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Finance and employment: Evidence from U.S. banking reforms

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ABSTRACT

Economic theory offers competing hypotheses about how the cost and availability of finance influence labor market outcomes. Making use of the U.S. banking reforms between the 1970s and the 1990s as a quasi-natural experiment, this paper studies the impact of credit market development on employment. This paper documents the significant effects of these reforms on employment growth. Potential channels between finance and employment are also investigated. Changes in the growth of the number of self-employed individuals, the entry and exit of firms, and investment growth do not explain most of the employment growth following the reforms. The reforms had a substantially higher impact in industries with higher labor intensity, which is consistent with the idea that labor has fixed costs that need to be financed.

1. Introduction

The large body of literature documenting the real effects of financial developments is mainly focused on developments' impact on output growth.[1] Surprisingly little, however, is known about the impact of financial developments on employment. The importance of this question is particularly clear following the recent financial crisis, which caused massive job destruction, and the following jobless recovery. In particular, the jobless recovery has highlighted the fact that increased output growth may not necessarily translate into higher employment.

Theoretically, the cost and availability of external finance have ambiguous effects on employment. On the one hand, easing financing constraints may allow firms to optimally substitute capital for labor (Garmaise, 2008) by investing in more capital-intensive technologies, thereby decreasing employment. On the other hand, because in the presence of capital market frictions investment is limited by the availability of internal funds, a decrease in the cost of external finance will increase firm level investment. Due to the fact that labor and capital are complement, the demand for labor goes up. Moreover, Acemoglu (2001) and Wasmer and Weil (2004) show that credit market imperfections lead to higher equilibrium unemployment by restricting firm entry.[2]

Investigating the causal effect of finance on labor market variables is, however, complicated by identification concerns of endogeneity if one uses outcome measures of financial development such as the size or the depth of financial markets. The same problem occurs if one uses measures of firms' financial health (such as net worth or leverage) or credit spreads since all these variables are also correlated with firms' demand for labor. As such, I use the U.S. banking reforms between the 1970s and the 1990s as a quasi-natural experiment to identify the impact of easing financial constraints on labor market outcomes. The removal of restrictions on geographic expansion resulted in better efficiency and pricing of banking services. Jayaratne and Strahan (1998) and Black and Strahan (2001) show that non-interest costs, wages, and loan losses all fell following reforms that removed restrictions on bank branching. These cost reductions led, in turn, to lower prices on loans although not on deposits (Kroszner and Strahan, 2011).[3]

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[1] See Jayaratne and Strahan (1996); Rajan and Zingales (1998); Levine (2005); and Guiso et al. (2004).

[2] These are not all potential links between finance and employment. In Section 6, these theories as well as other channels are explained and investigated.

[3] The mechanism for this better performance is changes in the market shares of banks following the reforms (Stiroh and Strahan, 2003). Prior to the reforms, well-run banks could not expand to new markets because banking was functioning as a local monopoly industry. When these constraints were lifted, however, better-run banks gained the opportunity to acquire other banks in new markets and therefore assets were reallocated towards the more efficient banks (see Kroszner and Strahan (2011)).

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The simultaneous existence of cross-sectional and over-time variation concerning individual states' timing of the reforms represents a unique opportunity for identifying and assessing the causal impact of a positive shock to financial intermediation environment on employment and wages in the real sectors of the economy. As demonstrated in Fig. 1, neither the rate of change in the aggregate wage bill nor employment growth before the reforms helps predict when a state removes restrictions on bank branching, suggesting that the timing of branch deregulations at the state level is exogenous to labor market conditions.

Consequently, I employ a difference-in-differences estimation methodology that makes use of the cross-state, cross-year variation in the timing of bank branching reforms to assess the impact of finance on the growth of the aggregate wage bill. The results imply that the aggregate wage bill grew 0.74 percentage points more following the reforms, which is economically large since the average growth of aggregate wage bill in the sample is 2.35 percent. Further results show that employment growth (as opposed to the growth of wages) accounts for the growth of the wage bill. Specifically, while the growth of wages was unaffected, these reforms increased employment growth by 0.68 percentage points, which is translated to 32 percent increase of the average employment growth.

