_t}{dt} = s \times (1 - U_t) - m(U_t, V_t), \quad (2)$$

Long run equilibrium: $U_t = U, V_t = V$ and $m(U_t, V_t) = m(U, V)$,

$$U = 1 - \frac{m(U,V)}{s} \quad \text{(Beveridge Curve)} \quad (3)$$

Empirical Literature

Beveridge Curve

- **US**: Blanchard and Diamond (1989), Valetta (2005), Cotti and Drewianka (2007), Hobijn and Sahin (2012).
- **Britain:** Jackman et al.(1989) and Wall and Zoega(1997).
- **Canada:** Samson (1994).
- **Sweden:** Edin and Holmlund (1991).
- **Turkey:** Bayraktar-Saglam and Gunalp (2012).

Empirical Literature

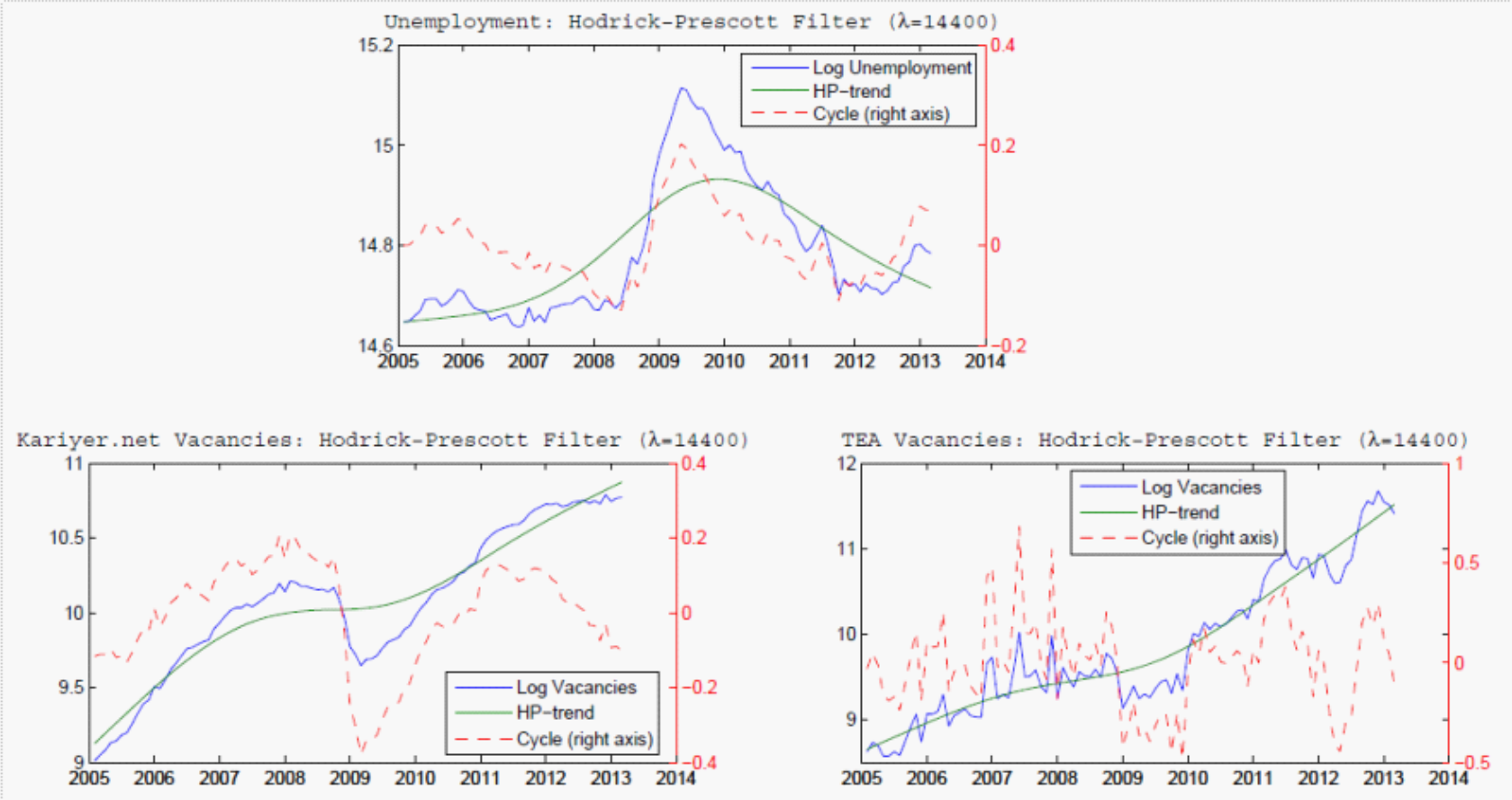
Matching Function

- Blanchard and Diamond (1989), NBER
- Pissarides (1986), Coles and Smith (1996)
- Shimer (2005, 2007)
- Burda and Wyplosz (1994)
- Anderson and Burgess (2000)
- Warren (1996)

