

Collegio Carlo Alberto



Financial Shocks and the Labour Markets: Should
Economic Policy Save Jobs?

Tito Boeri

Pietro Garibaldi

No. 194

December 2010

Carlo Alberto Notebooks

www.carloalberto.org/working_papers

© 2010 by Tito Boeri and Pietro Garibaldi. Any opinions expressed here are those of the authors and not those of the Collegio Carlo Alberto.

FINANCIAL SHOCKS AND THE LABOUR MARKETS: SHOULD ECONOMIC POLICY SAVE JOBS?

Tito Boeri and Pietro Garibaldi¹

December 2010

Abstract

The recent financial crisis, alongside a dramatic rise in unemployment on both sides of the Atlantic, suggests that financial shocks do translate into the labour markets. In this paper we first present and review the basic facts on unemployment dynamics, financial shocks and Okun's elasticity over the business cycle. Second, we highlight the key mechanisms linking financial shocks to the labour market, drawing on the most recent theoretical and empirical research in the area. Third, and foremost, we discuss whether intervention in the labour market, in the aftermath of adverse financial shocks, should be conducted directly in the labour market (*saving jobs*) or indirectly through intervention in the financial markets (*savings financial institutions*). We argue that while there is some evidence that saving jobs can be an effective policy, direct intervention in the labour market should be dealt with particular caution, as the risk of moral hazard and discretionary industrial policy should not be underestimated.

¹ Respectively, Bocconi University-Igier and Collegio Carlo Alberto, University of Torino. We are grateful to Philippe Aghion Stijn Claessens, William Cline, Uri Dadush, and to seminar participants at the World Bank Conference on "Ascent After Decline: Regrowing Growth". Usual disclaimer applies.

1. Introduction

In the aftermath of the financial crisis, unemployment in the U.S almost doubled from peak to trough, within a few quarters. Its short-run dynamics displayed remarkably larger Okun's elasticity than in previous recessions. US unemployment is now declining at a very low pace, denoting more persistence than in previous recoveries, including the jobless recoveries of the last two decades.

Unemployment in Europe has been consistently lower than in the US throughout the Great Recession, but the aggregate EU figures conceal large cross-country heterogeneity in the responsiveness of unemployment to output changes.

[INSERT FIGURE 1 HERE: UNEMPLOYMENT IN US AND EUROPE]

Some of these differences in response across the two sides of the Atlantic are arguably linked to the different labour market institutions. For instance, short-time work schemes have been playing an important role in containing job losses in Germany (where unemployment actually decreased during the recession). Other usual suspects for these Transatlantic differences in unemployment dynamics seem to have much a lower explanatory power this time. According to an institutional approach and economic analysis fashionable in the mid nineties, one could argue that strict employment protection legislation (EPL) in Europe is the smoking gun. High costs of dismissals, according to this perspective, are associated with lower labour market volatility. However, the countries with the strictest EPL, like Spain, this time experienced the largest increase in unemployment. The fact of the matter is that European labour markets are today much more flexible on average, and are characterized by a dual structure. Such a dual structure, with a flexible temporary fringe along side a rigid stock of regular contracts, increased labour market response to adverse business conditions precisely in those countries displaying the strictest employment protection provisions for regular contracts.

One should therefore go beyond labour market institutions to understand these asymmetric and largely unprecedented developments. A key factor behind the response of the labour market to the current recession is likely to be in the nature of the shocks that led to the Great Recession. In

particular, one should look at the financial markets where the crisis originated and became global in the aftermath of the Lehman bankruptcy in the Fall of 2008. Financial markets and the banking sector experienced a credit crunch well into the 2009. Such a credit crunch has been documented by several authors and took place in both Europe and the U.S. This global credit crunch is likely to have been playing a key role in labour market adjustment during the downturn and in the recovery.

With respect to the financial sector, one of the key differences between the two sides of the Atlantic is the degree of financial deepening. A simple empirical measure to account for this difference is the stock market capitalization over GDP. While the size of the financial shocks, measured in terms of losses of stock market capitalization, appear very similar in terms of timing and size, what is striking is the fact that the level of financial deepening is indeed very different (Figure 2). Whereas in the US stock market capitalization amounts to some 100 percent of GDP, the same ratio in Europe is about 75 percent.

[INSERT FIGURE 2 HERE] STOCK MARKET CAPITALIZATION

Boeri Garibaldi and Moen (2010; BGM hereafter) study theoretically and empirically the basic links and transmission mechanisms between the shocks to the financial markets and the labour market. The questions of this line of research are the following. How does a credit crunch translate into job destruction and larger unemployment? Is financial deepening, larger in the U.S. than in Europe, responsible for the acceleration and increase of the unemployment to output response in the U.S. to the financial shocks of 2008 and 2009? How does this explanation cope with the sluggish dynamics of US unemployment during the recovery? And how about differences in Okun's elasticities within the EU?

