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Book Part

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Firing Costs and the Business Cycle: Policy Implications in Light of the Financial Crisis

Alessio Brown, Christian Merkl, Wolfgang Lechthaler

Abstract

This article shows that different firing costs substantially affect individual countries' business cycle dynamics. This may lead to asymmetric reaction patterns in a monetary union of countries with heterogenous labor market institutions. As in a monetary union monetary policy cannot react to these business cycle differences, we recommend two things. First, labor market institutions should be similar across countries in a monetary union to prevent too large divergences. Second, as long as this is not the case, structural policies, such as hiring vouchers, can be used as second best instrument to prevent divergences.

1   Introduction

The recent financial crisis has produced substantial turmoil in countries all over the world, both in their financial sectors and in their real economies. To be able to cope with the crisis, it is very important to have a solid understanding of how various labor market institutions affect the macroeconomic reaction to various aggregate shocks. Experience gained during the crisis can, however, only provide some understanding in this regard, as the time spans involved are still relatively short.

To contribute to this understanding, we therefore rely on recent theoretical and empirical research that analyzes the role of firing costs in macroeconomic volatilities. Both theory and empirics show that output reacts less volatilely (i.e., in a more persistent manner) to aggregate shocks in countries with higher firing costs. Thus, all else being equal, it can be expected, on the one hand, that countries with higher firing costs will experience a small immediate effect in response to aggregate productivity shocks. However, persistence due to high firing costs implies, on the other hand, that such shocks will have long-term aftereffects, and thus, countries with high firing costs will need a long time to return to their precrisis level of employment and output.

We draw two policy conclusions from this. First, heterogeneity in firing costs within a monetary union may cause stress within the monetary union, as monetary policy can only react to the average aggregate situation, whereas, due to different firing costs alone, the turning point in the various national recessions will be very different. Therefore, it is advisable within a monetary union to have firing costs that are as homogenous as possible. Second, the larger firing costs are, the more effective it may be to have countervailing automatic stabilizers such as hiring vouchers. Once unemployment has started to rise, it will be very persistent and, thus, take a long time to return to its old steady state level. Therefore, hiring vouchers may be a desirable and suitable instrument to shorten a long-lasting recession.[1]

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[1] Boss et al. (2007) provide a detailed account of how hiring vouchers could be specified and implemented in Germany.

2   Empirical Evidence

Even several years after implementation of the euro as a common currency, business cycles show significant performance differences across Europe. Consider the cases of Ireland and Spain illustrated in Figure 1. While the cyclical component of the gross domestic product (GDP) is highly volatile in Ireland, it is not in Spain. If the current quarter GDP of Spain is above its long-run trend, it is very likely to stay above this trend. The current GDP in Ireland, however, has a much lesser effect on future trends there.

Figure 1: Per cent Deviation from Trend GDP
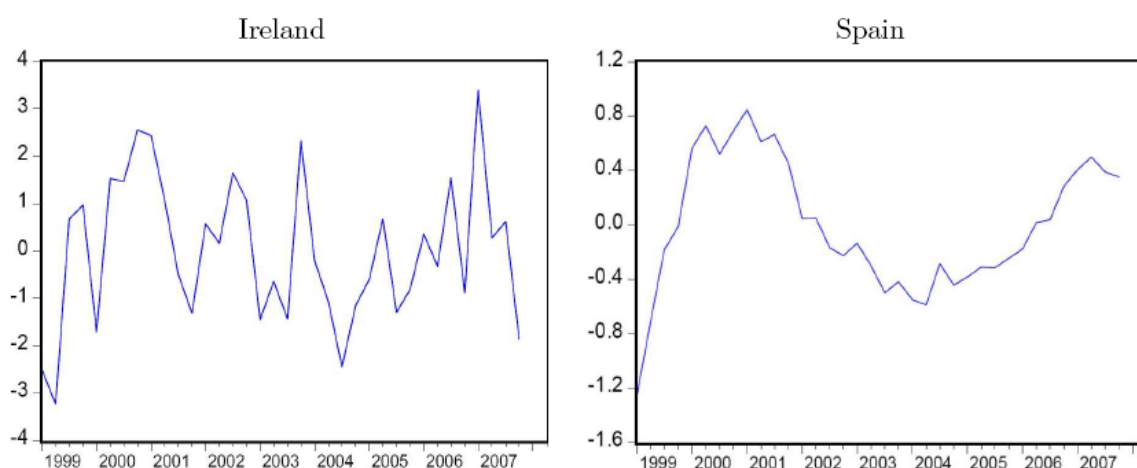
One potential explanation for these differences is that the degree of employment protection legislation in these countries (i.e., the flexibility of their labor markets) varies. As illustrated in Table 1, employment protection legislation varies by a large degree between countries worldwide, but also within the euro area. The Anglo-Saxon countries have a low degree of employment protection legislation (i.e., have flexible labor markets), while the countries in Southern Europe have a high degree (i.e., have inflexible labor markets). And indeed, regressing the volatility of output on the degree of labor market flexibility reveals a clear relationship between these two variables. As illustrated in Figure 2, countries with inflexible labor markets show a lower degree of output volatility over the business cycle. The same is true for inflation volatility.

