

Comment

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The paper by Kornejew, Lian, Ma, Ottonello and Perez provides an insightful analysis of the role that institutions for business bankruptcy resolution play on the impact of credit cycles on the real economy. The macroeconomic consequences of credit cycles for both households and firms have received much attention in recent decades. Perhaps surprisingly, the role of the process by which firm distress is dealt with has been largely ignored. This paper brings the institutional designs for debt resolution to the forefront, making a substantive contribution to our understanding of the consequences of credit cycles, macroeconomic dynamics, and macroprudential policies. In a nutshell, this is a big picture paper that makes a really consequential point.

The paper bridges an important gap between two active and exciting areas of research. A substantive body of work in law and economics and, especially, in corporate finance has utilized micro level data and empirical strategies such as differences-in-difference designs or instrumental variables to make a strong case for causal (and nuanced) effects of the design and enforcement of bankruptcy institutions on the outcomes of wide variety of firm outcomes (see, for example, Iverson, 2019; Ponticelli and Alencar, 2016). But as convincing as these studies may be for establishing clean identification, their findings cannot be easily utilized to elicit robust aggregate effects. Separately, an extensive literature has used cross-country evidence to document the effects of credit cycles on the macroeconomy. Within this line of work, some recent papers have started to focus on corporate debt dynamics specifically (Mian et al., 2017; Ivashina et al, 2024). Still, there is much to learn about the underlying factors that may exacerbate the detrimental effects of corporate debt booms on the economy.

One important underlying factor may be the institutions that help resolve firm distress. If credit expansions lead to overleverage and higher corporate default rates, how the distressed assets are redeployed may have consequential implications for the aggregate economy. An important insight of this paper is that a country's bankruptcy system should be taken into account for the design of macroprudential policies.

The paper tackles this question empirically and theoretically. Theoretically, it provides a simple framework to illustrate how the process for bankruptcy resolution can dampen the negative effects of credit cycles on the economy. I won't dwell on it here, but let me just summarize the key intuition and predictions of the baseline model. The most interesting (and in practice the most common) case are nonfundamental credit booms that are not driven by increases in firm productivity. After a period of business credit growth, firms will be overlevered. As they default, output will contract. Under the assumption that firms' continuation value is higher than liquidation value, a legal system that facilitates restructuring over inefficient liquidation will preserve more firms as a going concern and help minimize the decline in output. By contrast, an efficient bankruptcy system ameliorates the positive effects on output and defaults that follow fundamental booms. The theoretical framework helps to convey the connection between bankruptcy efficiency and credit cycles that the authors have in mind, but this is at its core an empirical paper concerned with eliciting the effects of bankruptcy efficiency in the data.

The empirical evidence is based on 39 countries from 2003 to 2019. A bankruptcy system is deemed to be more inefficient when it fails to preserve as an ongoing concern a firm that should not be liquidated, and when the legal process takes longer and is costlier. Using state-dependent local projections, the paper finds that following a ten percentage point increase in business credit to GDP growth over a five year period, output declines by about three percentage points over the following five years when the efficiency of the country's bankruptcy system is in the bottom quartile. By contrast, the effects on output are essentially negligible for countries in the top quartile of the distribution of bankruptcy efficiency. An inefficient system also leads to more pronounced declines in investment and private consumption, and increases in unemployment following credit booms.

Importantly, this paper is not the first to make a connection between bankruptcy institutions and macroeconomic stability. Focusing solely on periods of output contractions, Jordà et al (2022) show that when a recession starts after a five-year business credit boom, the declines in GDP and investment that follow are deeper and longer in those countries with more inefficient bankruptcy systems. This paper follows essentially the same empirical design as Jordà et al (2022), albeit with one very significant change: it does not condition the analysis on recessions. The main novel finding is therefore that the aggregate effects of legal institutions on the real economy following a credit boom are evidenced on average.

