

Latvian Unemployment is Cyclical

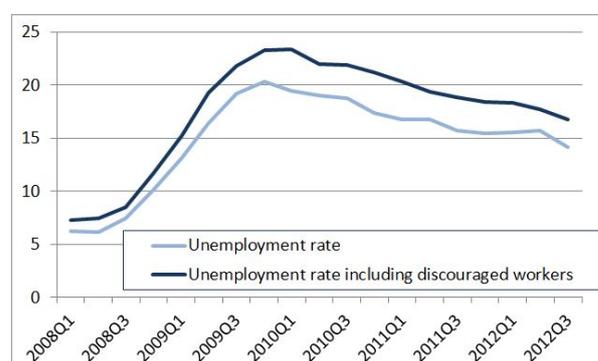
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In terms of output decline and increase in unemployment, the economic recession in Latvia that started during the 2008-09 financial crisis was one of the most severe in the world. Using modern methods of statistical analysis, we demonstrate that the changes in unemployment should be attributed primarily to cyclical, rather than structural factors. This answer brings important implications for anti-crisis policy in Latvia and elsewhere in the world: it suggests that the surge in unemployment was largely a consequence of Latvia's austerity policy, and that today, broader economic measures to support further economic recovery can be effective.

During the 2008-2009 recession Latvia experienced the EU's largest and fastest increase in unemployment. This is illustrated in Figure 1 where it can be seen that the unemployment rate rose by approximately 14 percentage points from a low of 6.2% in early 2008 to 20.4% at the end of 2009. However, labour market recovery has not been equally rapid, with unemployment in 2011 and the first half of 2012 settling at around 16%. This corresponds to a decline of less than 5 percentage points from the peak. The most recent quarter has seen an improvement with the unemployment rate falling to 13.5%. Partly, the decline can be attributed to seasonal factors (seasonally adjusted unemployment rate declined by less; from 15.7% to 14.2%). However, if discouraged workers are counted, the reduction in unemployment was smaller and the rate of unemployment still stood at 16.8% in the 3rd quarter.

This observed persistence in unemployment is seen by many as a signal of the structural nature of the shocks that hit the economy during the recession and of the further intensification of structural problems.

Figure 1. Unemployment Rate (Age Group 15-74), Seasonally Adjusted, (%)¹



Note: Discouraged workers are those economically inactive who mentioned loss of hope to find a job as the main reason for not looking for a job.

Source: Central Statistical Bureau of Latvia, authors' calculations

¹ Figure 1 uses data unadjusted for the results of the census carried out in Latvia in the first half of 2011 which showed that the population and the workforce was less than previously thought. This has implications for the calculation of all labour market statistics but the official statistics not yet been revised for years before 2011. Accordingly, for consistency over time, we use unadjusted data.

For example, Krasnopjorovs (2012)² argues that there is a structural mismatch in the Latvian labour market, which mainly takes the form of a skills mismatch and concludes that the “*employment rate now is similar to that observed in "normal times" of 2002-2004, [which] suggests a rather small [if any] negative output gap and a large share of structural unemployment in total unemployment*”. Likewise, the Ministry of Finance of Latvia (2012)³ argues that in the medium term, supply and demand mismatches will intensify. Thus, raising the risks of structural unemployment and, while not explicitly reporting their NAIRU estimates, the reported estimate for the output gap in 2012 is just -0.2% of potential GDP, but for 2013, a positive output gap of 0.7% is forecast.

The European Central Bank (2012)⁴, when discussing inflation prospects in Latvia, identifies the situation in the labour market as a potential source of risk, as “*labour shortages in certain sectors have appeared, suggesting that unemployment is likely to be close to its natural rate*”. The European Commission’s (2012)⁵ estimate for the NAIRU in 2012 is 14.6%, which is very close to the actual unemployment rate. The IMF (2012)⁶ is the least categorical in characterising the nature of Latvian unemployment, arguing that “*lack of skilled labor could become a constraint to growth and put pressure on wages unless the long-term unemployed re-enter the labor market*”, at the same time forecasting that “[a] *negative output gap and high unemployment*

² Krasnopjorovs (2012), “[What is missing in Krugman's structural unemployment story?](#)”, blog on Bank of Latvia website, June 2012

³ Ministry of Finance of Latvia (2012), “[Convergence programme of the Republic of Latvia 2012-2015](#)”, April 2012

⁴ European Central Bank (2012), “[Convergence report](#)”, May 2012

⁵ European Commission (2012), Autumn 2012 Forecast Exercise, [Estimates of output gap and of potential output and their determinants](#), November 2012

⁶ IMF (2012), “[Republic of Latvia: First Post-Program Monitoring Discussions](#),” July 2012

should keep core inflation (...) low, and contribute to a gradual decline in headline inflation”.

