Cheap Credit and Incentives in Financial Institutions: The Case of Global Microfinance

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Abstract

We exploit shifting international relationships to analyze political shocks to the supply of financing for microfinance institutions (MFIs). MFIs whose host nations improve their relationships with the nations of their lenders receive more credit and enjoy reduced borrowing costs. These MFIs quickly hire more credit staff and increase lending in the medium-term, but portfolio quality and productivity decline. Compensation policies at subsidized MFIs display no evidence of rent extraction, as average wages remain stable. The emphasis on incentive pay increases, reflecting an appropriate response to the diminished termination risk for employees.

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The provision of credit to financial institutions at below-market interest rates is one of the primary tools used by governments and central banks to regulate and stimulate the broad economy. When cheap financing is provided, the benefits of injecting capital must be balanced against the costs of distorting market incentives for financial institutions to operate efficiently and make sound investments. Despite the widespread use of cheap credit, however, empirically analyzing its consequences is difficult. The allocation of subsidized financing may be endogenously related to country-wide economic conditions or to unobserved characteristics of the financial institutions receiving the influx of capital. In this paper, we investigate the effects of cheap credit on the lending activities, performance and compensation policies of microfinance institutions (MFIs) around the world. We employ a quasi-experimental approach based on the international relations between the host country of an MFI and the nations of its lenders. We show that improvements in these relations lead to the supply of politically-motivated subsidized financing that is plausibly unrelated to the characteristics of an individual MFI. In this sense, shifting political relationships may be viewed as an exogenous source of variation in the provision of cheap credit.

Given the international pervasiveness of cheap credit for financial institutions, which has been accentuated in recent years, it is important to understand its effects.[1] In particular, it is useful to know to what extent the subsidy generates additional lending and to what degree it is dissipated through lower productivity or captured by managers and employees at the financial institutions. We use the political shocks to the supply of credit to gauge the impact of subsidized financing by studying three basic issues. First, we assess whether financial institutions that receive below-market financing expand their lending (Bernanke and Blinder (1988), Kashyap, Stein and Wilcox (1993), Kashyap and Stein (2000)). We show that cheap credit leads to a quick increase in credit staffs and positive medium-

[1]Cheap credit may take the form of a reduced cost for government-guaranteed deposits (Gatev and Strahan (2006), Gatev, Schuermann and Strahan (2009)), central bank lending to financial institutions (Flannery (1996) and Artuç and Demiralp (2010)), direct support of government-owned banks (La Porta, Lopez-de-Silanes and Shleifer (2002) and Sapienza (2004)) or emergency bailouts (Gorton and Huang (2004) and Duchin and Sosyura (2010)).

term growth in the loan portfolios of MFIs. Second, we analyze the effect of the financial subsidy on the performance of lending institutions (Saunders, Strock and Travlos (1990), Hovakimian and Kane (2000) and Acharya and Yorulmazer (2008)). We find that subsidized MFIs subsequently have lower productivity (lending per credit officer) and make more non-performing loans. We find mixed results on whether the subsidy leads MFIs to charge lower rates to their customers. Third, we consider whether the shift in conditions generated by cheap credit changes compensation policies at affected financial institutions and leads to rents for employees (Hubbard and Palia (1995), Crawford, Ezell and Miles (1995), Black and Strahan (2001), and Cuñat and Guadalupe (2009)). We show that MFIs receiving low-cost funds make greater use of incentive pay and do not experience a change in average wages, in line with theories of optimal compensation.

Our analysis makes use of a unique proprietary data source with both operating and loan-level financial information on MFIs in 28 emerging economies. The global microfinance market has achieved considerable size — recent estimates place it as at least $65 billion in loans to 92 million borrowers[2]—and it is fast growing. MFIs are a rising form of financial intermediary in many developing markets. Moreover, the potential social impact of access to credit for the poor borrowers who make use of microfinance can be profound (Morduch (2000) and Pitt et al. (2003)). Microfinance has begun to receive sustained scholarly attention examining its impact (Karlan and Zinman (2008, 2010); Kaboski and Townswend (2008); Giné et al. (2010)). Most of this work has focused on the effects of microfinance on the ultimate borrowers. Our study, by contrast, investigates the operations and financing of the MFIs themselves. While MFIs are increasingly important in their own right, in their basic lending activities they also share many features in common with banks. Our analysis therefore has policy implications for the subsidization of financial institutions more broadly.