While these average effects are the baseline specifications utilized throughout the paper, in light of the Jordà et al. (2022) findings, one obvious concern is that the negative effects of inefficient bankruptcy systems may still only operate during recessions. This is a point I raised in my discussion, and I am glad to see that the updated paper has incorporated it. Table IA1 shows clearly that bankruptcy efficiency helps to undo the declines in real GDP that follow a 5-year credit expansion whether these declines are preceded by a recession year (panel A) or by a year in which GDP did not contract (panel B). Thus, this paper shows that legal regimes have a much broader impact on macroeconomic cycles than previously documented.

This finding naturally raises the question of what exactly are the frictions that create such losses of value even during good economic conditions. The paper is not too explicit on this, but it does point to the importance of asset specificity as a reason why liquidation may be inefficient, and references empirical work based on U.S. evidence that validates this empirically (Ramey and Shapiro, 2001; Kermani and Ma, 2023). But micro-economic studies on the effects bankruptcy on firms point to more complex mechanisms. For example, Bernstein et al. (2019) show that the long-run use of real estate assets of liquidated firms is lower relative to reorganized firms only when markets are thin and access to finance is low. That means that financing frictions that limit the ability of liquidated assets to be redeployed quickly and efficiently may be significant for economic outcomes, and further exacerbate any distortions from asset specificity as well as reduce the likelihood of viable firms to be purchased whole. These financing frictions should be more severe during recessions and, especially, at times of financial distress. It is possible as well that they are more severe in countries that also happen to have weaker institutions, and less efficiency bankruptcy processes.

The fact that the legal system has such an impact on economic outcomes even during normal times raises some concerns about identification. In fact, the question the authors are tackling is one that

is hard to answer convincingly, in no small part because the efficiency of the bankruptcy system is primarily explained by country fixed effects. The paper does a great job at controlling for a wide variety of potential confounding factors, by including one at a time controls for factors such as a country's income per capita level and volatility, exchange rate regime, general rule of law, and indicators for the quality of institutions. But the list cannot be exhaustive and ultimately it is challenging to rule out the possibility that the measure of bankruptcy efficiency may be capturing other country characteristics that become salient at times of firm distress.

The omitted variable bias is obviously an easy comment to make, but I am worried in particular about one plausible omitted factor: the fact that the financial system may help some countries preempt or ameliorate firm distress more than others. Following the findings of Bernstein et al. (2019), one may be especially concerned about differences across countries in firms' access to finance, the existence of competitors with deep pockets that can absorb firms in distress, and especially, the ability of the government to rescue distressed firms or inject liquidity during difficult times. To address concerns of omitted bias beyond showing robustness to the inclusion of the controls mentioned above, the paper instruments bankruptcy efficiency with the country's legal origin. But this instrument is unlikely to satisfy the exclusion restriction. For example, a large body of work studies the importance of legal origins for financial development, in addition to many other outcomes (see LaPorta et al., 2008, for a review of this literature). Thus, other financing frictions that may contribute to the efficiency in which assets are redeployed in the economy besides the bankruptcy process may be directly affected by the legal origin of the country. Ultimately, separating the effect of the legal system for bankruptcy resolution from other country-level factors that shape financial frictions—and therefore the likelihood of firm distress and its resolution—is simply extremely challenging. The paper does as much as possible given these constraints to put forth a convincing case for identification.

It is also challenging to obtain a comparable measure of how bankruptcy is resolved for a large set of countries, especially since the enforcement may vary across countries beyond differences in the letter of the law. To solve this, the authors rely on a strategy first introduced by Djankov et al. (2008), who present a made-up stylized example of a viable firm in distress with multiple claimants to insolvency practitioners around the world. The key metric used in this paper—i.e., bankruptcy efficiency—intends to capture claimholders' recovery relative to the continuation value. This measure has important advantages. Since it is not based on hard data but rather based on the narratives provided by legal professionals, it can be relatively easily obtained for most countries. In 2019, it is observed for 166 countries. In fact, it is more broadly available than data on business debt, which constraints the analysis to more efficient countries (Table 1). Moreover, using the same hypothetical case allows for comparability across countries. It is also directly related to what one would like to measure (the efficiency of the system), which would be hard to do with real data.

