EUROPEAN ACADEMIC RESEARCH, VOL. I, ISSUE 6/ SEPEMBER 2013
ISSN 2286-4822, www.euacademic.org
IMPACT FACTOR: 0.485 (GIF)

Relation between Bank Loans and Unemployment in the European Countries

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Abstract:

In this study; relationship between total credit volume of the banking sector and unemployment in fourteen selected European Union countries was analyzed for the 1980-2012 period by means of panel data analysis method that takes into consideration structural breaks and cross-section dependence. In the result of the analysis it has been determined that credit increases has been reducing effect on the unemployment rate in these countries.

Key words: Bank Loans, Unemployment, Panel Data Analysis with Multiple Structural Breaks.

Jel Codes: E24, E58, G21.

1. Introduction

Credit channel, which is among the monetary transmission channels, operates through the loans provided by the banking sector for the households and firms and fulfills one of the most important function of the financial system (Han, 2009). Proper operation of this channel is closely related with the development level of the financial system (Gatti et al. 2012). The banks, which are the elements of a developed finance system, allow for further investment and production by

providing easy and cheap financing, and thus support new employment in the economies (Bernanke and Blinder 1992; Pojatina 2008). Rising in the credit volume of banking sector will increase investment and consumption expenditures and hence employment ratio will increase (Lipsey et al. 1994, 228). Consumer loans provided by the banking sector increase household consumption expenditures and encourage the firms for further production, investment and employment (Pagano and Pica 2012).

Banks support real sector by providing loans in terms of investment, production, economic growth and employment, especially in crisis periods. In this respect, there is a strong relationship between the real sector and the finance sector (Castillo 2009).

Expansionary monetary policies increase available loan volume, thus credit supply of the banks raise. Increased loan supply results in enhancing in investment and consumption expenditures of firms and thus total production level of firms increase, and new employment opportunities are created (Mishkin 1996). On the other hand, increases in microcredits used for the financing of small-scale enterprises reduce unemployment (Armendariz and Jonathan 2005) and increases the efficiency and volume of business of small enterprises (Robinson 2001).

It has been observed that unemployment increases when banking sector fails to operate efficiently (Ordine and Rose 2008). Disruptions in the credit market have a negative impact on total economic activities and employment (Wasmer and Weil 2004). For instance, it is accepted that behind the high level unemployment at Russia in 2002, there were the 1998 financial crisis and the subsequent narrowing in credit volume (Lakstutiene et al. 2011). Similarly, it is determined that troubles in credit market in European Union (EU) countries and the USA affect total economic activities and employment rates (Acemoglu 2001).

Research on the relationship between credit volume and employment emphasize that these variables are generally correlated. Bernanke and Blinder (1992) tested the relationship between bank credits and unemployment ratio using 1959:01-1989:12 period data of the USA and concluded that the narrowing in credit volume increases unemployment ratio at the same time. Ordine and Rose (2008) tested the relationship between bank loans efficiency and employment for Italia and reported that a 10% increase in banking sector credit volume increased employment by 5%. Han (2009) analyzed the relationship between financial difficulties and unemployment for the USA and reported that the difficulties in accessing financial sources caused employment loss in the economy. Benmelech et al. (2010) found that there was a correlation between the unemployment and the difficulties in accessing credits in 1993-2009 period in the USA metropolitan cities. Pagano and Pica (2012) analyzed the relationship between employment and wages for 63 countries using the data of 1970-2003 period and found that the increase in credit volume positively affected employment, however didn't have a significant impact on wages. Shabbir et al. (2012) analyzed the relationship between credit volume and employment for Pakistan using the data of 1973-2007 period with bounds testing approach and reported that 1% increase in credit volume reduced unemployment by 2.3%. Feldman (2012) analyzed the effects of bank loans in 53 countries for 1977-2005 period using two-stage generalized least squares method and found that a 1% increase in banking sector credit volume reduced unemployment in these countries by 2.94%.

The recent situation in countries reveals that unemployment had been an important economic and social problem especially in the USA and the EU because of 2008 global economic crisis. Due to the narrowing in domestic demand, unemployment ratio reached 25% in Spain; 24% in Greece; 15% in Portugal and 10% in the USA. While this

situation increased the amount of unemployment compensation, on the other hand that disrupted budget balances and decelerates economic growth of countries. As the USA showed 2.2% growth in 2012, the economies of Greece, Portugal and Spain shrank by 6.4%, 3.2% and 1.7% respectively. Countries and international organizations still continue to find a solution to this problem.