Unemployment and Vacancies

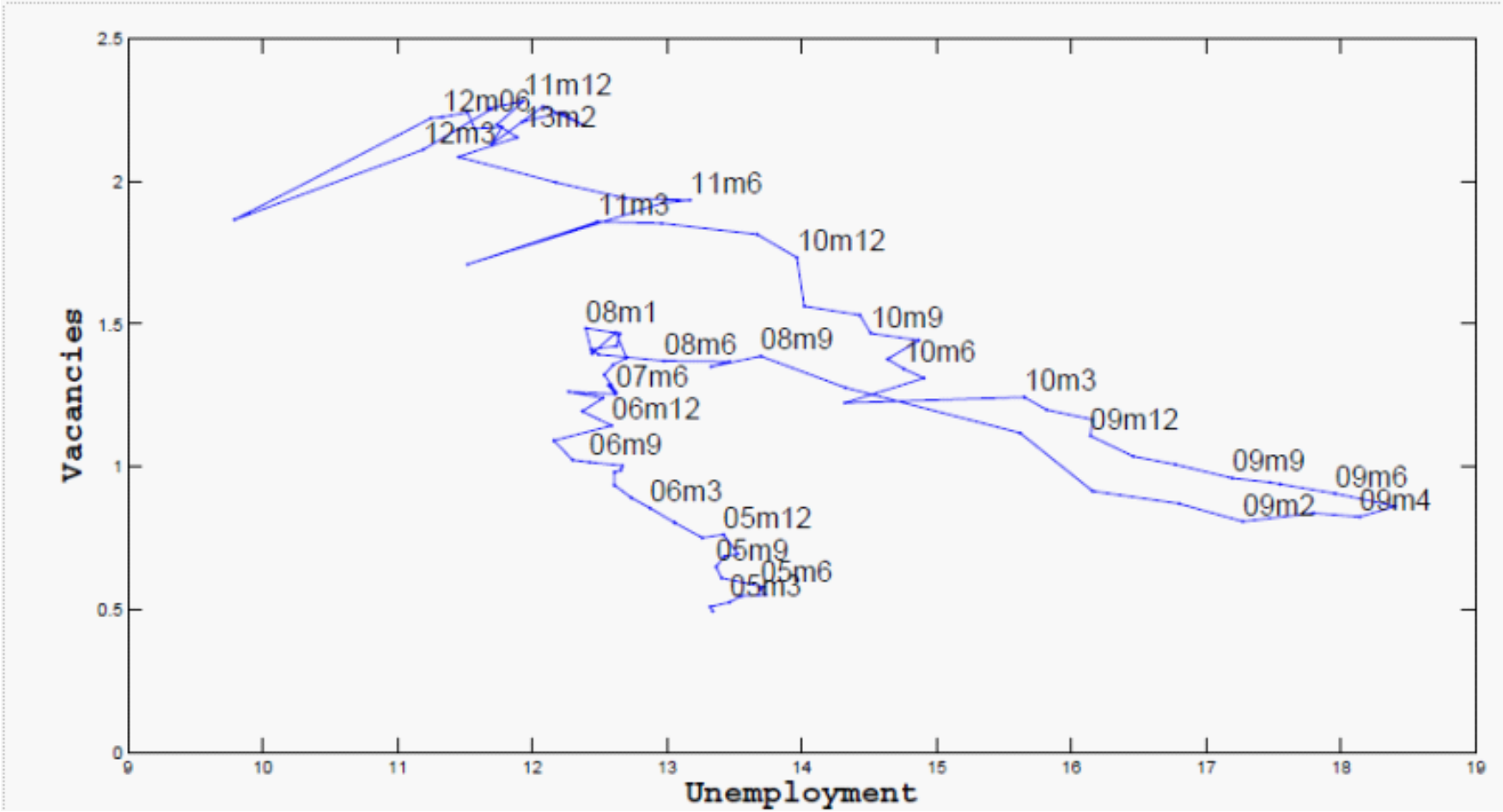
Data

Non-farm unemployment rate (TURKSTAT), kariyer.net vacancies, Turkish Employmeny Agency (TEA) vacancies, 2005 M1-2013 M2, job finding rates, Sengul (2012)