As a robustness check, I construct a reform index including all types of reforms that have made it easier for banks to expand geographically. In particular, other than lifting intrastate branching restrictions via mergers and acquisitions, states also removed restrictions on *de novo* branching and interstate banking between the 1970s and the 1990s. Combining all three reforms gives a reform index between 0 and 3, indicating the number of expansion types a state allows in each year. If banks' ability to enter new mar-

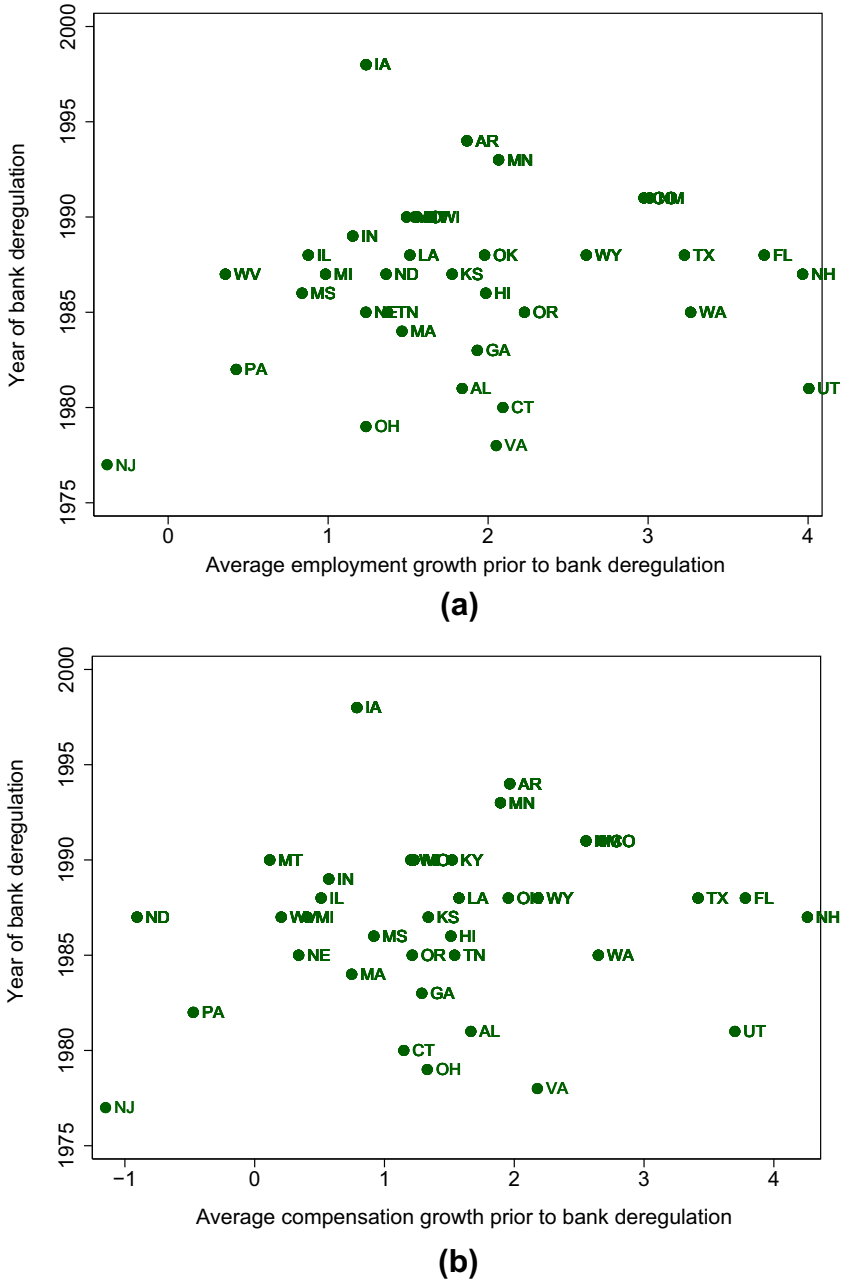

Fig. 1. Timing of reform and pre-existing labor market outcomes: graphical analysis. (a) A scatter plot of the average employment growth prior to intrastate branching reform and the year of reform. (b) A scatter plot of the average growth of aggregate wage bill prior to intrastate branching reform and the year of reform. In constructing averages, I require to have at least two data points. The t-statistics for the correlations in (a) and (b) are −0.99 and 0.26, respectively.