The goal of this paper is threefold. First, it reviews the basic facts on unemployment dynamics, financial shocks and Okun's elasticity over the business cycle. Second, it highlights the key mechanisms linking financial markets and labour markets, drawing of the recent research by BGM (2010). Third, and foremost, it draws attention to the policy implications of this line of research. In particular we discuss whether intervention in the labour market, in the aftermath of adverse financial shocks, should be dealt with direct intervention (saving jobs) or indirectly

through intervention in the financial markets (savings financial institutions). In other words, we discuss the trade off between savings jobs and savings financial institutions.

The paper proceeds as follows. The second section presents key figures on employment and unemployment dynamics throughout the recession. The third section reviews the literature on financial-labour market interactions drawing on BGM. The fourth section discusses the policy implications of these results, focusing on whether intervening directly in the labour market is an alternative policy to intervene in the financial market, the key action taken by policy-makers around the globe. Finally, Section five summarizes and concludes.

2. From the Great Moderation to the Great Volatility

The Great Recession involved in the G7 a cumulative decline of GDP of 3.7 % and employment (peak to trough) reductions of 2.1 %. Thus, the apparent employment to output elasticity has been of the order of .6, significantly larger than in previous recessions. Even conditioning on output dynamics, which involved sizeable falls almost everywhere, the global employment response has been stronger than in previous recessions.

Unemployment has also been rising more than in previous contractionary episodes also when account is made of the magnitude of output falls. Figure [3] displays Okun's law unemployment to output elasticities (in modules) estimated by considering the G7 as a unique large economy and using a 16 quarters moving window (rolling regression procedure) in order to allow for time-varying unemployment to output elasticities. In other words, the 2010Q1 β coefficient is estimated over the 2007Q1-2010Q1 window from the regression

$$\Delta u_t = c - \beta_t \Delta y_t \% \#$$

where y denotes GDP and u is the unemployment rate, both measured at quarterly frequencies.

[INSERT FIGURE 3 HERE]: BETA COEFFICIENTS

The first thing to notice is that there is substantial time-series variation in beta coefficients, which suggests that estimates imposing the same elasticity miss a lot of action.

As far as the responsiveness of unemployment to output during the Great Recession is concerned, the message is clear: after the decades of the Great Moderation, we had years of Great Volatility. During the Great Recession, unemployment has been even more responsive to output changes than under in the two oil shocks of the 1970s and in previous contractionary episodes (denoted by shaded areas in Figure 3). The other side of the coin of this renewed and even stronger volatility is that a key challenge of the recovery from the Great Recession will be the absorption of high levels of unemployment, notably long-term unemployment. A new Jobs Study is needed, this time looking not only at Europe, but also the US.

Needless to say, the above diagram conceals substantial cross-country variation in the elasticity of unemployment to output changes. Such cross-country differences are related to the presence of different institutional configurations. Economic theory as well as empirical work (e.g., Chapter 4 of the Spring 2010 World Economic Outlook) suggest that labour market institutions, such as employment protection legislation, unemployment benefits and short-time work schemes affect the unemployment response to output changes. There is also evidence that some of the above institutions have been reformed over time, increasing the flexibility of labour markets, hence unemployment and employment volatility.

In conjunction with these institutional changes, the specific nature of the 2008-9 Great Recession could have affected the labour market response. Assessing the nature of these financial-labour interactions and their relevance in unemployment dynamics is crucial to identify policies increasing the job content of the current recovery.

Most of the interactions that will be discussed later on operate on the labour demand side. Thus, it is useful to begin by looking at the employment-to-output elasticity during the Great Recession and compare it with previous financial crises involving house price busts. This is done in Figure

[4] which displays rolling regression estimates of the employment to output elasticity for advanced countries having experienced the larger number of financial crises and housing busts.

[INSERT FIGURE 4 HERE]: EMPLOYMENT TO OUTPUT ELASTICITY

Shaded areas represent financial crises (panels on the left-hand-side) or housing bust episodes (right-hand-side) according to the taxonomy developed by Reinhart and Rogoff (2009). The visual impression provided by the figure is that financial crises do indeed involve greater employment response to output changes. This is confirmed by the average β coefficients displayed in Table [1] for financial crises and other recessions (measured from peak-to-peak).

[INSERT TABLE 1 HERE]

Why financial crises are associated to a greater labour market volatility than other recessions? What are the key channels of interaction between financial and labour markets? Which institutions play a more important role in this respect? Unfortunately there is a paucity of research on labour-finance interactions. The main results of the theoretical literature addressing these interactions are reviewed below.