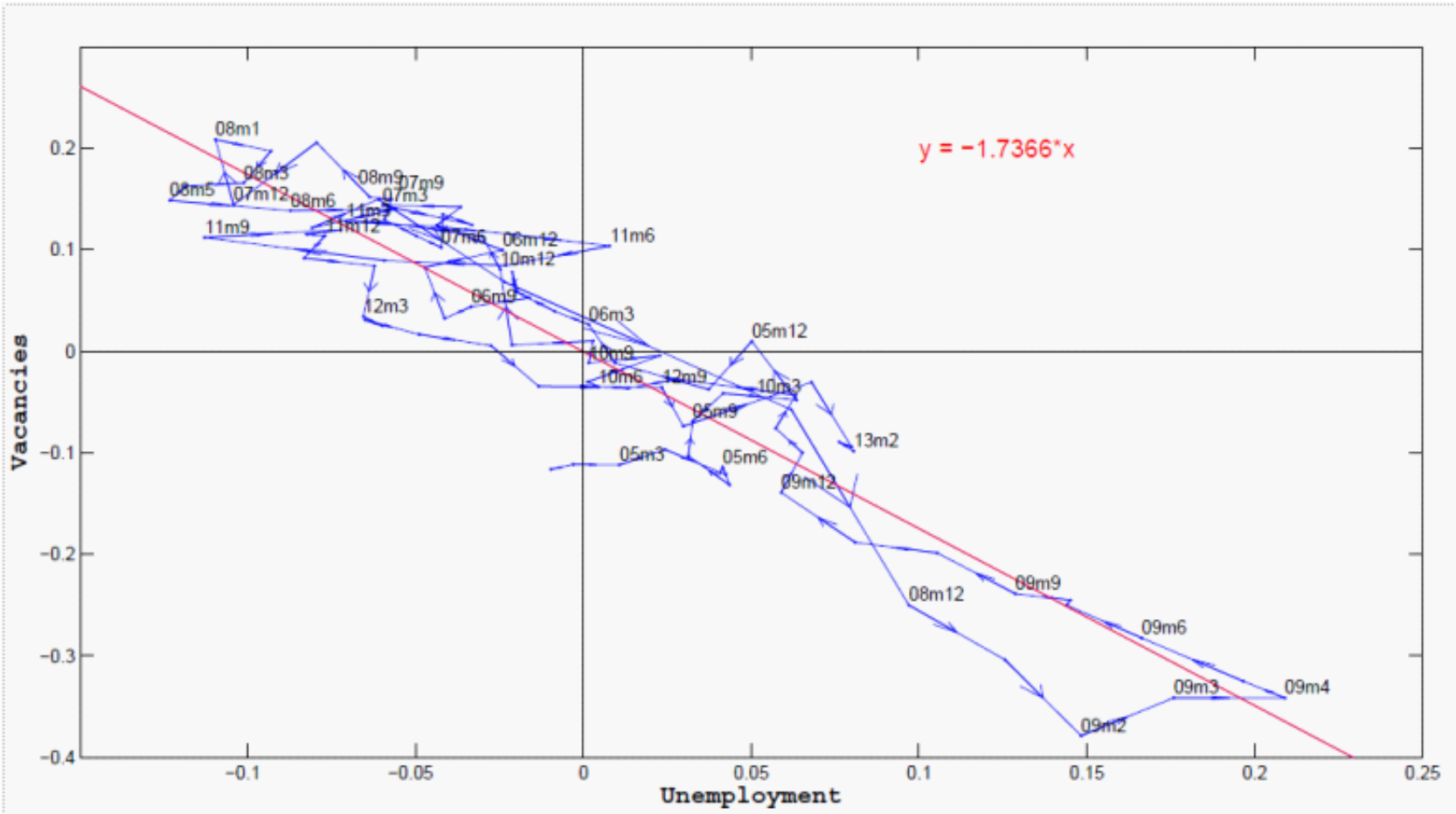
Unemployment and Vacancies

Turkish Beveridge Curve in levels with Kariyer.net Data



Unemployment and Vacancies

Turkish Beveridge Curve with Kariyer.net Data-Detrended



Unemployment and Vacancies

Turkish Beveridge Curve

- We find that Turkish Beveridge Curve depicts a negative relationship between vacancies and unemployment as theory suggests.
- The unemployment-vacancies pairs are found to follow a counterclockwise trajectory around the empirical Beveridge curve.