    The macroeconomic baseline model is not able to replicate these stylized facts. Therefore, we now proceed to extend the standard model by adding a richer and more detailed labor market featuring heterogeneities as well as hiring and firing costs. We will show that such a model can explain the empirical findings much better and has important implications for optimal monetary policy.[2]

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[2] For a more detailed description of the model and its policy implications, see Lechthaler et al. (2008) and Faia et al. (2009).

Table 1: Version 2 of the EPL, Including Protection against Collective Dismissals

	1998	2003		1998	2003
Eastern Europe			***Southern Europe***		
Czech Republic	1.94	1.94	Greece	3.49	2.90
Hungary	1.54	1.75	Italy	3.06	2.44
Poland	1.93	2.14	Portugal	3.66	3.49
Slovak Republic	2.20	1.70	Spain	2.96	3.06
AVERAGE	**1.90**	**1.88**	***AVERAGE***	**3.29**	**2.97**
Northern and Central Europe			***Anglo-saxon countries***		
Austria	2.38	2.15	Australia	1.47	1.47
Belgium	2.48	2.50	Canada	1.13	1.13
Denmark	1.83	1.83	Ireland	1.17	1.32
Finland	2.18	2.12	New Zealand	0.78	1.29
France	2.84	2.89	United Kingdom	0.98	1.10
Germany	2.64	2.47	United States	0.65	0.65
Netherlands	2.27	2.27			
Norway	2.72	2.62	***AVERAGE***	**1.03**	**1.16**
Sweden	2.62	2.62			
Switzerland	1.60	1.60	***Rest of the world***		
			Japan	1.94	1.79
AVERAGE	**2.36**	**2.31**	Korea	2.00	2.00
			Mexico	3.23	3.23
			Turkey	3.40	3.49

*Source:* OECD.Stat, originally published in the OECD (1999 and 2004).