3. Finance-Labour Interactions

Most of the theoretical work on finance-labour interactions has been dealing with the effects of financial market imperfections on employment adjustment to productivity shocks. There is a range of predictions in this respect.

Some studies (Rendon, 2000; Belke and Fehn, 2002) view a relatively easy access by firms to financial markets as a substitute to labour market flexibility: firms can borrow to afford the costs associated with labour hoarding during downturns. In other words, well-developed financial markets make labour market rigidity sustainable for firms. An implication of this view is that well developed financial markets coupled with rather strict employment protection legislations (EPL) could substantially reduce the cyclical volatility of employment, over and beyond the effect of EPL by itself.

The polar view is that labour market deregulation goes hand-in-hand with financial market liberalisation (Bertola and Rogerson, 1997 ; Wasmer and Weil, 2004; Koskela and Stenbacka, 2002). Greater access to financial markets by both firms and workers makes it possible to partly self-insure against labour market risk reducing the demand for employment protection. From a structural standpoint, there should be a political economic equilibrium according to this literature in which well working financial markets are associated with less strict employment protection legislations. Countries featuring these flexible equilibria should display more volatility of employment over the cycle than countries characterised by rigid labour market institutions and highly imperfect financial markets. Thus, the empirical prediction goes the other way round: deeper financial markets should be associated to more, rather than less, employment responsiveness to output changes.

Other papers have been looking at interactions between financial variables and collective bargaining institutions. In particular, Gatti, Raut and Vaubourg (2010) as well as Monacelli et al. (2010) consider the role played by firm leverage decisions in coping with collective bargaining. A general implication of these models is that leverage is a way to contain labour costs or at least contain the effects that wage increases have on hiring policies. These models imply that labour-finance interactions could amplify the impact of productivity shocks over the business cycle.

These predictions are not necessarily informative for our purposes as these studies typically consider the comparative statics of steady state equilibria and do not analyse the effects of financial crises, reducing access to credits to firms, starting from different initial conditions as to the leverage of firms.

Financial crises can be framed in this class of models as sudden increases in financial frictions reducing significantly the scale of financial markets. If these frictions do not increase proportionally with their initial level, in particular if they increase less than proportionally, we should expect to observe larger effects of these crises on employment adjustment in highly leveraged economies and firms.

One strand of literature that offers some insights into the questions of this paper is the research on financial distress in the context of Chapter 11 procedures. Aghion Hart and Moore (1994) and Wruck (1990) argue that financial distress can lead to excessive management control and excessive restructuring even when liquidation could be optimal. Empirical evidence provided by Gilson et al. (1990) is coherent with such a view.

BGM tackle the issue more directly and identify two main channels through which financial markets are likely to affect the labour market in the aftermath of an adverse financial shock. The two main channels are labelled *job destruction* effect and the *labour mobility* effect of the credit crunch respectively. Theoretically, BGM offer a simple matching model with financial and labour market frictions described by a standard matching function, in a way similar to what was originally proposed by Wasmer and Weil (2004). Empirically, they use a variety of datasets on both the U.S. and Europe to ask whether it is possible to identify the two effects outlined by the model. The research finds some evidence for both types of effects.

The *job destruction* effect described by BGM works as follows. Leveraged firms may find themselves in a position in which their liquidity is suddenly called back by the lender. This has direct consequences on a firm ability to run and manage existing jobs. As a result, firms may be obliged to shut down part of their operations and destroy existing jobs. In this sense, the job

destruction effect of the credit crunch is essentially a labour demand driven channel of adjustment.

The *labour mobility* effect works as follows. Workers need financial markets to finance their mortgages and their real estate investments. Workers moving across different jobs typically need to liquidate and reinvest in real estate in a different part of the country. In such a trading the quick availability of liquidity is a key requirement. Conversely, when the mortgage market experiences an adverse shock, workers can find it difficult to finance their mobility related investment, notably the real estate investment. Under these conditions workers get stuck in the current location and cannot move across jobs in space. This reduction in workers' mobility may increase unemployment and reduce job creation after a recession involving major changes in the spatial allocation of employment opportunities. In this sense, the labour mobility effect of finance is a labour supply driven channel of adjustment.

BGM set forth an empirical strategy to test whether the two effects of finance are present in the data. They use a variety of datasets on both the U.S. and Europe to ask whether it is possible to identify the two effects described above. The empirical strategy is as follows. They draw on two-digits sector-level data on employment and financial market conditions over a large number of OECD countries. They take the US as a benchmark and analyse whether sectors with significantly lower leverage ratios vis-à-vis the same sector in the US experienced lower employment-to-output elasticities. This amounts essentially for a test of the labour demand channel of adjustment. Drawing on Labour Force Survey data for the EU15, they also estimate whether labour mobility across space is affected by the presence of a mortgage in the aftermath of a housing price bust.