Unemployment and Vacancies

Matching Function

$\frac{m(U,V)}{U}$ = job finding rate $\quad \frac{m(U,V)}{V}$ = vacancy yield

$$\frac{m(U_t,V_t)}{U_t} = f_t = \mu(\frac{V_t}{U_t})^{1-\alpha}, \tag{4}$$

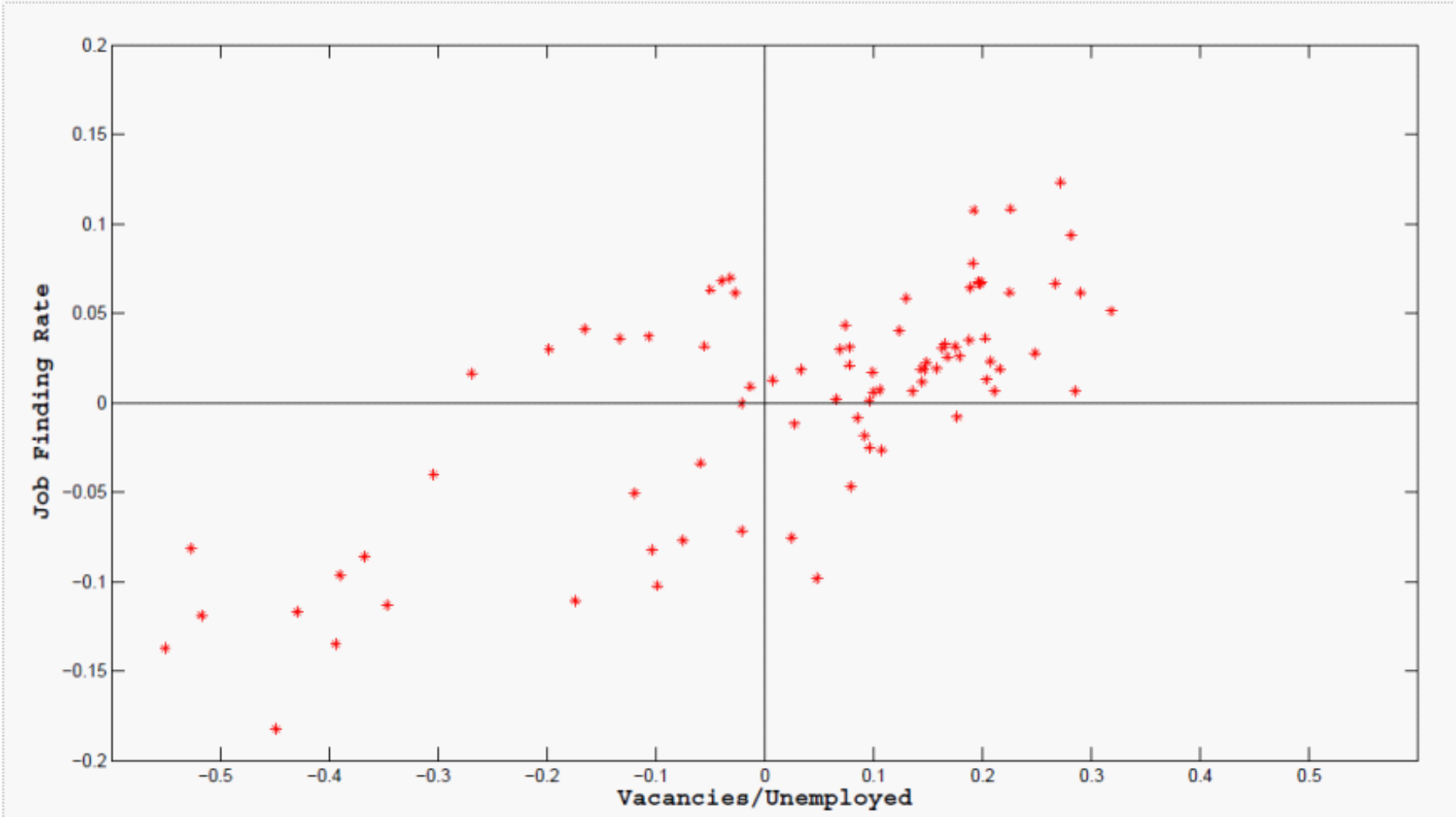
$$\frac{\partial f_t}{\partial U_t}\frac{U_t}{f_t} = \alpha - 1 < 0 \quad \text{(congestion effect)} \tag{5}$$

$$\frac{\partial f_t}{\partial V_t}\frac{V_t}{f_t} = 1 - \alpha > 0 \quad \text{(spillover effect of vacancies)} \tag{6}$$

$$\log f_t = \log \mu + (1-\alpha)\log(\frac{V_t}{U_t})$$

Unemployment and Vacancies

Matching Function with HP detrended series



Unemployment and Vacancies

Matching Function Estimation for Turkey

Dependent Variable (job finding rate)	Vacancies/Unemployment (V/U)	$\overline{R}^2$
Kariyer.net (2006-2012)	0.20	0.86
	(0.04)***	
TEA (2005-2013:M2)	0.54	0.72
	(0.05)***	

Values in parenthesis represent standard errors.