It has been considered that the loans increases provided by the banking sector can be a policy proposal for unemployment because loans have a potential to stimulate domestic demand, to encourage investments and to create new employment opportunities (Saint-Paul 2007; Pagano and Pica 2012; Shabbir et al. 2012). In this study, the relationship between unemployment ratio and the credit volume was analyzed for fourteen EU countries[1], whose unemployment ratio higher than 10% in 2012, by using 1980-2012 period data via panel cointegration method that takes into consideration cross-sectional dependence and multiple structural breaks. The study uses a quite actual subject and analysis method; therefore it is expected to contribute to the literature.

2. Analysis

2.1. Data Set and Model

In this study, unemployment rate (*UR*) and domestic credit provided by banking sector credit volume (% of GDP) (*CV)* data at 1980-2012 period of fourteen EU countries were used. The data have been obtained from the IMF and the World Bank web sites. The following model was used in this study:

$$UR_{it} = \beta_{0i} + \beta_{1i} CV_{it} + u_{it} \qquad (1)$$

[1] Bulgaria, Croatia, Cyprus, France, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Poland, Portugal, Slovak Republic and Spain.

2.2. Cross-Section Dependence Test

Whether the cross-sectional dependence is taken into account or not significantly affects the results (Breusch and Pagan 1980; Pesaran 2004). Therefore, the presence of cross-section dependence in the series and cointegration equation should be tested before starting the analysis. This situation should be taken into consideration while selecting unit root and cointegration test methods. Otherwise, the analysis may give biased and inconsistent results (Pesaran et al. 2008).

The first studies to test the presence of cross-sectional dependence started with Berusch-Pagan (1980) *CDLM* (Cross-Sectional Dependence Lagrange Multiplier) test. However, this test is biased when group average is zero but individual averages are different from zero. Pesaran et al. (2008) adjusted this deviation by adding the variance and the average into test statistics. Therefore, the test is called adjusted *CDLM* test ($CDLM_{adj}$). Null hypothesis of the test is; "*There is no cross-section dependence*" (Pesaran, et al. 2008). In this study, the presence of cross-section dependence among the countries was tested by using $CDLM_{adj}$ test. The results are presented in Table 1.

Table 1: $CDLM_{adj}$ Test Results

	Test Statistics	**Probability Value**
UR	5.164	0.000
CV	6.705	0.000
Cointegration Equation	10.031	0.000

According to the results in Table 1, null hypothesis was rejected and it was decided that there are cross-section dependence in these countries. In this case, a banking or employment shock that occurs in one of the mentioned countries, affects the others. Therefore, while these countries developing policies for the banking sector and employment; they should also take into consideration the practices of other countries and the developments that affect them. The next

stages of the analysis test methods based on cross-sectional dependence were used.

2.3. Panel Unit Root Test

MADF (Taylor and Sarno 1998), SURADF (Breuer et al. 2002), Bai and Ng (2004) and CADF (Pesaran 2006a) can be listed among panel unit root tests that take into account cross-section dependence. However, these tests don't take into consideration structural breaks in the series. When presence of the structural breaks in series, these methods give biased results (Charemza and Deadman 1997, 119). To eliminate this deficiency, Carrion-i-Silvestre et al. (2005) developed *PANKPSS* (Panel Kwiatkowski, Phillips, Schmidt and Shin) unit root test that takes into account cross-section dependence and up to five structural breaks in the series. Null hypothesis of the test is; "*stationary*". Test statistics were compared with the critical values calculated by bootstrap. *PANKPSS* test was applied and results were presented in Table 2.

