The recent financial crisis, alongside a dramatic rise in unemployment on both sides of the Atlantic, suggests that financial shocks do affect labor markets. In the aftermath of the crisis, unemployment in the United States almost doubled, from peak to trough, within a few quarters (figure 6.1). Its short-run dynamics displayed remarkably larger Okun’s elasticity than in previous recessions. U.S. unemployment is now declining at a very low pace, denoting more persistence than in previous recoveries, including the jobless recoveries of the past two decades.

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

**Effect of Labor Market Institutions**

Some of these differences in response across the two sides of the Atlantic are arguably linked to the different labor market institutions. For
instance, short-time work schemes\textsuperscript{1} have been playing an important role in containing job losses in Germany (where unemployment actually decreased during the recession).

However, other usual suspects for these transatlantic differences in unemployment dynamics seem to have much less explanatory power this time. According to an institutional approach and economic analysis fashionable in the mid-1990s, 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 labor market volatility. However, the countries with the strictest EPL, such as Spain, this time experienced the largest increase in unemployment.

European labor markets are today much more flexible on average and are characterized by a dual structure: (a) a flexible temporary fringe alongside (b) a rigid stock of regular contracts. Such a dual structure increased labor market response to adverse business conditions in precisely those countries displaying the strictest employment protection provisions for regular contracts.
**Effect of Financial Sector**

One should therefore go beyond labor market institutions to understand these asymmetric and largely unprecedented developments. A key factor behind the response of the labor 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 after the Lehman bankruptcy in September 2008. Financial markets and the banking sector experienced a credit crunch well into 2009 in both Europe and the United States, as several authors have documented. This global credit crunch is likely to have played a key role in labor market adjustment during the downturn and in the recovery.

Regarding 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 ratio of stock market capitalization to gross domestic product (GDP). Although the size of the financial shocks (measured as losses of stock market capitalization) appear similar in terms of timing and size, the difference in financial deepening between the United States and Europe is striking, as shown in figure 6.2. Whereas U.S. stock market capitalization amounts to some 100 percent of GDP, the same ratio in Europe is about 75 percent.

Boeri, Garibaldi, and Moen (2010) study theoretically and empirically the basic links and transmission mechanisms between the shocks to the financial markets and the labor market. This line of research poses the following questions:

- How does a credit crunch translate into job destruction and larger unemployment?
- Is financial deepening (larger in the United States than in Europe) responsible for the acceleration and increase of the U.S. unemployment-to-output response to the financial shocks of 2008–09?
- How does this explanation cope with the sluggish dynamics of U.S. unemployment during the recovery?
- And how about differences in Okun’s elasticities within the EU?

**Chapter Objectives and Organization**

The goal of this chapter is threefold: First, it reviews the basic facts on unemployment dynamics, financial shocks, and Okun’s elasticity over
Figure 6.2 Stock Market Capitalization and Unemployment, Euro Area and United States, 2000–10

the business cycle. Second, it highlights the key mechanisms linking financial markets and labor markets, drawing on the most recent theoretical and empirical research in the area.

Third and foremost, it draws attention to the policy implications of this line of research. It discusses whether intervention in the labor market, in the aftermath of adverse financial shocks, should be conducted directly in the labor market (saving jobs) or indirectly through intervention in the financial markets (saving financial institutions)—in other words, addressing the trade-off between saving jobs and saving financial institutions. Although there is some evidence that saving jobs can be an effective policy, direct intervention in the labor market should be handled with particular caution because the risk of moral hazard and discretionary industrial policy should not be underestimated.

The chapter proceeds as follows:

- **From the Great Moderation to the Great Volatility** presents key figures on employment and unemployment dynamics throughout the recession.
- **Finance-Labor Interactions** reviews the literature on financial-labor market interactions, drawing on Boeri, Garibaldi, and Moen (2010).
- **Should We Save Institutions or Jobs?** discusses the policy implications of these results, focusing on whether direct intervention in the labor market is an alternative policy to intervention in the financial market, the key action so far taken by policy makers around the globe.
- **Conclusions** summarizes the authors’ findings and recommendations.

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**From the Great Moderation to the Great Volatility**

Among the Group of Seven (G-7) nations, the Great Recession resulted in a cumulative GDP decline of 3.7 percent and employment reductions (peak to trough) of 2.1 percent. Thus, the apparent employment-to-output elasticity has been on the order of 0.6—significantly larger than in previous recessions. Even conditioning on output dynamics, which involved sizable 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 given the magnitude of output decreases. Figure 6.3 displays Okun’s Law unemployment-to-output elasticities (in modules), estimated by considering the G-7 as a unique large economy and using a 16-quarter moving window (rolling regression procedure) to allow for time-varying unemployment-to-output elasticities. The 2010Q1 beta coefficient is estimated over the 2007Q1–2010Q1 window from the regression

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

(6.1)

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

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.

Concerning the responsiveness of unemployment to output during the Great Recession, 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 during the two oil shocks of the 1970s and previous contractionary episodes (denoted by shaded areas in figure 6.3).