Other commentators, e.g. Krugman⁷ have argued that Latvian unemployment is largely explainable by cyclical factors.

Which explanation is correct is important both for current policy purposes and for the interpretation of past policy. Thus, “*if cyclical factors predominate, then policies that support a broader economic recovery should be effective in addressing long-term unemployment as well; if the causes are structural, then other policy tools will be needed*”.⁸ On the other hand, “*higher structural unemployment alters the role of short-run stabilization policies, including monetary policy, by increasing the possibility that expansionary policies will trigger inflation at higher rates of unemployment than otherwise*”.⁹

In what follows, we evaluate the extent to which the recent evolution of Latvian unemployment can be interpreted as structural and provide some policy implications. We use three alternative approaches and all three point in the same direction: overwhelmingly both the increase in unemployment and its recovery are explainable by cyclical factors.

Decomposition of the Unemployment Rate into Structural and Cyclical Components

⁷ Krugman, [The Conscience of a Liberal](#), blog on New York Times

⁸ Bernanke (2012), “Recent Developments in the Labor Market,” remarks to the National Association for Business Economics, March 26, 2012

⁹ Daly, Hobijn, and Valletta (2011), “The Recent Evolution of the Natural Rate of Unemployment,” IZA Discussion Paper No. 5832, July 2011

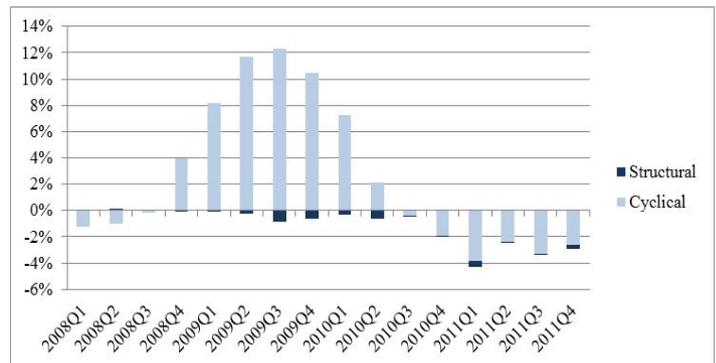
Our first approach is to directly decompose unemployment into structural and cyclical components. This is based on the following intuitive reasoning: when structural change occurs, unemployment is a result of changes in the composition of the labour market, i.e. the skill requirements of the jobs available today no longer match the skillset of the workers who are searching for jobs. On the other hand, when cyclical factors dominate, we would expect similar increases in unemployment across all sectors and locations. Using a formalised version of this approach, we conclude that changes in Latvian unemployment during the recession can be explained by changes in the unemployment rates in particular sectors and occupations, while the shares of the sectors and occupations in labour supply have been practically unchanged.

Following Lazear and Spletzer (2012)¹⁰, we decompose the changes in the unemployment rate into structural and cyclical components, where the first component comes from changes in unemployment rates in a particular group assuming an unchanged structure, while the second component represents compositional changes in the structure of labour supply.

In order to implement this analysis, we use the most disaggregated categories of the sector of previous employment and occupations, which are obtainable from quarterly micro level LFS data. This covers 10 sectors of production and 9 occupations. We use a broad definition of unemployment and include discouraged workers to account for the nominal reduction in unemployment, which occurs just because people stop looking for a job. At the time of writing, data is only available for 2007-2011; hence, our analysis does not cover 2012.

Figures 2 and 3 show the decomposition of unemployment rate changes by sectors of production and by occupations.

Figure 2. Decomposition of Year-on-Year Changes in Unemployment Rate by Sectors of Production, Including Discouraged Workers, (% points)



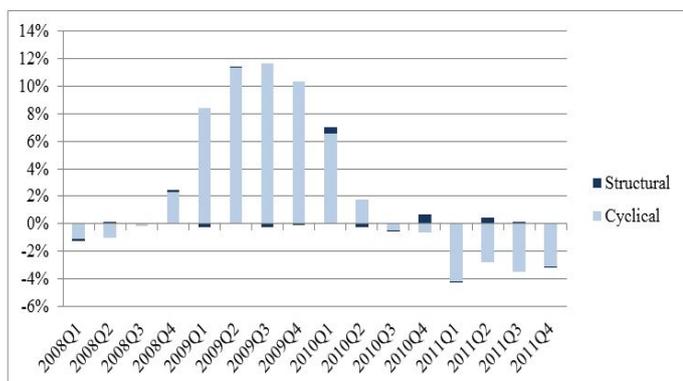
Note: Includes only those unemployed who stopped working less than 8 years ago, for those who stopped working more than 8 years ago data on the previous sector of employment is not available; includes only those who indicated the sector of previous employment.