We first establish that an increased similarity in the voting patterns of two countries in

[2]Source: mixmarket.org, accessed December 2010.

the U.N. General Assembly is associated with reduced interest rates and greater quantities of loans between lenders and MFIs in those countries in the following year. Specifically, we make use of a well-known bilateral measure from the political science literature (Signorino and Ritter (1999)) that captures the 'macro' affinity between countries in regressions explaining 'micro' terms at the loan and MFI level. We find that the interest rate a lender charges an MFI falls and the loan amount increases when the lender's nation and the MFI's host country become politically closer. In this test, we include MFI-lender pair fixed effects, and we use MFI-year fixed effects to control for all unobserved changes in the MFI and in economic conditions and the demand for credit more broadly. This finding suggests that an improvement in the affinity between the country of the lender and the MFI's host country leads to a shifting out of the supply curve of financing: financing is provided on better terms.

We then aggregate across all of an MFI's current borrowing relationships and consider the weighted change in its political affinity across its full set of lenders. We find that MFIs with improved political affinities pay a lower average cost of funding. A one standard deviation increase in its average political shock leads to a 90 basis point decrease in the average weighted cost of financing for an MFI and an increase in the quantity of financing supplied that is 15% of the mean. Along with the loan-level results, this finding suggests that our affinity measure is a suitable proxy for studying the effects of a positive financing supply shock on the expansion, performance and compensation policies of MFIs.

Using this empirical strategy, we find that MFIs hire more credit officers in the year after they receive a positive political shock, but they only significantly expand their loan portfolios three years after the shock. This suggests that the funds received are substantial and significant and that the MFIs must gradually scale up to deploy them in lending; MFIs require time to build the organizational capital necessary to extend their lending operations.

We also show that in the first and second years following a positive political shift, an MFI experiences reduced portfolio quality. This indicates that loan underwriting and

monitoring may suffer during the expansion of operations. We find mixed results on the impact of a political shock on the average rate charged by an MFI to its customers. There is no clear evidence of a trickle-down effect from the lower cost of credit received by MFIs.

How should the compensation policies of a financial institution be affected by the provision of low-cost financing? One hypothesis is that the managers of the institution will use the subsidy to benefit themselves. Under this rent-extraction hypothesis, managers would receive higher wages and leave the institution less often, as it will have become a more attractive employer. Different implications emerge from an optimal contracting perspective. As Lazear (2000a,b) emphasizes, there are two basic forms of compensation: fixed wages with a termination risk and incentive pay that is continuous in output or effort. Both forms are widely used in financial firms (Qiu (2003) and Kempf, Ruenzi and Thiele (2009)). When a financial institution receives a subsidy, it is likely to expand its operations and increase the size of its credit staff, as we discussed above. This effect changes the relative attractiveness of the two forms of compensation; threatening underperforming workers with termination is much more appealing in a shrinking firm in which some employees will have to be let go in any case. In an expanding firm, by contrast, firing existing workers will require additional costly hiring and training. Thus, the optimal contracting hypothesis is that a financing subsidy should lead to fewer employee separations from the institution (as it is costly to hire new employees) and a shift in favor of incentive pay and away from fixed wages.

We find three main results in our study of compensation. Subsidized MFIs do experience fewer employee separations, as predicted by both the rent-extraction and optimal contracting hypotheses. MFIs receiving low-cost financing also make greater use of incentive pay and do not change the average wages of their employees. These last two findings favor the optimal contracting hypothesis and suggest that wholesale rent extraction by the employees of subsidized MFIs is not occurring.

Overall these results suggest that two broad points emerge from our evaluation of

subsidized financing. First, the subsidy is effective in increasing lending quantities in the medium-term, though it has an unclear impact on the price of credit for the ultimate borrowers, and it clearly generates some adjustment costs for financial institutions in the form of lower labor productivity and reduced loan quality. Second, managers of subsidized institutions are not using the cheap credit to extract rents that benefit themselves, and instead move towards high-powered incentive schemes.

Our results linking cheap financing, performance, and compensation policies have broad implications for the economics of financial institutions. Depressed long-run growth has been linked to the politically-motivated misallocation of loans (Gale (1991); Peek and Rosengren (2005); Hsieh and Klenow (2009)). Our analysis helps to underscore the relative costs and benefits of the very common practice of supplying lenders with funds at below-market costs.

The rest of the paper is organized as follows. Section 1 describes the microfinance setting and the data we use in the study, and our empirical specification is detailed in Section 2. Section 3 discusses our results. Section 4 concludes.

1 Empirical Setting

The global microfinance market consists of lending institutions that provide small loans to poor borrowers.[3] In this section, we succinctly review the subsidized financing aspect of MFIs, a particularly relevant feature in our investigation of the consequences of cheap credit for financial institutions.

[3]Detailed descriptions of the microfinance industry are becoming more widely available. See Cull, Demirguç-Künt, and Morduch (2007) for an industry description based on 124 MFIs drawn from a different source, and Karlan and Zinman (2010) for a study of a specific segment in microcredit, the cash loan niche. Garmaise and Natividad (2010) focus on the internal operations of MFIs and their similarity to traditional banks in a study of asymmetric information.

