Policy brief
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International Growth Centre

Improving Financial Access for Entrepreneurs in Developing Countries

Evidence from a Series of Experiments with Commerical Bank Loan Officers

In brief

- Providing incentives for loan officers is difficult as banks seek to both increase lending volume whilst minimizing risk. Incentives play an important role in emerging markets where high information costs and the limited enforceability of debt contracts means that risk management relies on the expertise of the bank's front-line employees.

- This study seeks to understand the role of incentive schemes in risk-taking and performance among commerical bank loan officers.

- We aim to identify market-based interventions that can reduce bias and default-risk, with the objective of improving financial access of previously unbanked entrepreneurs.

- Key findings:
  - **Performance incentives affect screening effort** - loan officers facing pay for performance spend more time screening and exerting 'costly' effort
  - **Performance incentives affect lending decisions** - monetary incentives exert a strong effect on lending decisions and credit supply. Officers facing monetary sanctions on bad loans approved 10% points fewer loans than officers facing an origination bonus.
  - **Loan officers exhibit important behavioural biases** - when offered incentives rewards based on lending volumes, they tend to inflate their assessment of credit risk, even though it does not affect compensation in any way.
  - **Deferred compensation reduces effort** - deferring bonus payments by three months reduced the measure of costly effort by up to 50 percent.
  - **Alignment of incentives within the bank improves lending decisions and profitability** - when incentives between the officer and the credit-appraisal or risk-management team are aligned, credit officers are more effective in screening, communicate risk more truthfully and improve the profitability of lending.

Policy Motivation

"This research seeks to facilitate successful lending to small and medium enterprises by the formal banking system"

Providing incentives for loan officers is difficult. Banks seek to increase lending volume while minimizing risk. Too much emphasis on the former can lead to failure on the latter, as demonstrated by the recent financial crisis. Loan officers enjoy limited liability, and are often paid over a much shorter horizon than a bank lends money.

This research aims to understand the role of incentive schemes in risk-taking and performance among commercial bank loan officers. Incentives play a particularly important role in emerging markets where, due to high information costs and the limited enforceability of debt contracts, risk management relies crucially on the expertise of a bank's front-line employees.

We use a novel experimental approach to look into the 'black-box' of the underwriting process for small business loans in India, a large emerging market. This research seeks to facilitate successful lending to small and medium enterprises by the formal banking system. This sector has been identified as the "missing middle," too large for microfinance, but often lacking the credit history or collateral assets typically required by the formal banking sector. The findings of our research aim to identify market-based interventions that can reduce bias and default-risk in lending, with the objective of improving the financial access of previously unbanked entrepreneurs in an emerging market.

Policy Impact

"The findings of our research aim to identify market-based interventions that can reduce bias and default-risk in lending"

We expect that this research will impact policymaking at the international, national and firm levels. Regulators, either of their own accord, or through the influence of international agencies such as the World Bank, may use the results to inform policy on incentive structures within banks, both with regards to risk management, as well as promoting credit to small and medium businesses. Banking firms and other lenders may use the findings of our work to improve their lending model to marginal clients in a cost-effective manner, without exposing the bank to large default risk.

Audience

The primary audiences for this research are the human resources and lending departments of commercial banks especially in developing countries. Additionally, banking sector regulators such as the Reserve Bank of India, which sets the volume of credit, and monitors bank lending targets to marginal customers may also use the results to inform rule setting. Regulatory rule setting about risk management and underwriter incentives will especially benefit smaller lenders, such as cooperative banks, and non-banking finance companies who may not be able to conduct such rigorous research and analysis of their underwriters' behavior.

Implications

The key findings of our research with a brief description on each action point are given below:

Performance incentives affect screening effort

Loan officers facing pay for performance spend significantly more time, and exert more "costly effort," than those being paid under a fixed wage scheme.

Performance incentives affect lending decisions

We find a similarly strong effect of monetary incentives on lending decisions and credit supply. High-powered incentives that penalize credit officers for originating loans that subsequently become delinquent lead to significantly more conservative lending decisions and a reduction in credit supply. In our main experiment, credit officers facing high-powered incentives approved 10 percentage points fewer loans than the loan officers who faced an origination bonus.

"High-powered incentives that penalize credit officers for originating loans that subsequently become delinquent lead to significantly more conservative lending decisions"

Performance incentives and risk-assessment

Loan officers exhibit some important behavioral biases. When they are offered rewards based on lending volume, credit officers tend to inflate their subjective assessment of credit risk across loans, even though the credit ratings do not affect compensation in any way. This holds for performing loans as well as for loans that subsequently became delinquent.

