



Contents lists available at ScienceDirect

J. Finan. Intermediation

journal homepage: www.elsevier.com/locate/jfi

Do credit shocks affect labor demand? Evidence for employment and wages during the financial crisis[☆]

Alexander Popov^{a,*}, Jörg Rocholl^{b,1}

^a European Central Bank, Directorate General Research, Sonnemannstrasse 20, Frankfurt 60314, Germany

^b ESMT European School of Management and Technology, Schlossplatz 1, Berlin 10178, Germany

ARTICLE INFO

Article history:

Received 13 April 2016

Revised 17 October 2016

Accepted 19 October 2016

Available online xxx

JEL classification:

D92

G01

G21

J23

J31

Keywords:

Credit shocks
Financial crisis
Labor demand
Employment
Wages

ABSTRACT

We study the impact of exogenous funding shocks to German savings banks during the U.S. subprime mortgage crisis on the labor decisions of 30,000+ private and public firms in Germany. We find that firms with credit relationships with affected banks experience a significant decline in labor demand relative to firms with credit relationships with healthy banks, manifested in a simultaneous reduction in firm-level employment and average wages. The employment effect is more pronounced in larger firms, while the wage effect is stronger in smaller firms. Both employment and wages go back to pre-shock levels three years after the shock.

© 2016 Elsevier Inc. All rights reserved.

1. Introduction

The question of how financial stress affects employment ranks at the top of the academic and policy agenda, mainly due to the significant increase in unemployment during the crisis and the “jobless recovery” that followed suit in many countries. In this paper, we study empirically the impact of adverse shocks to firms’ credit access on their demand for labor. We exploit a clean and

unique experimental setting, in which we analyse shocks that originate in U.S. mortgage markets, propagate to German public banks, and affect their loan provision to local firms, with a material impact on these firms’ employment decisions.

There are three important aspects of this setting that our empirical design takes advantage of: First, the exogenous variation in financing access for firms is induced by the heterogeneous impact of the U.S. subprime mortgage crisis across banks. The German economy exhibited stable growth and record-low levels of unemployment until 2008, and the German housing market experienced no significant increase and rapid decline in prices as in the United States, Ireland, or Spain. At the same time, some of the German Landesbanken had accumulated large exposures to the U.S. subprime market and were thus substantially affected right at the onset of the crisis. Landesbanken are in turn owned by their network of savings banks, which were required to provide guarantees or equity injections for the affected Landesbanken. As described in Puri et al. (2011), shocks to external financing in this set-up are thus reliably orthogonal to local investment opportunities.

Second, on the bank side we observe actual financial distress in the form of publicly announced support for Landesbanken with large losses on their exposures to the U.S. subprime mortgage

[☆] We thank Murillo Campello (the editor), an anonymous referee, Janet Gao, Marcel Jansen, and Martin Schmalz (conference discussants), seminar participants at the Frankfurt School of Finance & Management, the BI Norwegian Business School, Aalto University, the University of Cologne, the Technical University of Dresden, and the University of Amsterdam, and conference participants at the 2nd Conference on “Bank performance, financial stability, and the real economy” in Capri, the 11th joint ECB/CEPR Labor Market Workshop “Employment creation after the crisis”, and the Annual FIRS Conference in Lisbon for valuable comments, as well as Edvardas Moseika for outstanding research assistance. The opinions expressed herein are those of the authors and do not necessarily reflect those of the ECB or the Eurosystem.

* Corresponding author. Fax: +49 69 13448552.

E-mail addresses: alexander.popov@ecb.europa.eu, alexander.popov@ecb.int (A. Popov), Joerg.Rocholl@esmt.org (J. Rocholl).

¹ Fax: +49 30 212311012.

market. On the firm side, we have data on both employment and wages and can thus reliably identify changes in firm-specific *labor demand* due to the increase in the cost of external finance that are not contaminated by potential contemporaneous shocks to local *labor supply*, such as the migration of workers away from localities with deteriorating credit conditions.¹

Third, law mandates savings banks to serve only their respective local customers and thus operate in precisely and narrowly defined geographic regions, following a version of narrow banking. This creates an ideal experimental setting in which we can estimate—in a classic difference-in-differences set-up—the employment and wage adjustment by firms attached to affected banks relative to the employment and wage adjustment by similar firms attached to non-affected banks.

We find that firms with a credit relationship with at least one affected bank experience a significant decline in employment and average labor compensation after the start of the financial crisis. Relative to firms attached to non-affected banks, firms with credit relationships with affected banks reduce employment by up to 1.5% and average wages for the retained employees by up to 1.8%. We find evidence that the employment effect increases and the wage effect decreases with firm size, suggesting that small firms face higher firing costs—potentially because they have stronger relationships with their workers—so that their adjustment in response to impaired external finance is primarily on the labor compensation margin. We also find that both effects are stronger in industries in which firms have high external financing needs for technological reasons such as project scale, gestation period, the ratio of hard vs. soft information, the ratio of tangible vs. intangible assets. Finally, the employment effect of impaired financing access is not more long-lasting than the wage effect, with both employment and wages back to pre-shock levels on the third year after the shock.