Figure 2: Output Gap Volatility and Employment Protection Legislation
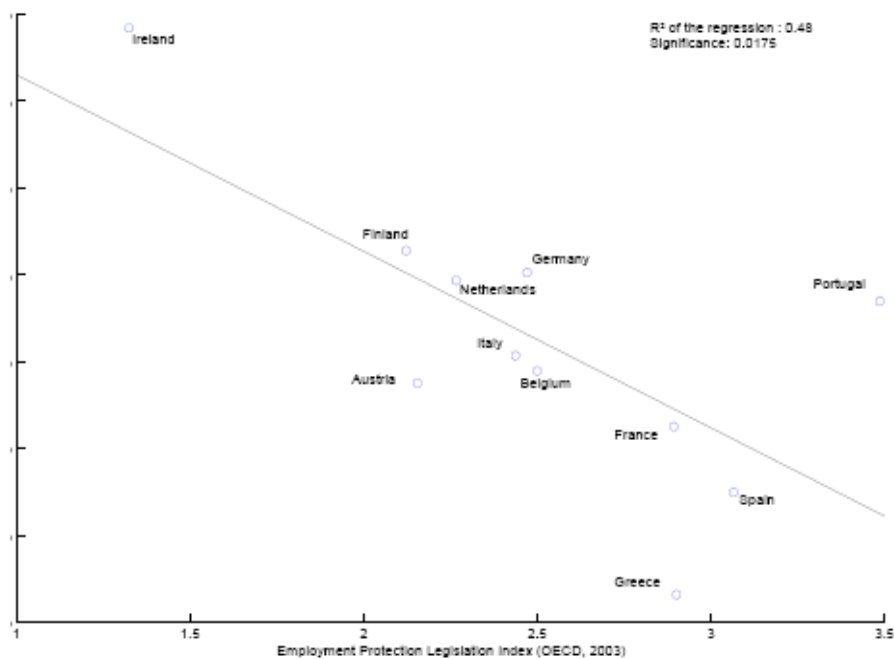
3 The Standard Model

The standard New-Keynesian model for the analysis of monetary policy assumes that prices are not fully flexible, to assure that monetary policy can have real effects in the short run,[3] while assuming that labor markets are perfectly competitive and flexible. The empirical evidence discussed above demonstrates, however, that this approach has two serious shortcomings: on the one hand, a relationship like the one depicted in Figure 2 could never be replicated because labor turnover costs play no role in such a model. On the other hand, the flexible structure of the model implies that an economy would jump back to its old equilibrium after a shock has vanished. This is illustrated in Figure 3, which depicts the reaction of the standard model economy to a one-period decrease in the nominal interest rate. Given the obvious importance of labor turnover costs, it is only natural to amend the standard model to address these two shortcomings.

Figure 3: Response to a Monetary Shock in the Standard Model
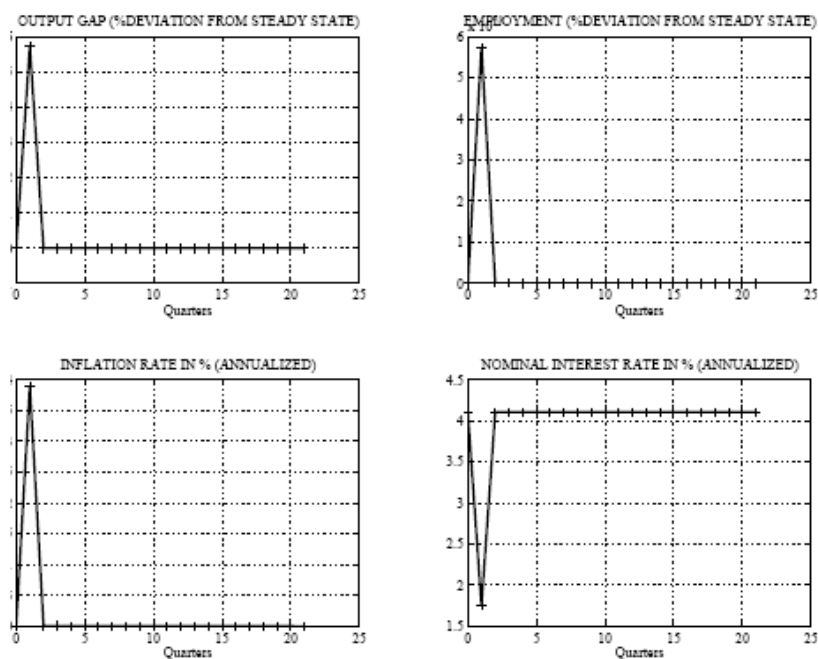
4 A Model with Labor Turnover Costs

For the most part, we stick to the standard New-Keynesian model. Specifically, we also assume that firms produce slightly differentiated products and thus have price-setting power. However, we assume that changing the price from one period to the other is costly to the firm.[4] Further, we assume that the central bank sets the nominal interest rate in dependence

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[3] If prices were fully flexible, an increase in the nominal interest rate would only drive up inflation one-to-one, so that the real interest rate would remain unchanged. In such a case, monetary policy would only affect the level of prices and inflation, but it would not affect real variables (like real GDP or employment) at all.