*** implies significance at 0.01 level

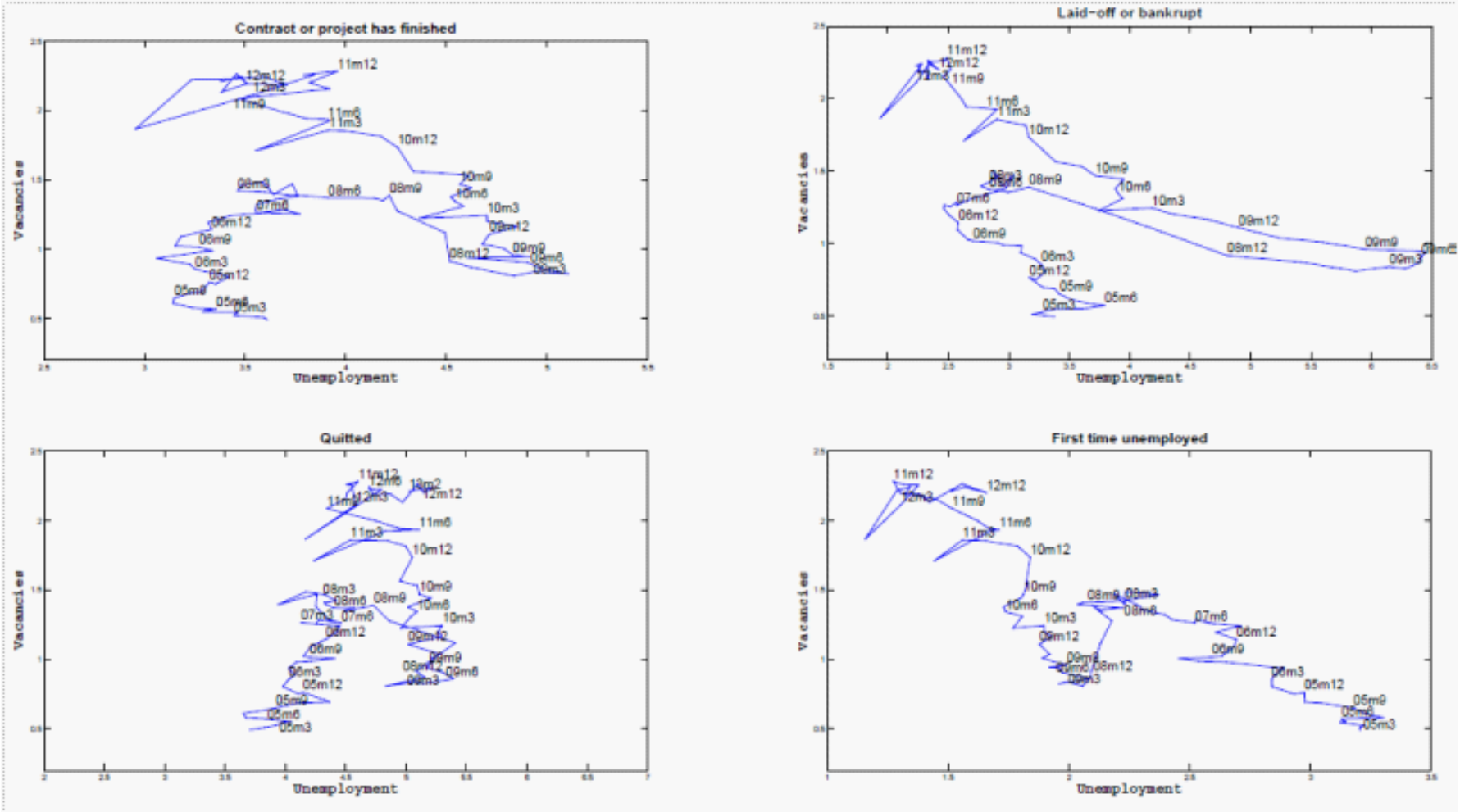
Unemployment and Vacancies

Matching Function Estimation for Turkey

- The estimated Matching Function shows a positive relationship between job finding rate and tightness of labor market.
- The parameters of the estimated matching function are found to be different for different data sets we use Kariyer.net vs Turkish Employment Agency.
- Negative congestion effect of the pooled of unemployed is higher in TEA data.

