



# Spare tire? Stock markets, banking crises, and economic recoveries<sup>☆</sup>



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## ABSTRACT

Do stock markets act as a spare tire during banking crises, providing an alternative corporate financing channel and mitigating the economic severity of these crises? Using firm-level data in 36 countries from 1990 through 2011, we find that the adverse consequences of banking crises on equity issuances, firm profitability, employment, and investment efficiency are smaller in countries with stronger shareholder protection laws. These findings are not explained by the development of stock markets or financial institutions prior to the crises, the severity of the banking crisis, or overall economic, legal, and institutional development.

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## 1. Introduction

Researchers show that shareholder protection laws shape the functioning of stock markets and the efficiency of corporate investments. By reducing the ability of corporate insiders to expropriate resources from minority shareholders, stronger shareholder protection laws boost stock market development (La Porta, Lopez-de-Silanes, Shleifer, and Vishny, 1997, 1998), the dispersion of ownership (La Porta, Lopez-de-Silanes, and Shleifer, 1999), market valuations (La Porta, Lopez-de-Silanes, Shleifer, and Vishny, 2002), stock market liquidity (Beck, Demirgüç-Kunt, and Levine, 2003; Brockman and Chung, 2003), the information content of stock prices (Morck, Yeung, and Yu, 2000), and

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the efficiency of corporate investments (Demirgüç-Kunt and Maksimovic, 1998; McLean, Zhang, and Zhao, 2012), with potentially large ramifications on economic growth (Levine and Zervos, 1998).

Researchers have not, however, assessed whether shareholder protection laws influence how firms respond to banking crises. When banking systems fail, the flow of bank credit to firms is disrupted with harmful effects on investment, employment, and economic growth (e.g., Kroszner, Laeven, and Klingebiel, 2007; Reinhart and Rogoff, 2009). In 1999, Alan Greenspan, chairman of the Federal Reserve System, argued that stock markets could mitigate these negative effects. Using the analogy of a spare tire, he conjectures that banking crises in Japan and East Asia would have been less severe if those countries had built the necessary legal infrastructure, so that their stock markets could have provided financing to corporations when their banking systems could not. If firms can substitute equity issuances for bank loans during banking crises, then banking crises will have less harmful effects on firms and the economy (Greenspan, 1999a, 1999b). Although official entities and others discuss the spare tire argument (e.g., National Commission on the Causes and Consequences of the Financial and Economic Crisis in the United States, 2011; Wessel, 2009), we are unaware of systematic assessments of it.

In this paper, we evaluate several interrelated implications of the spare tire view. First, the spare tire view stresses that if firms can issue equity at low cost when banking crises limit the flow of bank loans to firms, then the impact of the banking crisis on firm performance will be ameliorated. Put differently, if a banking crisis shuts off bank lending and firms do not have an alternative source of financing, firms will suffer more than they would in the presence of a stock market that provides an alternative source of external finance. Second, the benefits of stock markets when banks reduce lending accrue primarily to firms that depend heavily on external finance. For those firms that do not rely on external finance, having substitute forms of external finance likely brings fewer benefits. Third, the spare tire view stresses the ability of the stock market to provide financing during a banking crisis, not the size of the market before the crisis. Although bank loans could be the preferred source of external financing during normal times, the spare tire view holds that when this preferred source goes flat, equity issuances can, at least partially, substitute for bank loans. Critically, for the stock market to play this role, the legal infrastructure must be in place before the banking crisis, so that the market can respond when the banking system falters. The precrisis legal infrastructure, not necessarily the precrisis size of the stock market, allows the market to act as a spare tire in times of crisis.

We assess these predictions by combining several data sets and employing a difference-in-differences methodology. The dependent variable is a measure of equity issuances, firm profitability, employment, or investment. We obtain these, and other, firm-level data from the Worldscope database. The key explanatory variable is the interaction term of a measure of the strength of shareholder protection laws and a systemic banking crisis dummy

variable that equals one in the year of the onset of the crisis and remains one for the next three years. To measure the strength of shareholder protection laws, we use the Djankov, La Porta, Lopez-de-Silanes, and Shleifer (2008) anti-self-dealing index, which gauges the degree to which the law protects minority shareholders from being expropriated by managers or controlling shareholders using self-dealing transactions. Based on an extensive body of research, we interpret greater values of the anti-self-dealing index as indicating that outside investors will feel more confident about buying shares in companies, which will improve the firms' accessibility to equity market financing. To date a systemic banking crisis, we use Laeven and Valencia (2012). If the key interaction term enters positively in the equity issuance, performance, and employment regressions, then this would suggest that equity issuances, firm performance, and employment deteriorate less following a systemic crisis when the country has stronger shareholder protection laws. The regressions include an assortment of time-varying country and firm characteristics, as well as firm and year fixed effects. Our main sample contains about 36 hundred firms, in 36 countries, over the period from 1990 through 2011.

We also test whether the particular firms that the spare tire view predicts will benefit most from stronger shareholder protections actually do benefit most. The spare tire view stresses that firms that rely heavily on external finance will benefit more from the spare tire financing mechanisms fostered by stronger shareholder protection laws than other firms. Put differently, if some firms do not use bank financing, then having a replacement source of external finance will not matter much for their performance. We therefore test whether firms in financially dependent industries, as defined by Rajan and Zingales (1998), benefit more from stronger shareholder protection laws during a banking crisis than other firms.

The findings are consistent with the predictions of the spare tire view. Following a systemic banking crisis, stronger shareholder protection laws facilitate equity financing by firms in financially dependent industries. That is, among firms in financially dependent industries, equity financing falls by less following the onset of a systemic banking crisis in economies with higher values of the anti-self-dealing index than in economies with weaker shareholder protection laws. Also consistent with the spare tire view, we find that firms in economies with stronger shareholder protection laws experience less pronounced declines in profits and employment after the start of a banking crisis and the mitigating effects of shareholder protection laws are especially large among firms in financially dependent industries. Although systemic crises are associated with a drop in firm earnings and employment, the drop is much less severe in economies with large values of the anti-self-dealing index. This is consistent with the argument that the precrisis legal infrastructure shapes an economy's response to crises.

The estimated economic effects are large. Consider two countries: one that has the sample average value of the anti-self-dealing index and another that has a one standard deviation larger anti-self-dealing index. If both countries have average values of the other country characteristics,

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