[4] Thus, we assume the existence of Rotemberg price adjustment costs.

of the output gap and inflation (i.e., we use a standard Taylor rule to model the monetary authority). Thus, if the output gap increases (e.g., in a recession), the central bank will lower the interest rate to provide a positive impulse to the economy, while if inflation increases, it will increase the interest rate to fight the inflation.

The only place where we deviate from the standard model is in modeling the labor market. Here we assume that firms employing workers are subject to hiring and firing costs. On the one hand, a firm that wants to hire a new worker has to incur some costs, such as screening and training costs. On the other hand, a firm that wants to fire a worker is subject to strict regulations, which can make firing the worker very costly. These assumptions alone suffice to make an economy adjust to shocks much more sluggishly. This can be easily seen by looking at the dynamic equation of the stock of workers:

$$n_{t+1} = n_t(1-\phi) + (1-n_t)\eta \;->\; n_{t+1} = \eta + (1-\phi-\eta)n_t \tag{1}$$

where η is the hiring rate, ϕ the separation rate, and $1-\phi$ the retention rate, i.e., the probability that a worker will keep his/her job. In a perfectly competitive labor market, the retention rate of employed workers would be exactly equal to the hiring rate of unemployed workers: $1-\phi = \eta$. In other words, the probability that a worker will have a job in the current period is independent of whether he/she had a job in the previous period. In such a case, flow equation 1 collapses to $n_{t+1} = \eta$. It is immediately clear that employment in the current period does not depend on employment in the previous period. However, this is no longer true as soon as firms have to bear labor turnover costs. These drive a wedge between the retention rate and the hiring rate, as illustrated in Figure 4. The higher the labor turnover costs are, the larger the wedge between the two rates becomes, and, thus, the more current employment depends on past employment. In other words, the economy becomes more sluggish and persistent.

Figure 4: The Effect of Firing and Hiring Costs
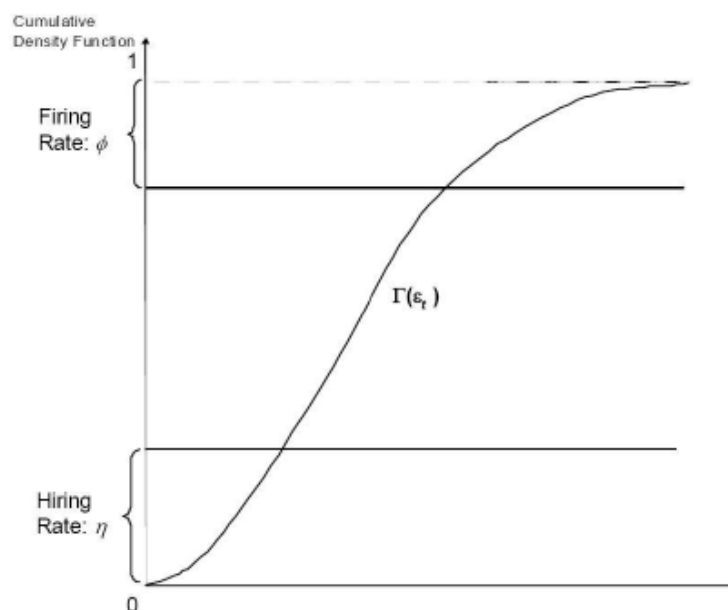
This is confirmed by numerical simulations of this model, calibrated to the German economy. The main results are illustrated in Figure 5, which shows the reaction of the model economy to a one-period decrease in the nominal interest rate. It can be clearly seen that the reaction is much more sluggish than in the standard model: the economy takes much longer to converge back to its old steady state. Furthermore, we are able to replicate the empirical finding that economies with higher labor turnover costs face lower volatilities over the business cycle. This is illustrated in Table 2.