With respect to the job destruction effect, the main results that they find are as follows. Conditional on a financial shock, more leveraged sectors and countries experience larger volatility, where the leverage of each sector is measured in terms of both debt-to-assets and debt-to-sales ratios. In addition, they also find that from the labor market perspective, in the aftermath of a financial crisis, the so called nightmare situation arises when firms are highly leveraged and there is a large stock of temporary workers who can be fired "at will", incurring no severance or

procedural cost, at contract expiration. Note that in this exercise, the identification comes mainly from time-series variation and results are robust to heteroskedasticity.

With respect to the labour mobility effect, they estimate probit models using micro data from the European Community Household Panel, a longitudinal survey carried out in the EU15 in the period 1994-2001. They study the individual probability of moving in general and specifically for job related reasons. The survey allows the use of retrospective information on mobility and it includes also data on personal characteristics and assets. BGM find that, conditional on a financial shock, the presence of a mortgage reduces labour mobility, notably mobility for labor market related reasons.

4. Should we save institutions or jobs?

More than two years down the road of the Great Recession and still most of the attention is absorbed by financial market reforms. True, the troubles came from financial markets and there need to be fixed. It is also undeniable that too little has been done so far to address the fundamental issues – regulatory leakages, institutions that were too big to fail, lax monetary policy, lack of transparency in accounting rules – that were at the core of the crisis. But there is a more important problem that is not even being discussed: were Governments right in putting so much emphasis on the rescue of financial institutions rather than on the real economy? Should have they instead been saving jobs rather than the banks, and their CEOs who had played a non-marginal role in the crisis?

In most OECD economies the policy put in place was mainly focused on saving financial institutions rather than on saving jobs. During the crisis, the European Commission authorized state aid to banks amounting to some 25 per cent of EU GDP, of which almost 90 per cent in state guarantees and the rest in bank recapitalization, purchase of toxic assets and ad-hoc measures for troubled institutions. The rescue packages for banks in the remaining G20 countries were also sizeable. Why spending so much money in rescuing banks that had contributed to the global crisis? The usual answer to this question is that saving financial institutions also implies saving jobs. Financial institutions are deemed essential in providing long-term finance to firms and access to bank lending is fundamental to preserve jobs. But so far the policy of rescuing

financial institutions has not prevented a huge rise of unemployment and a dramatic fall in bank lending.

There are currently almost 30 million more people unemployed in the G20 than before the crisis. As shown above, the increase in unemployment has been stronger than what could have been expected from historical experience based on the size of the output fall. Employment losses were also stronger in leveraged sectors and in countries with more heavily indebted firms as employers anticipated a credit squeeze.

Bank lending to the non-financial private sector fell by some 10 per cent in the US and by 2 to 5 per cent in Japan and the Euro area according to the OECD. Financial institutions usually argue that this fall is demand-driven: in the recession fewer firms are planning to invest and applying for bank lending. Financial institutions cannot support jobs, this is the usual claim, if firms are not willing to invest in new projects. But are we sure that preventing layoffs is not a worthwhile project on its own?

The recent research by BGM reviewed in the previous section, suggests that direct intervention in those sectors that are more exposed to finance may prevent job destruction. Taken at face value, these findings imply that saving jobs can be an effective way to reduce the adverse impact of financial crises in the labor market.

But of course things are not that simple, and great caution is needed.

First and foremost, financial crises tend to have systemic risks. And the first priority of policy makers should indeed be aimed at reducing systemic risks, and this can be done only through direct intervention in the financial markets. These interventions need to be more selective than in the past though. Not all bank failures involve systemic risks and there are ways to support financial institutions involving shareholders and creditors, such as senior bond holders, rather than only taxpayers.

Second, saving jobs requires policy makers to choose deliberately in which sectors intervention is required. This is akin to industrial policy, and we know very well how difficult is to run a

coherent industrial policy without the risks involved by lobbying, corporate politics and similar practices.

Third, saving jobs involves a moral hazard problem not so different from those faced while rescuing financial institutions. Once a saving jobs type of policy is put in place, what can prevent, in the future, that the same as well as other sectors become too exposed to financial markets just as a way to anticipating a future rescue package? One possible answer to the latter question is that such supervisory role rests on the banking system. Through a proper and cautious monitoring of their exposure to the protected sectors, banks are potentially in the right position to avoid excessive risk taking on the part of the real sector. In this respect, interactions between labour markets, financial markets and economic policy would be reinforced.

5. Conclusions

A stronger hand of Governments in preventing that private losses are shifted on to taxpayers is essential to free resources for measures saving jobs and easing the reallocation involved in any recession. These measures are much less costly than the measures adopted to support banks throughout the Great Recession. To give an example, the German Kurzarbeit scheme which is estimated to have saved up to half a million jobs in 2009, costed “only” 5 billion Euros.