Table 2: *PANKPSS* Unit Root Test Results

	UR			***ΔUR***		***CV***			***ΔCV***	
	Test Statistics	Critical Values	Break Dates	Test Statistics	Critical Values	Test Statistics	Critical Values	Break Dates	Test Statistics	Critical Values
Bulgaria	0.243	0.043	1991	0.243*	0.487	0.053	0.042	1993;1996	0.058*	0.791
Croatia	0.052	0.039	1995;1999;2007	0.175*	0.391	0.059	0.040	1993;1998	0.095*	0.613
Cyprus	0.051	0.040	1987;2009	0.073*	0.298	0.643	0.059	1987;1998;2001;2004;2007	0.175*	0.645
France	0.034	0.033	1985;1992;1999	0.273*	0.324	0.067	0.038	1984;1992;2004;2009	0.041*	0.501
Greece	0.038	0.036	1984;1997;2009	0.226*	0.290	0.077	0.041	1986;1992;1998;2009	0.073*	0.972
Hungary	0.073	0.034	1990;1993;2001	0.182*	0.358	0.957	0.040	1989;2000;2007	0.247*	1.155
Ireland	0.041	0.040	1985;1993;2000;2008	0.149*	0.466	0.296	0.037	1982;1994;2003;2009	0.047*	0.551
Italy	0.183	0.041	1989;1996;2006	0.368*	0.385	0.037	0.047	1989;1992;1997;2006;2009	0.145*	0.439
Latvia	0.053	0.051	1995;1998;2008	0.135	0.450	0.073	0.048	1994;2001;2005	0.259*	0.537
Lithuania	0.714	0.036	2001;2008	0.270*	0.286	0.050	0.045	1994;2002;2008	0.061*	0.355
Poland	0.234	0.030	2005	0.305*	0.321	0.082	0.042	1986;1990;1994;2007	0.112*	1.070
Portugal	0.088	0.041	1983;1991;1995;1999;2007	0.123*	0.368	0.045	0.029	1983;1990;1999;2005;2009	0.783*	1.010
Slovak R.	0.066	0.037	1999;2006	0.146*	0.432	0.140	0.044	1993;1996;2002	0.121*	0.335
Spain	0.578	0.041	1985;1990;1994;2001;2007	0.070*	0.472	0.039	0.033	1982;1991;1997;2003;2009	0.075*	0.537
Panel	49.739	24.306	-	31.840*	40.509	95.033	68.647	-	62.719*	116.846

Note: Critical values were obtained by using bootstrap for 1000 replications. *; express stationary at 5% significance level. Δ; express first difference. The model that allows for structural break in level and trend was selected as the test model.

According to the results in Table 2, reveals that the series non-stationary in levels and they became stationary when the first differences are taken. In this case, it was decided that the presence of cointegration relationship between the series can be tested. The test method successfully detected structural break dates in the countries. It points out to 1998 Russian crisis, 1999 transition to common monetary currency (Euro) in EU and 2008 global economic crisis.

2.4. Slope Homogeneity Test

The first studies to determine whether the slope coefficient is homogenous or not in cointegration equation were started with Swamy (1970) and developed by Pesaran and Yamagata (2008). Null hypothesis of the test is: "*slope coefficients are homogenous*". Slope homogeneity test was conducted in the study and obtained results are presented in Table 3.

Table 3: Slope Homogeneity Test

	Test Statistics	**Probability Value**
$\tilde{\Delta}$	0.939	0.174
$\tilde{\Delta}_{adj}$	0.983	0.163

Note: $\tilde{\Delta}$: test statistics of small samples, $\tilde{\Delta}_{adj}$: test statistics of large samples.

According to the results in Table 3, null hypothesis was accepted and it was decided that slope coefficients were homogenous in cointegration equations. In this case, the comments for the general of the panel are valid and reliable.

2.5. Panel Cointegration Test with Multiple Structural Breaks

This test was developed by Basher and Westerlund (2009). It tests the presence of cointegration relationship between series in case of the presence cross-section dependence and structural breaks. Null hypothesis of the test is "*cointegration*". Basher and Westerlund (2009) panel cointegration tests was performed and results are presented in Table 4.

Table 4: Panel Cointegration Test Results

	Test Statistics	**Probability Value**	**Decision**
No breaks in constant & trend	2.749	0.003	No Cointegration
Breaks in constant & trend	10.157	0.585	Cointegration

Note: Critical values were obtained by using bootstrap for 1000 replications. The model that allows for structural break in stationary and trend were selected as the test model.

According to Table 4, when structural breaks are ignored, no cointegration relationship was identified between the series. However, when the structural breaks were taken into account, it was observed that cointegration relationship was identified between the series. Structural break dates obtained from cointegration analysis are presented in Table 5.

Table 5: Structural Break Dates

Country	***Break Dates***	***Country***	***Break Dates***
Bulgaria	1991;2004	Italy	1992;2000
Croatia	1989;2005	Latvia	1995;2006
Cyprus	1987	Lithuania	1989
France	1985;1992;1999	Poland	1988;1999;2006
Greece	2004	Portugal	1988;1998
Hungary	1990;1987;2006	Slovak Rep.	1987;1998;2005
Ireland	1996	Spain	1999

Structural break dates obtained from the cointegration analysis were added to the analysis with dummy variables in estimate cointegration coefficients.