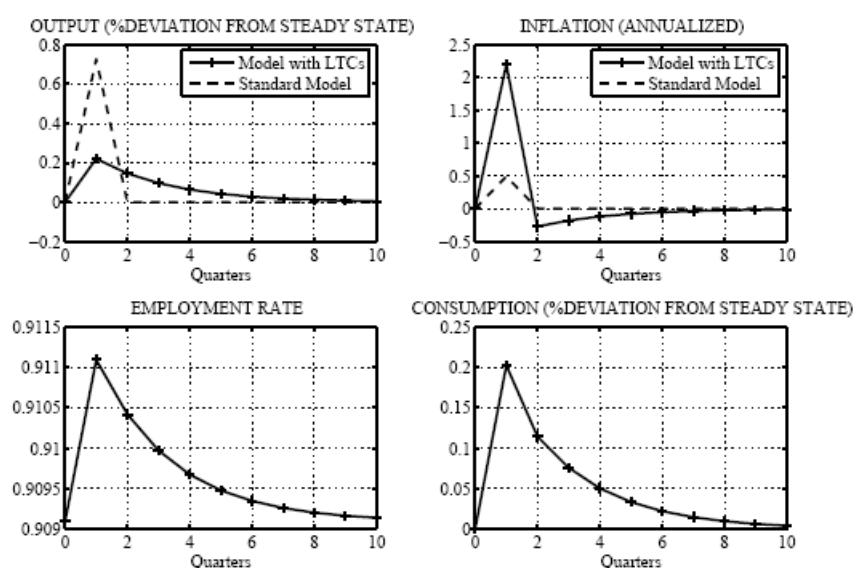*Figure 5:* Response to a Monetary Shock in a Model with LTCs

Table 2: Firing Costs and Volatility

| Standard Deviations	fc=0.5	fc=0.6	fc=0.7
Inflation	0.68	0.60	0.59
Output	0.40	0.34	0.29

5   Implications for Monetary Policy

So far, we have only used a standard Taylor rule to describe the monetary authority. We now want to proceed by asking how the central bank should respond optimally to economic shocks.

In the standard model without labor market frictions, this question is easily answered. The central bank does not face a tradeoff between stabilizing inflation and stabilizing the output gap. By avoiding fluctuations in the inflation rate, the central bank automatically stabilizes the output gap. Thus, the optimal monetary policy is simple: just target inflation and try to ensure stable prices.

In a model with labor turnover costs, this is no longer true, however. In fact, the central bank cannot stabilize both inflation and the output gap. Instead, there is a severe tradeoff between the two goals. If the central bank stabilizes prices it drives up the volatility of output

and employment. This implies that price stability is no longer optimal and that the central bank should allow for fluctuations in prices. It turns out that the optimal degree of inflation volatility depends on the magnitude of labor turnover costs. The central bank of a country with high turnover costs should allow for larger deviations from price stability than the central bank of a country with low turnover costs. This result, which is illustrated in Figure 6, has important implications for monetary policy in a currency union, where a common central bank can only set one nominal interest rate for many countries with varying degrees of labor turnover costs.

Figure 6: Optimal Inflation Volatility
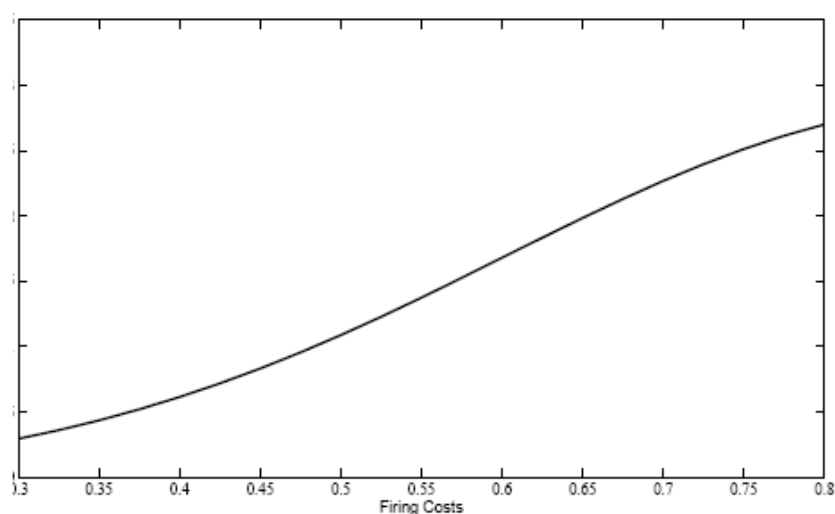
6   Implications for Labor Market Policy