Source: Central Statistical Bureau of Latvia, authors' calculations

The sectoral decomposition suggests that the increase in unemployment in 2009-2010 can be fully attributed to cyclical factors – the structural component was small and even negative. The negative structural component is explained mainly by a reduction in the share of industry and construction in labour supply, which were sectors characterised by relatively high rates of unemployment.

¹⁰ Lazear and Spletzer (2012), "The United States Labor Market: Status Quo or a New Normal?," NBER Working Paper Series, No. 18386, September 2012

Figure 3. Decomposition of Year-on-Year Changes in Unemployment Rate by Occupations, Including Discouraged Workers, (% points)



Note: Includes only those unemployed who stopped working less than 8 years ago, for those who stopped working more than 8 years ago data on the previous occupation is not available; includes only those who indicated previous occupation.

Source: Central Statistical Bureau of Latvia, authors' calculations

The occupational decomposition also suggests that changes in the rate of unemployment have been largely cyclical. The positive structural component in 2010Q1 can be explained by an increase in the share of civil servants, service workers, as well as shop and market sales workers. The positive structural component in 2010Q4 and 2011Q2 is a result of an increased share of craft and related trades workers, and elementary occupations.

In sum, the shares of both sectors and occupations in the economy have remained largely unchanged with unemployment changes explained by sectoral or occupational changes in unemployment rates.

Evaluating mismatch

A second approach is to directly estimate labour-market mismatch. Structural unemployment is usually defined as resulting from a mismatch between the labour demand and the skillset and locations of those looking for jobs. “[M]ismatch is defined as a situation where industries differ in their ratio of

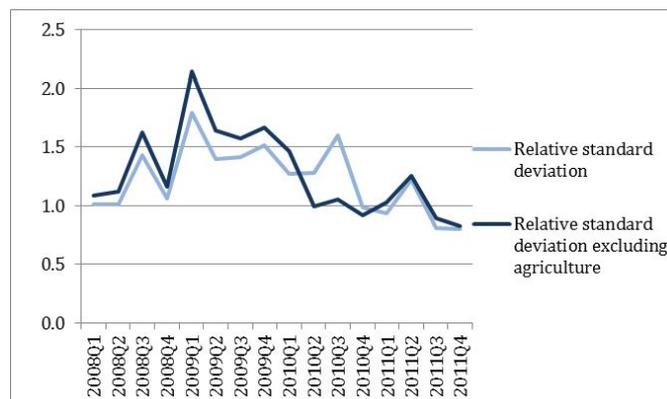
unemployed to vacancies”.¹¹ Using this approach our estimates show no significant mismatch between available vacancies the skills of workers.

To assess changes in the matching during the crisis, we calculate relative standard deviation of the number of unemployed per vacancy across sectors:

$$RSD = \frac{\sqrt{\frac{\sum_i (x_i - \bar{x})^2}{n-1}}}{\bar{x}},$$

where x_i is number of unemployed per vacancy in sector¹² i (including discouraged workers) and \bar{x} is average number of unemployed per vacancy across sectors.

Figure 4. Relative Standard Deviation of Unemployed per Vacancy across Sectors



Source: Central Statistical Bureau of Latvia, authors' calculations

¹¹ Lazear and Spletzer (2012), “The United States Labor Market: Status Quo or a New Normal?,” NBER Working Paper Series, No. 18386, September 2012

¹² Here we use data on vacancies from the Central Statistical Bureau (data from enterprise surveys), since this data is more representative of the whole economy than the data on registered vacancies from the State Employment Agency. The latter is likely to be biased towards vacancies for low-qualified workers, as employers opt for different search methods for higher level positions. This is supported by the fact that, e.g. in 2012 vacancies for craft and related trades workers, plant and machine operators, and assemblers, as well as elementary occupations accounted for 50-60% of all vacancies registered with the State Employment Agency, while in the Statistical Bureau data these vacancies accounted for only about 20% of all vacancies.

Figure 4 presents the results of the relative standard deviation estimation. RSD increased in the beginning of the recession, but it has been declining since early 2009 indicating no increase in the degree of mismatch.