2.6. Estimation to Cointegration Coefficients

Individual cointegration coefficients were estimated by using *CCE* (Common Correlated Effects) method developed by Pesaran (2006b). This method considers cross-section dependence. *CCE* is an estimator that can produce consistent results that provide asymptotic normal distribution when time dimension is smaller or greater than cross-section dimension and can calculate separate long-term balance values for cross-section units (Pesaran 2006b). Cointegration coefficient of the panel was estimated by using *CCMGE* (Common Correlated Mean Group Effects) method developed by Pesaran (2006b). The results are presented in Table 6.

Table 6: Cointegration Coefficients

Country	***CV***	***D_1***	***D_2***	***D_3***
Bulgaria	-0.053[-1.96]**	-0.469[-0.54]	0.796[0.74]	-
Croatia	0.009[0.40]	0.219[0.29]	0.88[3.53]***	-
Cyprus	-0.006[-0.85]	0.95[2.50]	-	-
France	-0.037[-1.60]***	0.429[1.01]	-	-
Greece	0.086[1.53]***	0.092[0.188]	-	-
Hungary	0.03[0.01]	-0.459[-0.34]	1.565[1.41]*	1.575[1.27]
Ireland	-0.188[-3.61]*	-0.282[-0.112]	-	-
Italy	0.065[2.40]*	-2.061[-3.90]***	-0.01[-0.021]	-
Latvia	-0.14[-4.0]*	-3.524[-2.09]**	-1.95[-1.01]	-
Lithuania	-0.019[-0.22]	0.504[0.676]	-	-
Poland	-0.243[-2.38]*	-4.05[-4.69]***	-4.561[-4.44]***	-6.882[-3.81]***
Portugal	-0.011[-0.282]	1.63[1.88]**	1.31[0.97]	-
Slovak R.	-0.198[-3.24]*	-1.37[-2.04]**	-3.034[-2.48]***	0.767[0.49]
Spain	-0.209[-1.47]***	-0.363[-0.35]	-	-
Panel	-0.064[-2.38]*	-0.57[-1.42]*	-0.36[-0.85]	-0.31[-0.64]

Note: *t* statistics were calculated by using Newey-West standard errors. *, **, *** express 1%, 5% and 10% significance level respectively. D_1, D_2, D_3: Dummy variables.

The results in Table 6 show that the increases in credit volume of Bulgaria, France, Ireland, Latvia, Poland, Slovak Republic, Spain and the general of the panel had a reducing effect on unemployment and this effects were statistically significant. However, credit increases in Greece and Italy were found enhancing effects on unemployment.

2.7. The Error Correction Model

At this stage of the analysis, using one period lagged error correction terms (ECT_{t-1}) and differenced series, individual error correction model coefficients were estimated by *CCE* method and error correction model coefficients for the general of the panel were estimated by *CCMGE*. The results are presented in Table 7.

Table 7: Error Correction Model Coefficients

Country	*ΔCV*	ECT_{t-1}	*Country*	*ΔCV*	ECT_{t-1}
Bulgaria	-0.035[-2.05]**	-0.203[-1.82]**	Italy	-0.038[-2.71]*	-0.097[-2.06]**
Croatia	-0.012[-0.57]	-0.265[-2.52]*	Latvia	-0.085[-1.41]***	-0.357[-2.38]*
Cyprus	-0.004[-0.57]	-0.073[-0.84]	Lithuania	0.079[0.84]	-0.205[-1.70]**
France	-0.018[-2.57]*	-0.235[-3.26]*	Poland	0.048[0.69]	-0.306[-1.70]**
Greece	0.023[1.15]	-0.13[-1.10]	Portugal	0.001[0.025]	0.033[0.50]
Hungary	0.028[1.16]	-0.006[-0.14]	Slovak R.	-0.089[-1.89]**	0.074[0.66]
Ireland	0.02[1.05]	0.108[1.16]	Spain	0.12[1.96]**	0.081[1.01]
Panel	-0.010[-0.79]	-0.098[-2.58]*			

Note: *t* statistics were calculated by using Newey-West standard errors. *, **, *** express 1%, 5% and 10% significance level respectively.

According to the results in Table 7, error correction term coefficients were negative and statistically significant in Bulgaria, Croatia, France, Italy, Latvia, Lithuania, Poland and panel. In other words, short run deviations converge to long run balance level. Error correction mechanism of the model operates. This indicates that cointegration coefficients estimation results are reliable.