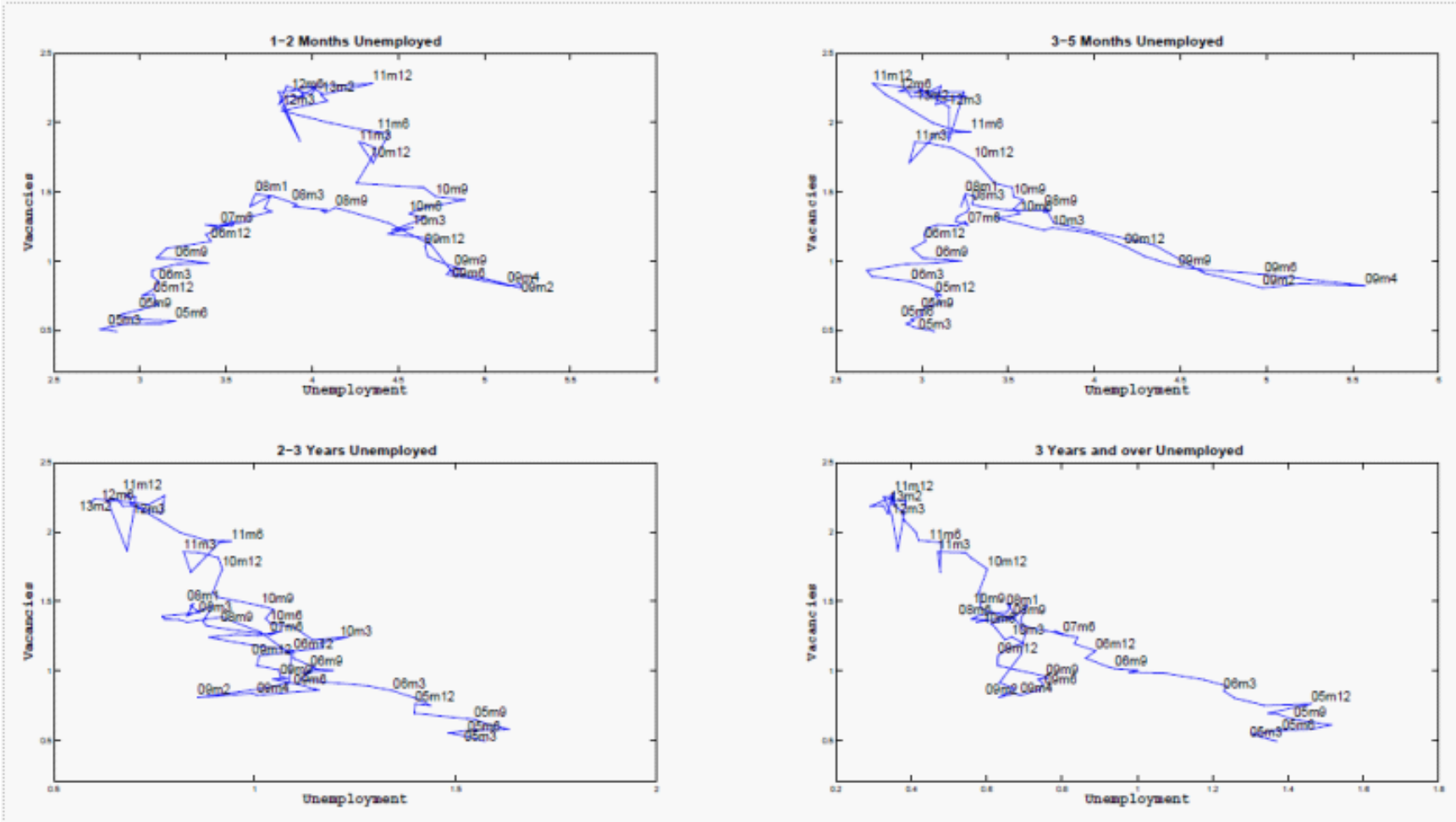
Disaggregated Beveridge Curve

Reason of Unemployment



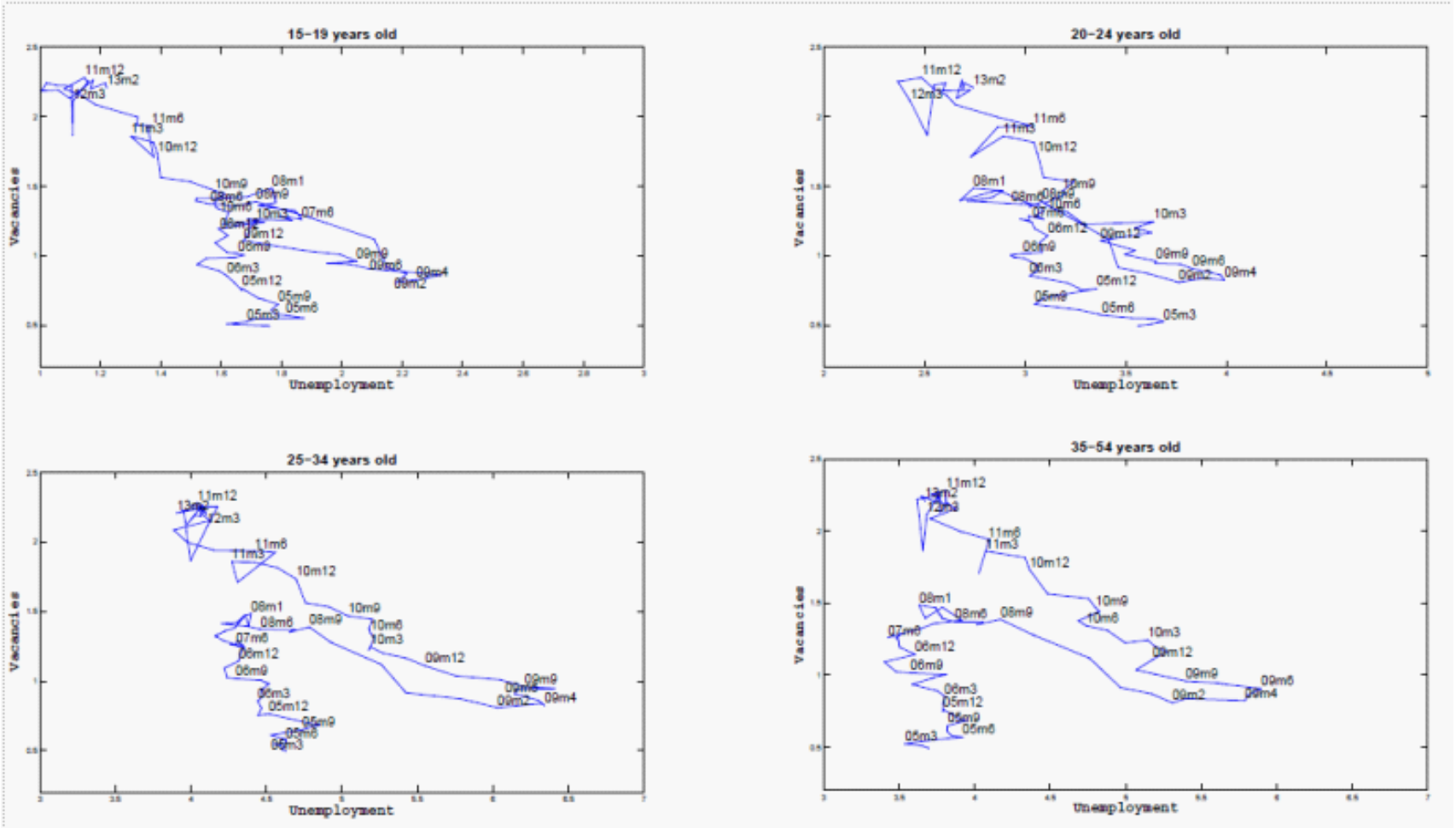
Disaggregated Beveridge Curve

Unemployment Duration



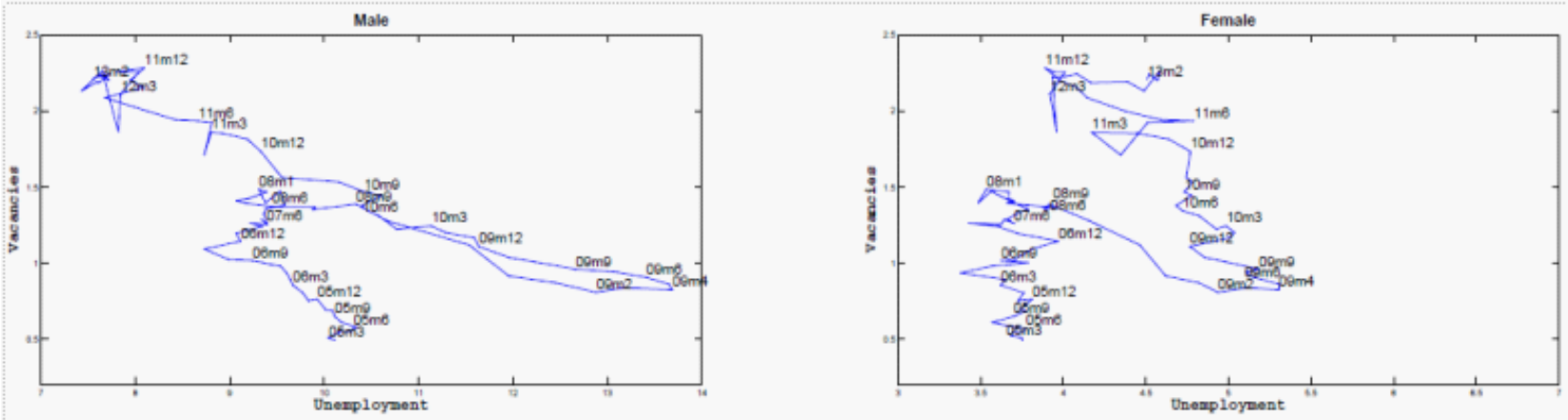
Disaggregated Beveridge Curve

Age of Unemployment



Disaggregated Beveridge Curve

Gender of Unemployed

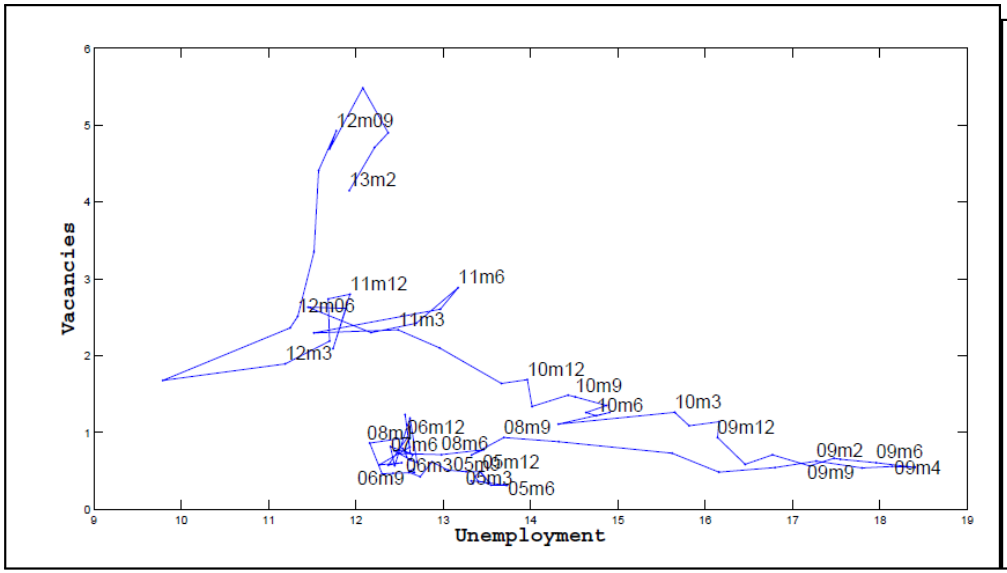