But there are also important limitations of this hypothetical measure. The example considers a firm that should optimally continue as an ongoing concern, and should not be liquidated. It also rules out by design the distortions that in practice may make reorganizations inefficient, such as the possibility for managers and shareholders to tunnel resources. In countries with weak institutions, a lengthy and unpredictable process of reorganization could conceptually lead to higher losses than the loss of value from liquidation, especially for complex bankruptcy cases. This measure also ignores out-of-court restructurings, which are an especially common method for addressing

distress precisely in countries with weak institutions that may induce inefficient continuations (Franks and Lóránth, 2004). It is also intended to be representative of insolvency for a midsize firm in many countries, and therefore may not be representative of the process for larger firms, which are likely more systemically relevant.

Given these limitations, it seems critical to validate the findings with real data not based on the individual assessments of legal practitioners. I am pleased to see that the authors have taken a step in this direction in the revised paper. Specifically, Figure IA 1 shows a positive correlation between the bankruptcy efficiency measure and a proxy of the realized default recovery rate based on information on the values of loan impairments and non-performing loans across countries. While this is reassuring, there is much more variation in the realized recovery rate than in the efficiency measure. Given that the coverage of this alternative proxy is reasonably good, it would be helpful to show that the main results of the paper are also robust to this alternative measure. Further direct information linking the strength of the economic contraction following a credit boom to the prevalence and persistence of bankruptcies across countries could also be valuable.

Overall, the paper presents strong evidence that the legal institutions for the resolution of firm distress may play an important role for macroeconomic stability. What are the policy implications that emerge from this finding? The authors point to the need for macroprudential policies to take into account the design of the legal framework. This would allow policymakers to identify those settings in which intervention may not be that necessary (but equally costly) because credit booms are unlikely to hurt the economy. But this view does not take into account the endogeneity of credit growth to bankruptcy resolution. Djankov et al. (2008) find a 10-point increase in bankruptcy efficiency was associated with a 5-6 percentage point higher private credit-to-GDP ratio, suggesting that the effectiveness of the legal systems may contribute to financial development. If countries that are more effective at resolving bankruptcy are also those that experience large credit booms, then in practice one may see more of an impact on the economy in these cases. Large expansions in business debt during nonfundamental booms may still be pernicious even if the bankruptcy system can deal with firm defaults in an efficient manner.

An alternative implication would be to reform legal systems to tilt them away from liquidations and towards reorganizations, as Japan did in the late 1990s and early 2000s. While one may think that is an unlikely path more generally, it is worth remarking that over time, the bankruptcy process has become more reorganization friendly, in part due to an understanding of the value of keeping firms as an ongoing concern. In the U.S., the origins of court mandated reorganization processes stem from the railroad equity receiverships of the late nineteenth century. At that time, the norm was for firms to be liquidated in default. But it became clear that railroad systems were worth more whole than the value that could be obtained by selling each of their lines separately (Skeel, 2001), and the process for receivership—an ancestor to modern Chapter 11—was born. The World Bank Doing Business database utilized in the paper also points to broader changes in this direction. In addition to measuring bankruptcy efficiency, they have also collected information on bankruptcy reforms. The countries in the paper's main sample experienced 38 reforms over the sample period that made resolving insolvency easier (with an average increase in bankruptcy efficiency of about 6 percentage points) and only 2 reforms that made it harder (leading to a decline in efficiency of about 3 percentage points). As more countries make reorganizations during bankruptcy more likely, it becomes even more central to understand what these legal institutions imply for

macroeconomic stability. In addition, in recent decades we have witnessed an increase in firms' intangible assets, and this trend will surely accelerate going forward. Since intangible assets are more difficult to collateralize and may be more specific to the firm, the frictions that underpin the findings of this paper may only become more salient. This paper makes a strong case for the importance of incorporating legal institutions for default resolution, and especially the distinction between reorganizations and liquidations, into macroeconomic analyses.

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