Estimating the Beveridge Curve

The third method uses the search and matching approach as developed by Pissarides (2000)¹³ where the emergence of structural unemployment is signalled by deterioration in the efficiency of labour-market matching. Again, the conclusion is that except during the boom, when matching appears to have improved, Latvian unemployment cannot be explained by changes in the efficiency of matching.

We follow the Beveridge curve approach proposed by Barlevy (2011)¹⁴ who follows Petrongolo and Pissarides (2001)¹⁵ in assuming that matches in the labour market can be described by a Cobb-Douglas function, in which the number of matches depends on the unemployment rate, the vacancy rate, the productivity of the matching process, and elasticity of the number of matches with respect to the unemployment rate. The flow into unemployment is defined by the separation rate into unemployment; while the flow out of unemployment is given by the matching function. Equating the two flows yields the Beveridge curve which, given a constant separation rate, defines a negative relationship between vacancies and the unemployment rate.

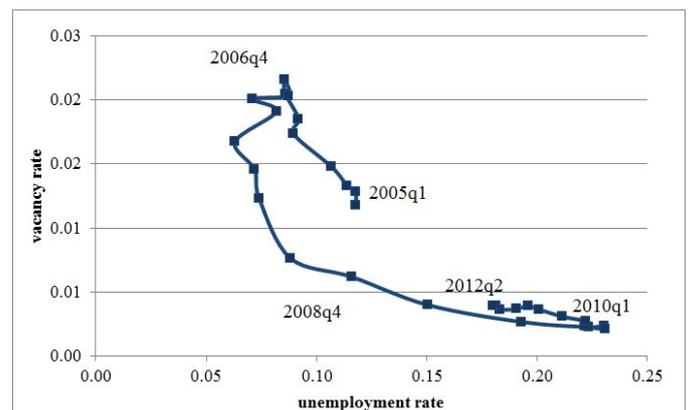
¹³ Pissarides (2000), *Equilibrium Unemployment Theory* (Second Ed.). Cambridge, MA: MIT Press

¹⁴ Barlevy (2011), "Evaluating the Role of Labor Market Mismatch in Rising Unemployment," *Economic Perspectives*, 35(3), July 28, 2011

¹⁵ Petrongolo and Pissarides (2001), "Looking into the Black Box: A Survey of the Matching Function," *Journal of Economic Literature*, 39(2), June 2001, pp. 390–431

Figure 5 plots the Beveridge curve for Latvia over 2005 – 2012Q2. We first observe that the Beveridge curve appears to have shifted downwards in 2007, pointing to an improvement in matching (an increase in the productivity parameter) as the economy approached the top of the boom. This is consistent with the idea that employers facing labour shortage became less "picky" in their hiring decisions. Starting from 2010, as the unemployment rate gradually declined there appears to have been a movement back along the Beveridge curve though perhaps with a minor outward shift.

Figure 5. Unemployment Rate (incl. Discouraged Workers) vs. Vacancy Rate in 2005-2012q2, Seasonally Adjusted



Source: Central Statistical Bureau of Latvia, authors' calculations

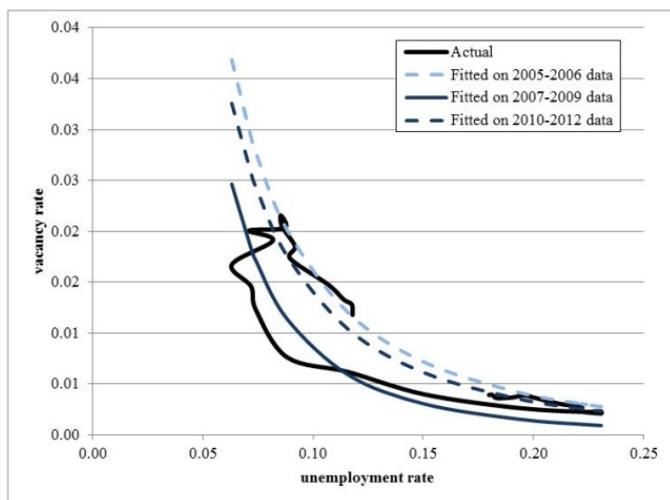
Estimating the parameters of the Beveridge curve permits assessment of changes in matching. To estimate A , we divide the sample into three periods and fit the Beveridge curve for these three periods: 2005-2006 (beginning of the boom), 2007-2009 (the peak and the recession) and 2010-2012 (the period of gradual reduction in unemployment). Apart from data on unemployment and the vacancies, we need to know the separation rate. Barlevy (2011)¹⁶ argues that the relevant

¹⁶ Barlevy (2011), "Evaluating the Role of Labor Market Mismatch in Rising Unemployment," *Economic Perspectives*, 35(3), July 28, 2011

separation rate is likely to be fairly stable over the cycle – he assumes a constant separation rate of 0.03 for the U.S. (one can think of this separation rate as the flow of people from employment to unemployment in “normal” times). In the absence of concrete evidence to the contrary, we also assume a constant separation rate. However, this assumption is not crucial for our analysis, since we are interested in the *change* in A and not the *level* of A .