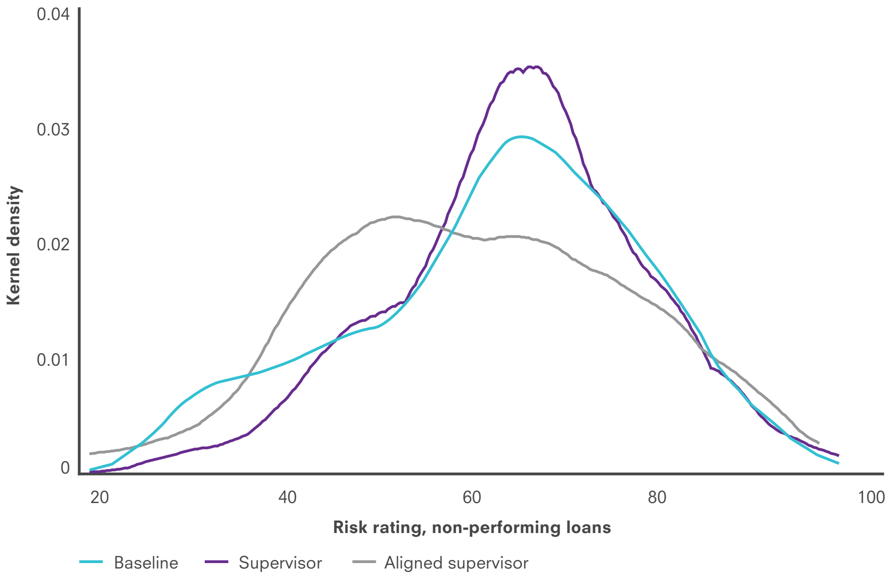
Deferred compensation reduces effort

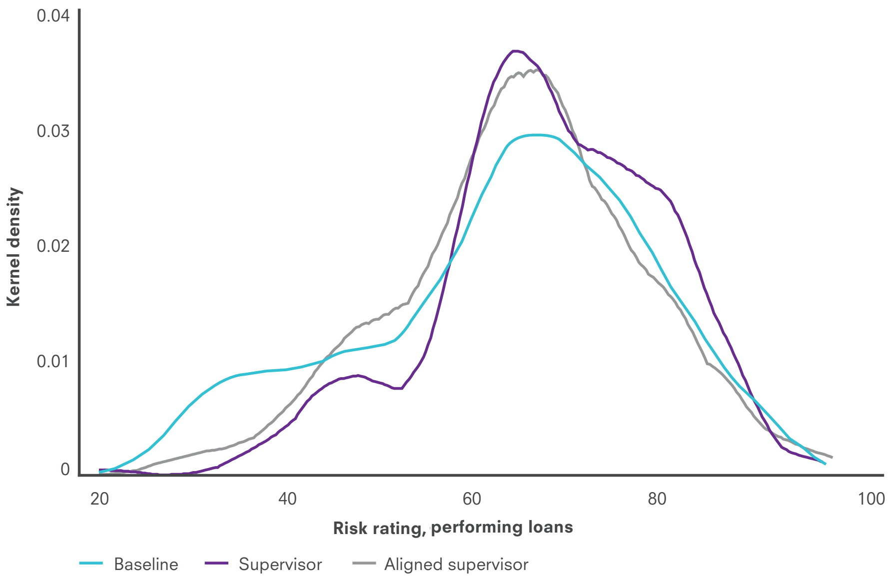
One challenge with performance-based incentives is that the outcome of a loan is known only a year after it is issued. Deferring this pay reduces effort, most likely because employees are less motivated by payments in the future than immediate payments. Consistent with the view that the time horizon of performance based compensation can induce significant distortions in risk-taking and screening behavior, we show that deferring the payment of performance incentives leads to a significant decline in (costly) screening effort. Specifically, deferring bonus payments by three months reduced the measure of costly effort by up to 50 percent.

Alignment of incentives within the bank improves lending decisions and profitability

Commercial bank lending models typically involve two stages of credit approval; an initial assessment of a client's credit risk at the point of sales and a second screening by the bank's credit appraisal or risk-management team. In an extension of the experiment, we explore potential inefficiencies in communication and risk-assessment that arise from the misalignment of incentives at these two levels of the bank's corporate hierarchy. We show that the alignment, rather than the power of performance incentives at the two stages of the lending process matters for efficiency. When incentive schemes are aligned, reporting credit officers are more effective at screening out non- performing loans (see Figure I below), communicate information about a borrower's credit risk more truthfully and improve the profitability of the bank's lending.

Figure 1: Kernel density plots of risk-ratings under aligned and non-aligned incentives





When credit officers and risk-managers face identical incentives, reporting credit officers perform much better at identifying loans later that become delinquent.

Implementation

"Deferring this pay reduces effort, most likely because employees are less motivated by payments in the future than immediate payments"

When determining the best means to achieving the social and commercial objectives of banking policy, it is important to note that modifying loan officers incentives alone may be insufficient to ensure a zero default rate. There may always be some defaults, our research study does however find that loan officers do respond to incentives and poorly designed schemes, will lead to bad outcomes. For example in our study when loan officers were offered an incentive structure that offered an equal reward for rejecting or accepting a well performing application while offering no punishment for selecting an eventually poorly performing loan resulted in much poorer loan screening. Although we find that delayed payments tend to reduce the effort loan officers expending on screening the files, it maybe optimal to offer incentive structures with such features. Additionally it might also be appropriate to relax the limited liability constraint, and more closely link the loan officers' compensation to the eventual performance of the loan applications they approve.

Further Readings

Shawn Cole, Martin Kanz and Leora Klapper (2011) 'Rewarding Calculated Risk-Taking: Evidence from a series of experiments with Commercial Bank Loan Officers', mimeo, Harvard University

Martin Kanz (2010) 'Bank Structure and Entrepreneurial Finance: Experimental Evidence from Small-Business Loans in India', mimeo, Harvard University

About the authors

Shawn Cole is an Associate Professor in the Finance Unit at Harvard Business School. His research examines corporate and household finance in emerging markets, with a focus on banking, microfinance, insurance, and the relationship between financial development and economic growth. He has worked in India, the Philippines, Indonesia, Vietnam, and South Africa.

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Leora Klapper is a Lead Economist in the Finance and Private Sector Research Team of the Development Research Group at the World Bank. Since joining the Bank as a Young Economist in 1998, she has published on entrepreneurship, access to finance, corporate governance, bankruptcy, and risk management. Her current research focuses on entrepreneurship and household finance, and measurements of financial inclusion. Prior to coming to the Bank she worked at the Board of Governors of the Federal Reserve System, the Bank of Israel, and Salomon Smith Barney. She holds a Ph.D. in Financial Economics from New York University Stern School of Business.

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