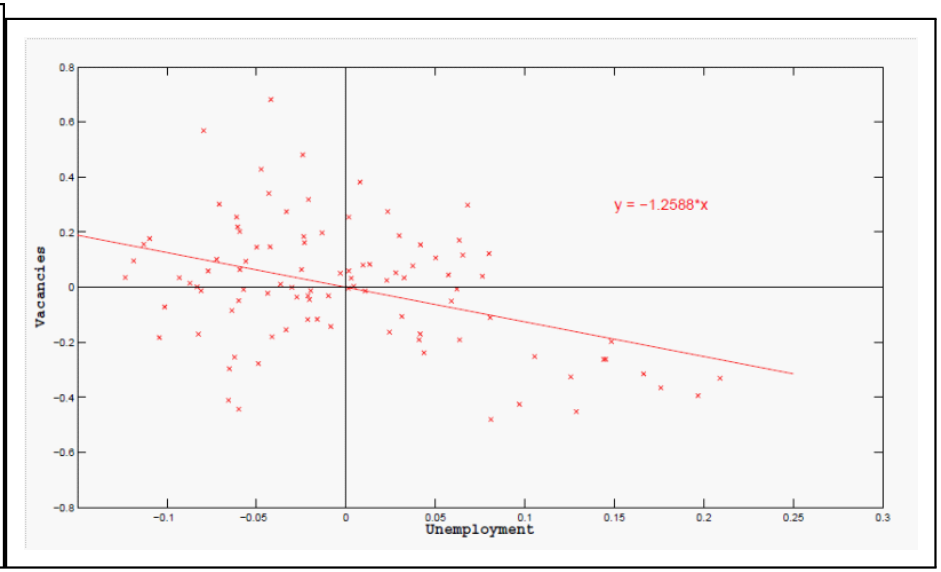


Conclusion

- Disaggregated Beveridge curve shows different patterns for different types of unemployed.
- We find that Turkish Beveridge Curve depicts a negative relationship between vacancies and unemployment as theory suggests.
- The unemployment-vacancies pairs are found to follow a counterclockwise trajectory around the empirical Beveridge curve.
- The estimated Matching Function shows a positive relationship between job finding rate and tightness of labor market.
- The parameters of the estimated matching function are found to be different for different data sets we use Kariyer.net vs Turkish Employment Agency

Conclusion

- Thank you!!

Unemployment and Vacancies

Turkish Beveridge Curve with TEA Data