The analysis above shows that optimal inflation volatility is an increasing function of firing costs. However, under conventional policy rules (such as a Taylor rule), inflation volatility is lower in countries with higher firing costs (i.e., is exactly the opposite of the situation in a country with an optimal rule). Thus, a monetary union imposes an implicit cost on member countries whenever firing costs are heterogeneous. This leads to the immediate policy conclusion that countries within a monetary union should not have too different firing costs in order to prevent high welfare costs.

This policy conclusion is particularly relevant during the current crisis. Large shocks will lead to substantial business cycle divergences whenever firing costs vary. Thus, the homogeneity of firing costs is of particular importance for the Euro area. Additionally, flexible labor markets may enable firms to adapt to the challenges of globalization. Thus, policymakers may wish to reduce employment protection and firing costs. However, this may generate opposition if the distributional consequences of more flexible labor markets are not explicitly addressed.

This underlines the need for fundamental labor market reforms with a set of broad and deep policies that imply strong economic complementarities and that, at the same time,

encompass political complementarities by taking distributional objectives into account, thereby facilitating support for such reforms. One concept that could be used for such reforms is the Danish labor market policy concept of flexicurity, which combines very flexible labor markets, i.e., low job security, with generous unemployment support and active labor market policies. By balancing flexible firing rules and workfare requirements with higher unemployment benefits, political support can be gained for such reforms.[5]

Since institutions can be changed only gradually and with considerable lag, it would be useful to implement a different instrument in the shorter run while existing institutions are still in place. The relevant instrument is hiring vouchers. Hiring vouchers may be a very suitable second-best instrument to make the labor market more flexible and to trigger the synchronization of business cycles between countries. They would refund part of a firm's labor costs during the first period of employment of a new hire. The amount of the voucher should depend positively on the length of time the new hire was unemployed and negatively on his/her skill level.[6] Since more workers would qualify for hiring vouchers in periods of high unemployment, the vouchers would act as automatic stabilizers. Thus, hiring vouchers may not only lead to positive employment effects (see Brown et al. 2007b), but they may also make a rigid labor market more flexible. This may reduce the costs of a too heterogeneous monetary union and shorten downturns.

References

Boss, A., A.J.G. Brown, C. Merkl, D.J. Snower (2007). *Einstellungsgutscheine: Konkrete Ausgestaltung für Deutschland*. Kiel Working Paper 1327, Kiel Institute for the World Economy.

Brown, A.J.G., D.J. Snower (2009). *The Incentives and Complementarities of Flexicurity*. Kiel Working Paper 1526, Kiel Institute for the World Economy.

Brown, A.J.G., C. Merkl, D.J. Snower (2007a). *Comparing the Effectiveness of Employment Subsidies*. IZA Discussion Paper 2835.

Brown, A.J.G., C. Merkl, D.J. Snower (2007b). "Einstellungsgutscheine effektiver als Kombilöhne". *ifo Schnelldienst* 60 (4): 37–41.

Faia, E., W. Lechthaler, C. Merkl (2009). *Labor Turnover Costs, Workers' Heterogeneity and Optimal Monetary Policy*, mimeo.

Lechthaler, W., C. Merkl, D.J. Snower (2008). *Monetary Persistence and the Labor Market: A New Perspective*. Kiel Working Paper 1409, Kiel Institute for the World Economy.

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[5] For the Danish flexicurity concept and its effects in Germany, see Brown and Snower (2009).

[6] See Boss et al. (2007) for a proposal for specifying and implementing hiring vouchers in Germany. Also see Brown et al. (2007a).