Figure 6 shows the fitted Beveridge curves, as well as the seasonally adjusted data over the period ranging from 2005 up to the second quarter of 2012.

Figure 6: Fitted Beveridge Curves and Actual Unemployment Rate (incl. Discouraged Workers) vs. Vacancy Rate in 2005-2012q2, Seasonally Adjusted



Source: Central Statistical Bureau of Latvia, authors' calculations

Our estimates of the parameters are presented in Table 1. The results show that A declined in 2010-2012, suggesting a slight deterioration in matching, yet A estimated on 2010-2012 data is slightly higher than A estimated on 2005-2006 data, the period which probably comes closest to the definition of “normal” times in our sample.

Table 1. Estimated Parameters of the Beveridge Curve

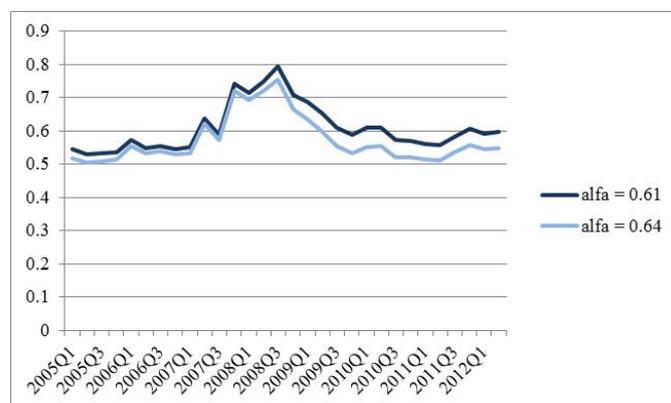
	2005-2006 data	2007-2009 data	2010-2012 data
A	0.55	0.61	0.57
α	0.61	0.67	0.62

Source: Authors' calculations

Using estimated α and the formula for the steady-state vacancy rate, we are able to calculate implied changes in A over the whole period under consideration. To do this, we employ two alternative estimates of α : (1) $\alpha = 0.61$, the estimate on 2005-2006 data, which can be viewed as α estimate for “normal” times and (2) $\alpha = 0.64$, average of α estimates for the three periods.

Figure 7 illustrates the results of the estimation. These suggest that A declined from its peak in the beginning of 2008, in turn suggesting that matching has deteriorated as compared to the boom years. However, A started to grow in the end of 2011 and is currently above its level in 2005-2006. More importantly, our results suggest that there was no notable deterioration in matching since mid-2009, i.e. neither the increase in unemployment in the recession nor the subsequent recovery have been accompanied by significant intensification of labour market mismatches.

Figure 7: Implied A estimate



Source: Authors' calculations

Finally, our estimates of the Latvian Beveridge curve imply that changes in matching efficiency have been practically absent (except in the boom). Hence, changes in unemployment can largely be explained by cyclical factors.

Conclusion

Our analysis indicates no significant change in structural unemployment in Latvia during the 2008-2009 recession and afterwards. First, decomposition of the unemployment rate into structural and cyclical components illustrates the dominant role of the cyclical component. Second, direct estimation of mismatches also shows no evidence to support a structural explanation of the change in the Latvian unemployment rate. Finally, our estimates of the Beveridge curve during the period suggest that the efficiency of matching did not deteriorate during the recession and afterwards.

Accordingly, we conclude that in the course of the crisis not only did Latvia fall well below its long-term output trend, but Latvia is still operating below potential. This has implications for the assessment of Latvia's internal devaluation policy. To put it in Blanchard's (2012)¹⁷ words: *"Is it a success? The economic and social cost of adjustment has been substantial. Output further contracted by 16% in 2009, and is still 15% below its 2007 peak. Unemployment increased to more than 20% and still stands at 16% today, far higher than any reasonable estimate of the natural rate. Was there another, less costly, way of adjusting, through floating, and a slower fiscal consolidation? The truth is we shall never know"*. The evidence presented here does not directly help to evaluate alternatives – still, it confirms that the chosen course was extremely costly and that today

broader economic measures to support further recovery can be effective.

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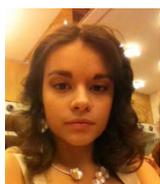


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