1.1 Financing MFIs

Relatively little is known about how MFIs finance their lending activities (Jansson (2003)). While anecdotal evidence suggests that MFIs receive capital injections from social entrepreneurs, NGOs, governments, and donors, the economic terms on which MFIs receive capital to invest in a lending portfolio have remained largely unknown due to lack of data. The MFI industry relies directly on subsidized financing for its everyday activities such as lending (Morduch (2000)). The stated social goals of MFIs facilitate their obtaining capital at below-market interest rates from many of their fund providers. MFIs, in turn, do not give away funds for free to their borrowers, as they incur various costs to select, serve, and monitor their clients. Although MFIs differ in the degree of their social orientation, access to finance and profitability are crucial to all MFIs, enabling them to accomplish their expansion goals in their untraditional, underserved segments of the financial services market.

While it may seem quite lucrative for MFIs to receive subsidized financing and extend loans with a mark-up, industry observers have pointed to two main arguments against an overreliance on subsidized financing. First, subsidized financing may dry up if the motivation of lenders of MFIs to provide funds to underserved segments withers (Morduch (2000)). The incentives of these fund providers may be driven by political or social motives not directly tied to MFI performance, so this is a reasonable concern. Second, subsidized financing may lead to inefficiencies on the part of MFIs, as these intermediaries become complacent in their ability to obtain cheap funds as subsidized finance providers crowd out private investors (Abrams and von Stauffenberg (2007)). We view these industry considerations as directly related to our study. First, we assess the impact of non-market considerations on the cost of funds for MFIs. Second, we investigate the extent to which subsidized financing may affect the performance of financial institutions. The relatively straightforward business and financing model of MFIs allows us to do this with clarity. In both these respects, the basic features of the microfinance industry make it an ideal setting for considering broader

questions about the impact of cheap credit on financial institutions more generally.

1.2 Data

Our main data source is a database of audited financial statements and selected operating variables on MFIs provided to us by MicroRate, a leading microfinance rating agency. The data cover 133 MFIs over the period 1997–2009. MicroRate collects information directly from MFIs, visiting their headquarters and branches as part of its evaluation services. The MFIs are drawn from 28 countries in Africa and Latin America, listed in Table I.

The MicroRate database provides audited information on both the financing and lending activities of the MFIs. Table II shows some summary statistics. The median portfolio of loans granted by an MFI is $7 million, and the median amount of financing received by an MFI in a given year is $0.6 million per lender, with a median of 5 lenders per MFI. Forty-nine percent of the loan financing obtained by MFIs is from foreign lenders, and these lenders represent 54% of the distinct institutions lending to MFIs.

Microfinance institutions target micro-scale entrepreneurs and poor borrowers as their main customers. The median size of a loan originated by an MFI is $620, and the median number of clients served in a given year is 13,950. The overall quality of MFI investments is high, with a median of 0.95 for the fraction of loans with less than 30 days past due.

The United Nations voting data we use to construct a measure of political affinity are drawn from Voeten and Merdzanovic (2009). This data set contains the roll call votes of all countries in the U.N. General Assembly over the entire sample period.

2 Empirical Specification

2.1 Financing Terms and Political Affinity

Many lenders to the microfinance industry choose to supply funds for non-market motives, and these motives may also affect the terms (e.g., price or quantity) of a loan given to an MFI. In particular, we test whether an improvement in the political ties between the country of the lender and the country of the borrower leads to improved financing terms. The terms a lender offers an MFI in period t can be modeled as

$$LoanTerm_t = a * S_{t-1} + b * U + \epsilon_t \tag{1}$$

where S_{t-1} measures the political affinity between the host nations of the MFI and the lender, U is a set of lender-specific characteristics and ϵ_t is an error term. For example, U may describe the lender's propensity to supply finance for a philanthropic motive.

We presume it is difficult to observe U, which may raise an issue from an econometric standpoint if the correlation between S_{t-1} and U is non-zero. For example, consider an MFI in a developing nation that receives funding both from the national aid agency of a European government and from a bank in a neighboring country. The MFI's host nation is likely to have a higher political affinity with the neighboring state than with the European country. On the other hand, the European aid agency may be extending the loan for charitable reasons (high U), while the neighboring bank may be purely profit-maximizing (low U). In this case, the correlation between S and U is negative and estimating a version of (1) without controls will lead to inappropriate parameter estimates if U is unobservable. Including a relationship fixed effect for this particular lender to the MFI will remove the influence of U. We implement this idea in Section 2.3.