A stronger competition policy is also essential for job creation. Empirical evidence on panels of firms and establishments indicates that the bulk of net job creation is in startups rather than in the expansion of existing business units. Stronger competition policy will also be fundamental in combination with industrial policies as those advocated in this paper.

The first Oecd Jobs Study in 1994 argued in favor of horizontal policies and reforms of labor market institutions moving Europe towards the US. The second Jobs Study to be written after the Great Recession should instead be much more focused on the US unemployment problems and advocate different types of labor market reforms, notably those reducing the dualism of labor markets between highly flexible and rigid contractual types. It could also advocate some role for vertical industrial policy measures targeting those sectors that are subject to the strongest competitive pressures. Stronger competition policies should then make sure that state aid to job

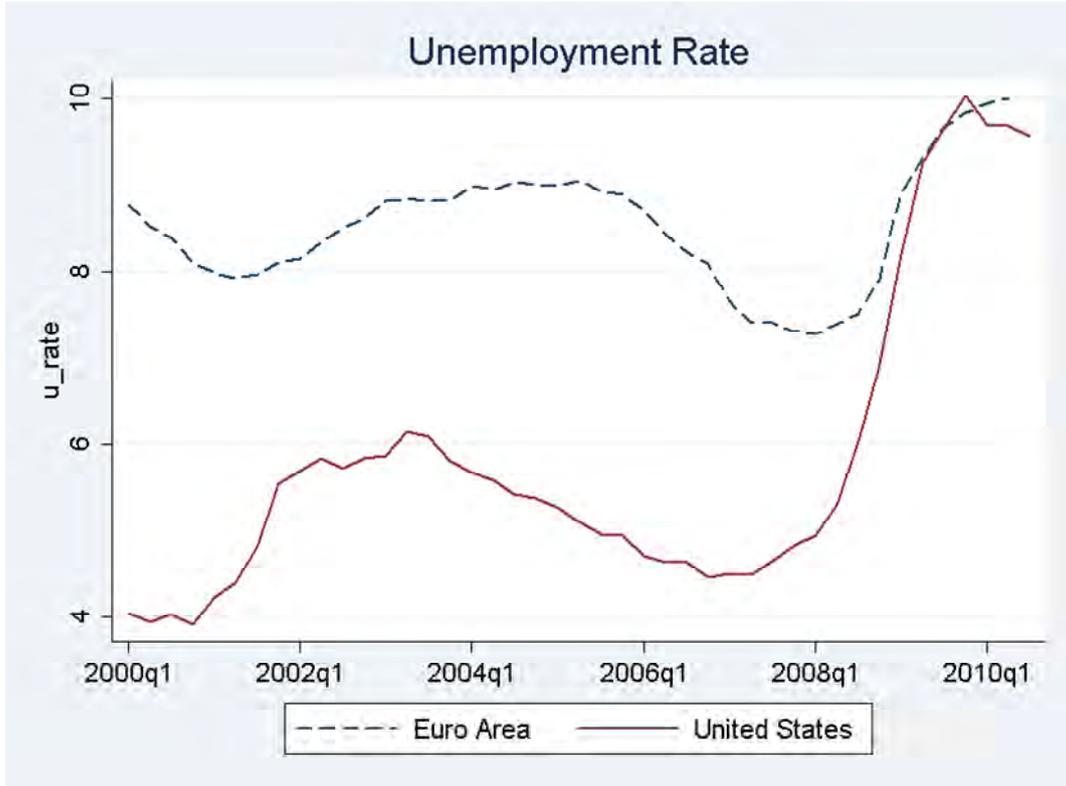
creation does not create advantages to incumbents preventing large scale startups as those required to exit the job crisis.