The other aspect of this renewed, 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 Organisation for Economic Co-operation and Development (OECD) Jobs Study (updating OECD 1994) is needed, this time looking not only at Europe but also at the United States.

Needless to say, figure 6.3 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 (for example, IMF 2010, chapter 4) suggest that labor market institutions—such as EPL, 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 labor markets and hence unemployment and employment volatility.

In conjunction with these institutional changes, the specific nature of the 2008–09 Great Recession could have affected the labor market response. Assessing the nature of these financial-labor interactions and their relevance in unemployment dynamics is crucial to identify policies that increase the job content of the current recovery.

Most of the interactions discussed below operate on the labor-demand side. Thus, it is useful to begin by looking at the employment-to-output elasticity during the Great Recession and comparing it with previous financial crises involving house price busts. Figure 6.4 displays rolling regression estimates of the employment-to-output elasticity in advanced countries that experienced a sufficiently large number of financial crises and housing busts, enabling us to identify their effect separately from other recessions.

Shaded areas represent financial crises or housing bust episodes according to the taxonomy developed by Reinhart and Rogoff (2009). The figure provides a visual impression that financial crises are indeed associated with greater employment response to output changes. This outcome is confirmed by the average beta coefficients for financial
Figure 6.4 Employment-to-Output Elasticities in Advanced Countries, by Recession Type

absolute value per Okun’s β coefficient

Sources: Authors’ estimates based on IMF 2010 for quarterly GDP figures; OECD (Main Economic Indicators) for unemployment data; Reinhart and Rogoff 2009 for taxonomy of financial crises and housing busts.

Notes: CAN = Canada. FRA = France. IRL = Ireland. ITA = Italy. ESP = Spain. SWE = Sweden. GBR = United Kingdom. USA = United States.
crises and other recessions (measured from peak to peak), as displayed in table 6.1.

<table>
<thead>
<tr>
<th>Country</th>
<th>Overall</th>
<th>Peak-to-peak with financial crisis</th>
<th>Peak-to-peak without financial crisis</th>
</tr>
</thead>
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<tr>
<td>Canada</td>
<td>0.336</td>
<td>0.557</td>
<td>—</td>
</tr>
<tr>
<td>France</td>
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<td>0.273</td>
<td>0.314</td>
</tr>
<tr>
<td>Germany</td>
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<tr>
<td>Ireland</td>
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<td>0.050</td>
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<td>0.287</td>
<td>0.163</td>
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<tr>
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<td>0.495</td>
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<tr>
<td>United Kingdom</td>
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<td>0.241</td>
<td>—</td>
</tr>
<tr>
<td>United States</td>
<td>0.251</td>
<td>0.368</td>
<td>0.265</td>
</tr>
</tbody>
</table>

Sources: Authors’ estimates based on IMF 2010 for quarterly GDP figures; OECD (Main Economic Indicators) for unemployment; Reinhart and Rogoff 2009 for taxonomy of financial crises.

Note: — = not available.

Finance-Labor Interactions

Why are financial crises more associated than other types of recessions with greater labor market volatility? What are the key channels of interaction between financial and labor markets? Which institutions play a more important role in this respect? Unfortunately, there is a paucity of research on labor-finance interactions.

Theoretical Studies

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

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

The polar view is that labor market deregulation goes hand in hand with financial market liberalization (Bertola and Rogerson 1997; Koskela and Stenbacka 2002; Wasmer and Weil 2004). Greater access to financial markets by both firms and workers makes it possible to partly self-insure against labor market risk, thus reducing the demand for employment protection. From a structural standpoint, according to this literature, there should be a political-economic equilibrium in which well-functioning financial markets are associated with less-strict EPL. Countries featuring these flexible equilibria should display more employment volatility over the cycle than countries characterized by rigid labor market institutions and highly imperfect financial markets. Thus, the empirical prediction goes the other way around: deeper financial markets should be associated with more, not less, employment responsiveness to output changes.

Other papers have looked at interactions between financial variables and collective bargaining institutions, particularly the role played by firms’ leverage decisions in coping with collective bargaining (Gatti, Rault, and Vaubourg 2010; Monacelli, Trigari, and Quadrini 2010). A general implication of these models is that leverage is a way to contain labor costs or at least to contain the effects that wage increases have on hiring policies. These models also imply that labor-finance interactions could amplify the impact of productivity shocks over the business cycle.

These predictions are not necessarily informative for our purposes because they typically consider the comparative statics of steady-state equilibria and do not analyze the effects of financial crises, which reduce firms’ access to credit, taking into account the leverage these firms have at the outset. 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—one 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 chapter is the research on financial distress in the context of Chapter 11 bankruptcy 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, John, and Lang (1990) is coherent with such a view.

**Empirical Study of “Job Destruction” and “Labor Mobility” Effects**

Boeri, Garibaldi, and Moen (2010) tackle the issue more directly and identify two main channels through which financial markets are likely to affect the labor market in the aftermath of an adverse financial shock: the *job destruction* effect and the *labor mobility* effect of the credit crunch. Theoretically, these authors offer a simple matching model, with financial and labor market frictions described by a standard matching function similar to what Wasmer and Weil (2004) originally proposed. Empirically, they use a variety of datasets on both the United States 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.** 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’s 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 *labor demand-driven* channel of adjustment.