Our empirical design takes advantage of shocks to external financing that are reliably orthogonal to local investment opportunities. Nevertheless, our difference-in-differences strategy might still be subject to a number of concerns. First, our estimates could be driven by shocks to labor demand that are unrelated to the supply of credit, e.g., agency cost problems at firms becoming more severe for firms borrowing from affected banks. To that end, we employ a rich set of time-varying firm-level balance sheet characteristics and firm fixed effects. We show that the effect of impaired access to finance on employment and compensation is also observed for firms with no access to foreign markets, alleviating concerns that the reported empirical patterns are generated by a disproportionate dependence on credit granted by affected banks of firms whose exports were hit by the decline in global demand.

Second, there could be a non-random assignment of firms to banks. It is important to note that the nature of the German banking market makes it highly unlikely that firms that anticipate a future need to reduce employment and wages, choose to be associated with a bank that later becomes affected. Our results survive specifications with *region-specific trends* that allow us to identify the effect off cross-firm within-region variation at a particular

point in time. This strategy makes sure that we are not comparing affected firms in one region with unaffected firms in another region, but rather affected and unaffected firms within the same region, alleviating concerns that the effects are driven by unobservable changes in labor regulation that may vary across regions.

The question of how impaired access to capital affects labor demand is highly important. There is evidence for the negative effect of credit constraints on capital (Love, 2003), R&D investments (Brown et al., 2009), and on-the-job training (Popov, 2014), however, evidence on the effect of access to finance on firms' employment is scarce. Second, unemployment spells can have significant negative effect on workers' employability. Job-specific skills deplete quickly in an environment of continuous adoption of new technologies, and this process can turn cyclical unemployment into permanently high structural one (Ljungqvist and Sargent, 1998). Third, by potentially inducing higher unemployment, tighter credit can have important negative social consequences, such as an increase in income inequality and crime (Raphael and Winter-Ebmer, 2001; Garmaise and Moskowitz, 2006).

Our paper is closely related to studies on the effect of financial market imperfections on employment. Some studies rely—in the spirit of Gertler and Gilchrist (1994)—on indirect measures of credit constraints such as firm size or debt to identify the effect of monetary policy and the business cycle on employment (e.g., Sharpe, 1994; Nickell and Nicolitsas, 1999). Lichtenberg and Siegel (1990) provide evidence that a leveraged buyout is followed by a reduction in employment and wages. Hanka (1998) shows that highly levered firms reduce employment more often and pay lower wages. Falato and Liang (2016) show that loan covenant violations are followed by simultaneous cuts in employment and wages.

Recent studies have attempted to gauge the effect of shocks to external finance on employment using more direct measures. For example, Benmelech et al. (2011) find that following the large decline in real estate values in Japan, unemployment increased by about 1% in U.S. metropolitan state areas dominated by Japanese-affiliated banks. Greenstone and Mas (2012) show that the predicted decline in small business lending at the regional US level maps into lower rates of new business formation and higher unemployment. Boeri et al. (2012) shows that more leveraged sectors exhibit higher employment-to-output elasticities during banking crises. Pagano and Pica (2012) show that during banking crises, employment grows less in industries more dependent on external finance. There are several studies that have used micro data to estimate the response of employment to credit constraints. Campello et al. show that firms with credit constraints plan to cut investment and employment more than unconstrained firms. Chodorow-Reich (2014) uses syndicated loan data to show that small firms that before the crisis were borrowing from banks that subsequently became impaired, reduced employment more than small firms associated with healthier banks. Acharya et al. (2014) find that large firms with higher exposure to syndicated lending by European periphery banks experienced lower growth of employment, sales, and capital expenditures. Bentolila et al. (2013) show that Spanish firms with credit relationships with weak banks had substantially lower employment levels than firms borrowing from non-affected banks. Duygan-Bump et al. (2015) find that during recessions, workers in small firms are more likely to become unemployed in industries with high external financial needs.

Our paper extends upon these studies in a number of important ways. Most importantly, we look at the wage aspect in addition to the employment effect. This is crucial because a reduction in employment can take place even if labor demand does not change, as long as there is an inward shift in labor supply in response to credit shocks. Observing a reduction in employment and in wages is therefore necessary to identify an inward shift in labor demand. Moreover, the negative welfare implications of impaired

¹ Migration effects are potentially large; for example, Coen-Pirani (2010) reports a combined outflow and inflow of population of 16 percent for the average U.S. state between 1995 and 2000. Migration flows in Germany are economically large, too, with Wirth (2013) reporting an average annual net migration level of 1.3 percent between German states, and 3.2% between counties within the same state. Dustmann (2003) and Boustan et al. (2012),(2010) provide evidence on migration in response to current or anticipated negative income shocks. Brown and Matsa (2016) show that a firm-specific financial shock leads to a decline in job applications at that firm. In an early seminal paper, Katz and Murphy (1992) demonstrate the importance of observing both employment and wage data in order to determine the relative contribution of labor demand and labor supply to changes in the college wage premium.

Download English Version:

<https://daneshyari.com/en/article/11020460>

Download Persian Version:

<https://daneshyari.com/article/11020460>

[Daneshyari.com](https://daneshyari.com)