3. Conclusion and Evaluation

In this study, the relationship between unemployment ratio and the credit volume was analyzed for fourteen EU

countries by using 1980-2012 period data by means of panel cointegration method that takes into consideration cross-section dependence and multiple structural breaks.

Presence of cross-section dependence among the countries was analyzed by using $CDLM_{adj}$. It was concluded that cross-section dependence was present among these countries. Therefore, it was concluded that coming banking or employment shock in these countries, affects the other countries. That's why; it is believed that while countries making banking and employment policies, the developments in related countries should be taken into account in these countries. Stationary of the series was tested by *PANKPSS* method and it was observed that the series were non-stationary and that they became stationary when their first differences were taken. In this case, it was concluded that the presence of cointegration relationship between the series can be analyzed. Slope homogeneity test was used to analyze the homogeneity of cointegration coefficients. It was concluded that the coefficients were homogenous, in other words, cointegration interpretations for the general of the panel were reliable.

The existence of the cointegration relationship between the series has been tested by Basher and Westerlund (2009) method and it was determined cointegration relationship between the series. Cointegration coefficients were estimated by *CCE* and *CCMGE* methods and it was observed that that the increases in credit volume in Bulgaria, France, Ireland, Latvia, Poland, Slovak Republic, Spain and the general of the panel had a reducing effect on unemployment and that this effect was statistically significant. These results compatible with the studies of Ordine and Rose (2008); Pagano and Pica (2012); Shabbir et al. (2012) and Feldman (2012). On the other hand, credit increases in Greece and Italy were found enhancing effects on unemployment. This might be caused by the fact that increasing credits in these countries were used for import goods consumption. Error correction model were estimated using *CCE*

and *CCMGE* methods. It was observed that error correction term coefficients were negative and statistically significant in Bulgaria, Croatia, France, Italy, Latvia, Lithuania, Poland and the panel. In other words, the deviances that occur in the short-term are eliminated between the series and series converge to the long-term balance value. Error correction mechanism of the model operates efficiently. This also indicates that long-term analysis results are reliable.

In conclusion, it was observed that a 10% increase in credit volume decreased unemployment ratio by 0.64% in the general of the panel. This value is lower than expected and indicates that credit volumes in the mentioned countries have an insignificant effect on employment. One of the reasons might be liquidity trap, because the real interest rate in these countries decreased to the lowest possible levels. It becomes difficult to stimulate investments and total demand, revive the business life and reach full employment level by increasing the money supply in such economies which are in the liquidity trap. It might be considered as another reason that the labor-intensive production in the EU has been shifted to the Far East.

At this point, encouraging using the credits in investments and consumption of domestic goods; restricting the import of final consumer goods and increasing public expenditures can be advantageous for the proper operation of credit channel and creating employment. Investment and employment loans can be provided in more convenient conditions through selective practices of banks led by the EU Central Bank. Furthermore, non-wage payments of employee can be reduced; a part of social security premium payments of the firms that maintain the existing employment and create new employment can be paid by the unemployment fund; premium and tax reductions can be implemented and loans at more convenient conditions can be provided alike the policies implemented in Turkey following 2008 global economic crisis.

BIBLIOGRAPHY:

Acemoglu, D. 2001. "Credit Market Imperfections and Persistent Unemployment." *European Economic Review* 45(4): 665-679.

Armendariz, B. A. and J. Morduch. 2005. *The Economics of Microfinance*. Massachusetts Institute of Technology, Massachusetts: The MIT Press.

Bai, Jushan and S. Ng. 2004. "A PANIC Attack on Unit Roots and Cointegration." *Econometrica* 72(4): 1127-1177.

Basher, S. A. and J. Westerlund. 2009. "Panel Cointegration and the Monetary Exchange Rate Model." *Economic Modelling* 26: 506-513.

Benmelech, E., N.K. Bergman, and A. Seru. 2011. "Finance and Unemployment." NBER Working Paper, No. 17144.

Bernanke, B. and S.A. Blinder. 1992. "The Federal Funds Rate and the Channels of Monetary Transmission." *The American Economic Review* 82(4): 901-921.

Breuer, J.B., R. Mcnown, and M. Wallace. 2002. "Series-Specific Unit Root Test with Panel Data." *Oxford Bulletin of Economics and Statistics* 64(5): 527-546.