- **The labor mobility effect.** Workers need financial markets to finance their mortgages and real estate investments. Workers who are changing jobs typically need to liquidate and reinvest in real estate in a different part of the country. In such a trade, 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 labor mobility effect of finance is a *labor supply–driven* channel of adjustment.
Boeri, Garibaldi, and Moen (2010) 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 United States 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-digit sector-level data on employment and financial market conditions over a large number of OECD countries. Using the United States as a benchmark, they analyze whether sectors with significantly lower leverage ratios relative to the same sector in the United States experienced lower employment-to-output elasticities. This comparison tests the labor-demand channel of adjustment. Drawing on EU-15 data from the EU Labor Force Survey, they also estimate whether labor mobility across space is affected by the presence of a mortgage after a housing price bust.

Regarding the job destruction effect, the main results are as follows: Conditional on a financial shock, the more-leveraged sectors and countries experience greater volatility. (The leverage of each sector is measured in terms of both debt-to-assets and debt-to-sales ratios.) From the labor market perspective, after 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.

Regarding the labor mobility effect, Boeri, Garibaldi, and Moen (2010) estimate probit models using micro data from the European Community Household Panel, a longitudinal survey carried out in the EU-15 in 1994–2001. They study the individual probability of moving in general as well as moving specifically for job-related reasons. The survey allows the use of retrospective information on mobility, and it also includes data on personal characteristics and assets. The authors find that, conditional on a financial shock, the presence of a mortgage reduces labor mobility, notably mobility for labor-market-related reasons.

**Should We Save Institutions or Jobs?**

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

In most OECD economies, the policy put in place focused mainly on saving financial institutions rather than on saving jobs. During the crisis, the European Commission authorized state aid to banks amounting to some 25 percent of EU GDP, almost 90 percent of which consisted of state guarantees, the rest going toward bank recapitalization, purchase of toxic assets, and ad hoc measures for troubled institutions. The rescue packages for banks in the remaining G-20 countries were also sizable.

Why was so much money spent to rescue the very banks that had contributed to the global crisis? The usual answer 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 G-20 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 nonfinancial private sector fell by some 10 percent in the United States and by 2–5 percent in the Euro Area and Japan, according to the Economic Outlook (OECD 2010). Financial institutions usually argue that this fall is demand-driven: during recessions, fewer firms plan to invest, thus fewer apply for bank loans. Financial institutions cannot support jobs, they usually 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 Boeri, Garibaldi, and Moen (2010), as previously discussed, suggests that direct intervention in the sectors 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 on the labor market.

But, of course, things are not that simple, and great caution is needed for the following reasons:

• Foremost, financial crises tend to have systemic risks. And the first priority of policy makers should indeed be to reduce systemic risks, which can be done only through direct intervention in the financial markets. These interventions must 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.

• Saving jobs requires policy makers to choose deliberately the sectors in which intervention is required. This is akin to industrial policy, and we know very well how difficult it is to run a coherent industrial policy without the risks involved by lobbying, corporate politics, and similar practices.

• Saving jobs involves a moral hazard problem not so different from those faced while rescuing financial institutions. Once a job-saving policy is in place, what can prevent that particular sector as well as others from becoming too exposed to financial markets just as a way to anticipate a future rescue package? One possible answer is that such a supervisory role rests on the banking system. Through proper and cautious monitoring of banks’ 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 labor markets, financial markets, and economic policy would be reinforced.

Conclusions

A stronger governmental hand in preventing private losses from being shifted to taxpayers is essential to free resources for measures that save
jobs and ease the reallocation involved in any recession. These measures are much less costly than the measures adopted to support banks throughout the Great Recession. For example, the German *Kurzarbeit* scheme, estimated to have saved up to half a million jobs in 2009, cost “only” €5 billion.

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 comes from startups rather than the expansion of existing business units. Stronger competition policy will also be fundamental in combination with industrial policies, such as those advocated in this chapter.

The first *OECD Jobs Study* (OECD 1994) argued in favor of horizontal policies and reforms of labor market institutions to move Europe toward the United States institutional landscape. The second Jobs Study, to be written after the Great Recession, should instead be much more focused on the U.S. unemployment problems and advocate different types of labor market reforms, notably those reducing the dualism of highly flexible and rigidly contractual labor markets.

The new study 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 for job creation does not create advantages for incumbents, thus preventing entry of the large-scale startups required to exit the job crisis.

**Notes**

1. *Kurzarbeit* (German for “short-work”) programs in several European countries have avoided layoffs by cutting working hours, with the governments compensating workers for some of their lost income.
2. The G-7 nations comprise Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States.
3. The EU-15 refers to the number of EU-member countries before the accession of 10 candidate countries on May 1, 2004. The EU-15 comprises Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden, and the United Kingdom.
4. See note 1.
References