REFERENCES

- Aghion, P.; Hart O. and Moore, J, (1994) *The Economics of Bankruptcy Reform*, in Transitions in Eastern Europe, edited by Blanchard et al. , University of Chicago Press; pp. 215-244
- Bertola, Giuseppe and Rogerson, Richard, (1997). Institutions and labor reallocation, *European Economic Review*, Elsevier, vol. 41(6), pages 1147-1171, June
- Belke, A. and Fehn, R. (2000), 'Institutions and structural unemployment: do capital market imperfections matter?', *Discussion Paper 190/2000*, Departement of Economics, University of Hohenheim
- Belke, A., Fehn, R. and Foster, N. (2002), 'Venture capital investment and labour market performance: a panel data analysis', *CESInfo Working Paper 562*
- Boeri, T. Garibaldi, P. and Moen, E. (2010) "*The Labor Market Consequences of Adverse Financial Shocks*". Mimeo, COLlegio Carlo Alberto and Bocconi University
- Gatti, D, Rault, C. and Vaubourg, A. (2010) "The Financial Determinants of Unemployment: do they interact with labor market institutions?", *William Davidson Institute Working Paper*, 273
- Gilson, S., K. John, and L. Lang. (1990). Troubled debt restructurings: An empirical study of private reorganization of firms in default. *Journal of Financial Economics* Gilson, S., and M. Vetsuypens
- Koskela, E. and Stenbacka, R. (2002), 'Equilibrium unemployment and credit market imperfections: the critical role of labour market mobility', *CESInfo Working Paper 654*.
- Monacelli, T., Trigari, A. and Quadrini, V. (2010) Financial Markets and Employment, paper presented at the Kiel Institute-Federal Reserve of Philadelphia conference on Labor Markets after the Great Recession, Philadelphia, Dec. 3-4, 2010
- Rendon, S. (2000), '*Job creation under liquidity constraints: The Spanish case*, mimeo Universitat Pompeu Fabra
- Reinhart and Rogoff (2009). *The Aftermath of Financial Crises*, NBER Working Paper 14656
- Wasmer, E. and Weil, P. Weil, (2004). The Macroeconomics of Labor and Credit Market Imperfections, *American Economic Review*, vol. 94(4), pages 944-963, September
- Wruck, K. (1990). Financial distress, reorganization, and organizational efficiency.. *Journal of Financial Economics* 27:419-44.

FIGURE 1.

Unemployment in United States and the Euro Area



Source: National Labor Force Surveys.

FIGURE 2.