Breusch, T.S and A.R. Pagan. 1980. "The Lagrange Multiplier Test and Its Applications to Model Specification Tests in Econometrics." *Review of Economic Studies* 47: 239-53.

Carrion-i-Silvestre, J.L., T.D. Barrio-Castro, and E. Lopez-Bazo. 2005. "Breaking the Panels: An Application to the GDP Per Capita." *Econometrics Journal* 8:159-175.

Charemza, W.W. and D.F. Deadman. 1997. *New Directions in Econometric Practice: General to Specific Modelling, Cointegration and Vector Autoregression*. Second Edition Chelthenham: Edward Elgar Publishing.

Castillo, P.J. 2009. "Unemployment Threat of the Financial Crisis." *Asia-Pacific Social Science Review* 9(1): 41-46.

Feldman, H. 2012. "Banking Deregulation around the World, 1970s to 2000s: The Impact on Unemployment." *International Review of Economics & Finance* 24: 26-42.

Gatti, D., C. Rault, and A.G. Vaubourg. 2012. "Unemployment and Finance: How do Financial and Labour Market Factors Interact?" *Oxford Economic Papers* 64(3): 464-489.

Han, C.K. 2009. "Unemployment, Financial Hardship, and Savings in Individual Development Accounts." *Journal of Poverty* 13(1): 74-95.

IMF. 2013. World Economic Outlook Database, April, http://www.imf.org/external/pubs/ft/weo/2013/01/weodata/weoselser.aspx.

Lakstutiene, A. R. Krusinskas, and J. Platenkoviene. 2011. "Economic Cycle and Credit Volume Interaction: Case of Lithuania." *Inzinerine Ekonomika-Engineering Economics* 22(5): 468-476.

Lipsey, R.G., D.D. Purvis, P.N. Courant, and P.O. Steiner. 1994. *Economics*. 9th edition. Longman Higher Education.

Mishkin, F.S. 1996. "The Channels of Monetary Transmission: Lessons for Monetary Policy." *Banque de France Bulletin Digest* 27: 33-44.

Ordine, P. and G. Rose. 2008. "Local Banks Efficiency and Employment." *Labour* 22(3): 469-493.

Pagano, M. and G. Pica. 2012. "Finance and Employment." *Economic Policy* 27(69): 5-55.

Pesaran, M.H. 2004. "General Diagnostic Tests for Cross Section Dependence in Panels." *Cambridge Working Papers in Economics* No. 435.

Pesaran, M.H. 2006a. "A Simple Panel Unit Root Test in the Presence of Crosssection Dependecy." *Cambridge Working Papers in Economics* No. 0346.

Pesaran, M.H. 2006b. "Estimation and Inference in Large Heterogeneous Panels with a Multifactor Error Structure." *Econometrica* 74(4): 967-1012.

Pesaran, M.H. and T. Yamagata. 2008. "Testing Slope Homogeneity in Large Panels." *Journal of Econometrics* 142(1): 50-93.

Pesaran, M.H., A. Ullah, and T. Yamagata. 2008. "A Bias-Adjusted LM Test of Error Cross-Section Independence." *Econometrics Journal* 11: 105-127.

Pojatina, K. 2008. "Credit Risk, Credit and Economic Cycles in Croatian Banking." *Economic Research* 21(4): 19-33.

Robinson, M.S. 2001. *The Micro Finance Revolution* (Sustainable Finance for the Poor). The World Bank, Washington D.C.

Saint-Paul, G. 2007. "Alternative Strategies for Fighting Unemployment: Lessons from the European Experience." *IDEI Working Papers* No. 446.

Shabbir, G., S. Anwar, Z. Hussain, and M. Imran. 2012. "Contribution of Financial Sector Development in Reducing Unemployment in Pakistan." *International Journal of Economics and Finance* 4(1): 260-268.

Swamy, P.A.V.B. 1970. "Efficient Inference in a Random Coefficient Regression Model." *Econometrica* 38(2): 311-323.

Taylor, M. and L. Sarno. 1998. "The Behavior of Real Exchange Rates during the Post-Bretton Woods Period." *Journal of International Economics* 46: 281-312.

Wasmer, E. and P. Weil. 2004. "The Macroeconomics of Labor and Credit Market Imperfections." *American Economic Review* 94(4): 944-963.

World Bank. 2013. *Unemployment*, total (% of total labor force) http://data.worldbank.org/indicator/NE.GDI. TOTL.CD.