Stock Market Capitalization and Unemployment in the Euro Area and the US

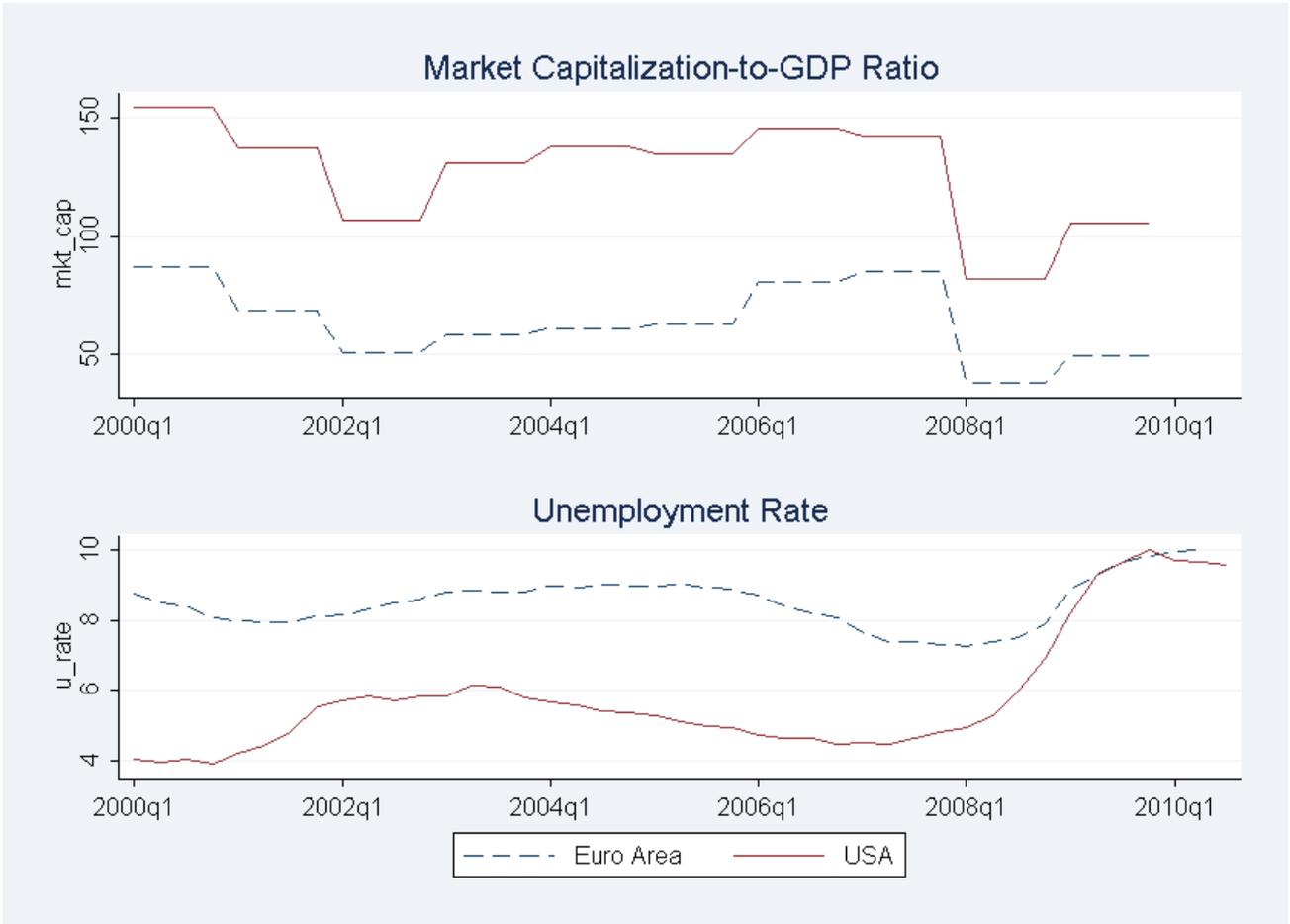
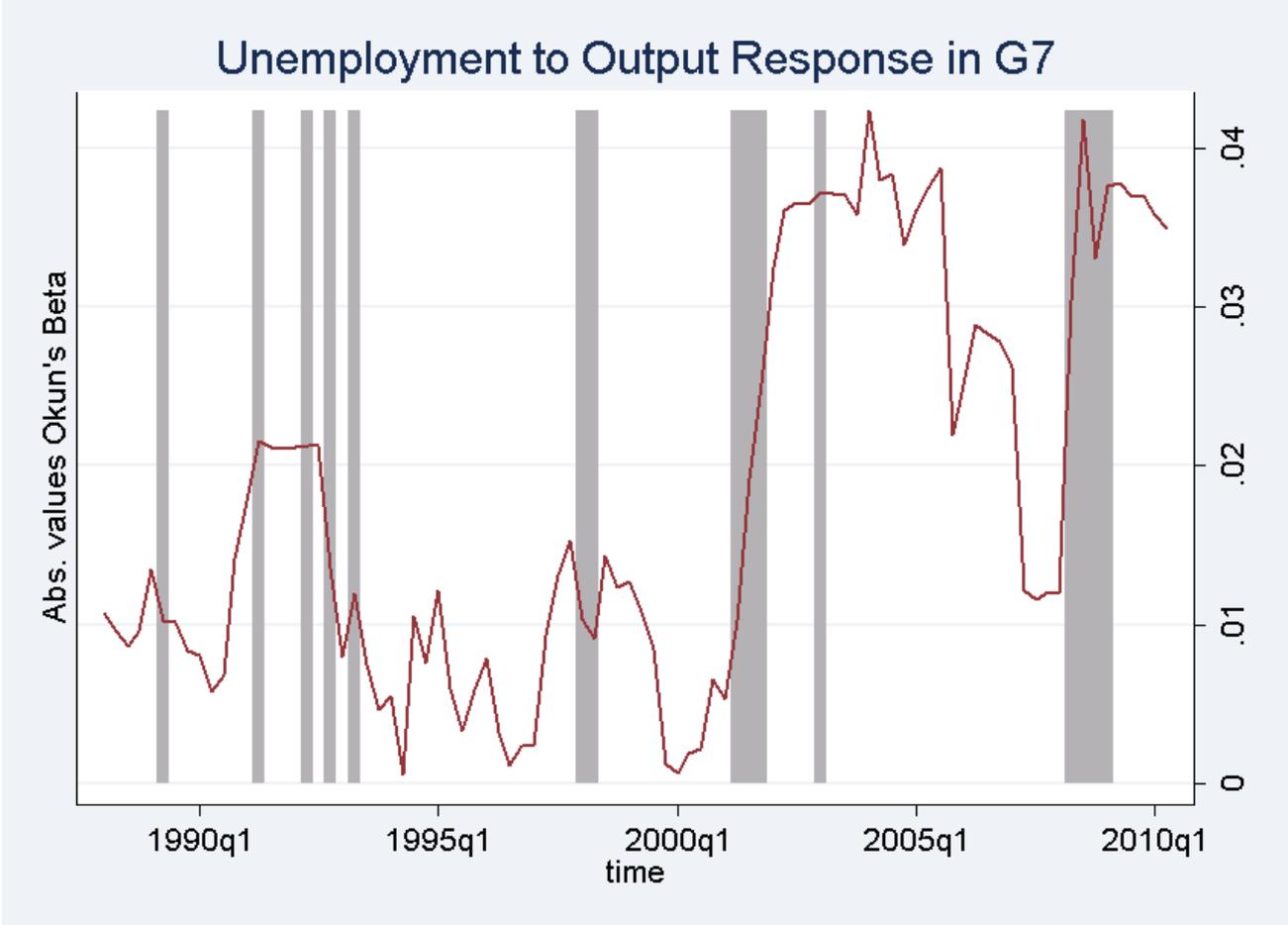
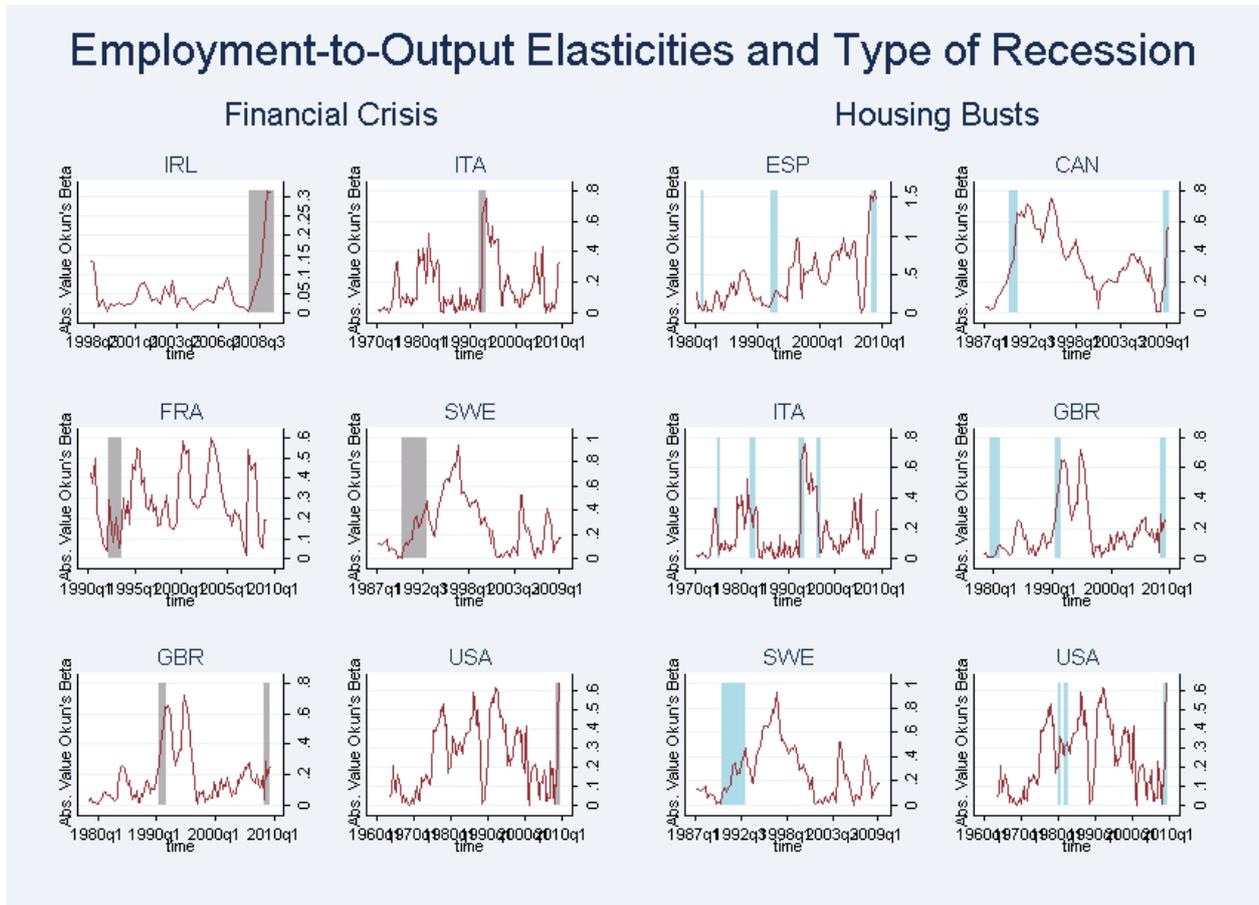


FIGURE 3. Rolling Regression Estimates of the Beta Coefficient in (static) Okun's Law



Source: Authors' estimates based on IMF-WEO data for quarterly GDP figures, OECD MEI for unemployment.

FIGURE 4. Employment-to-Output Elasticities and Recessions



Source: Authors' estimates based on IMF-WEO data for quarterly GDP figures, OECD MEI for unemployment. Reinhart and Rogoff (2009) for taxonomy of financial crises and housing busts.

TABLE 1

Okun's betas (Employment to Output), average period			
Country	<i>Overall</i>	<i>Peak-to-peak with financial crisis</i>	<i>Peak-to-peak without financial crisis</i>
Canada	0,336	0,557	-
France	0,286	0,273	0,314
Germany	0,192	-	0,214
Ireland	0,057	0,169	0,050
Italy	0,173	0,287	0,163
Spain	0,445	0,495	0,149
Sweden	0,269	0,300	0,136
UK	0,184	0,241	-
US	0,251	0,368	0,265

Source: Authors' estimates based on IMF-WEO data for quarterly GDP figures, OECD MEI for unemployment. Reinhart and Rogoff (2009) for taxonomy of financial crises.