We are also interested in the effects of political relationships on the average cost and total supply of an MFI's financings. We assume that in period t the MFI observes $S_{i,t-1}$ for each potential lender j and then contracts with N lenders to supply funds in period $t+1$. As in (1), the terms from each lender j will depend on lagged $S_{j,t}$ and U_i. We propose that S evolves in the following simple way:

$$S_{i,t} = S_{i,t-1} + \omega_{i,t} \tag{2}$$

where $\omega_{i,t}$ describes an independent shock to the political relationship between the country of the MFI and the country of its lender. We presume that in period t the MFI initiates k new relationships with lenders and continues $N-k$ existing relationships. For convenience here, we label lenders $j \in \{1, ..., k\}$ the new lenders, and we assign all lenders a relative share of $1/N$ of the funds provided. From (1) and (2), the average interest rate paid by the MFI is given by

$$AvgLoanRate_{t+1} = \left(\frac{1}{N}\right)\sum_{j=1}^{N} LoanRate_{j,t+1} = \left(\frac{1}{N}\right)\sum_{j=1}^{N}(a * S_{j,t} + b * U_j + \epsilon_{j,t+1})$$

$$= \left(\frac{1}{N}\right)\sum_{j=1}^{k}(a * S_{j,t-1} + b * U_j) + \left(\frac{1}{N}\right)\sum_{j=k+1}^{N}(a * S_{j,t-1} + b * U_j) \tag{3}$$

$$+ a * \left(\frac{1}{N}\right)\sum_{j=1}^{N}\omega_{j,t} + \left(\frac{1}{N}\right)\sum_{j=1}^{N}\epsilon_{j,t+1}$$

An analogous equation describes the total quantity of loans supplied. In an MFI-level analysis, it is not feasible to include relationship-level fixed effects. We now consider how best to estimate a, the effect of political relationships on loan terms.

2.1.1 Regressing loan terms on average S leads to biased estimates

Attempting to estimate a by regressing the average rate on the average S for the MFI is inappropriate for two reasons:

1. The first term in (3) arises from new lenders that the MFI selects in period t. The MFI may select lenders in a way that is correlated with unobserved characteristics of the MFI itself. (For example, an MFI with improving prospects may choose a different class of lenders). This clearly generates an endogenous selection problem.

2. Each of the $S_{j,t-1}$ may be correlated with U_j, as we discussed above. Without relationship fixed effects, we cannot control for the unobservable characteristics of the lenders, and the composition of the lender pool may differ greatly from one MFI to another. This composition effect would also lead to inconsistent estimates.

As an example of the second problem, consider an MFI that loses access to many of its foreign lenders as a result of worsening political relationships between its home country and those of the lenders. The MFI responds to this development by seeking more funds from domestic lenders. The foreign lenders may have philanthropic motives that lead them to offer attractive financing terms in general, while domestic lenders may provide funding on market terms. This MFI will experience an increase in average S (as $S = 1$ for all domestic lenders), while average loans terms will deteriorate as domestic funding becomes relatively more important. (A similar example arises from any shift from Western lenders to emerging market lenders in neighboring countries.) A regression of loan terms on average S would incorrectly indicate that increased political affinity leads to worse lending terms, because it ignores the composition of the lending pool (and the omitted U_j variables).

2.1.2 Regressing loan terms on the lagged average political shock experienced by the borrower generates appropriate estimates

With appropriate country-year controls, however, it is plausible that *last year's* bilateral international political shocks $\omega_{j,t}$ are uncorrelated with the U_j (time invariant characteristics of the lenders) and with $\epsilon_{j,t+1}$ (current period unobservable MFI-level characteristics). Under these assumptions, the average political shock experienced by the MFI across its *previous* set of lenders

$$\tilde{\Omega}_t = \left(\frac{1}{N}\right) \sum_{j=1}^{N} \omega_{j,t} \tag{4}$$

is uncorrelated with the unobserved variables. As we elaborate in Section 2.4, our approach for the MFI-level analysis is therefore to regress the loan terms on the lagged average political shock Ω_t. Following the previous example of an MFI that shifted to more domestic borrowing, under this approach there would be a negative average political shock arising from the worsening relationships with the set of foreign lenders. (There is no change in the affinity with the domestic lenders.) This specification would therefore correctly describe the detrimental impact that this negative political shock has on average loan terms. In general, by focusing on the shock to an MFI's fixed set of lenders last year, this method controls for the composition of the group of lenders.

2.2 Measuring Political Affinity

We adopt the popular Signorino and Ritter (1999) S variable as our measure of affinity between countries. S is a summary measure that describes the similarity between the voting patterns of two countries in the U.N. General Assembly. For a given country I voting on resolution r, we set $P_r^I = 1$ if they vote "Yes", $P_r^I = 0$ if they vote "Abstain" and $P_r^I = -1$

if they vote "No". For countries I and J in year t, we define

$$S_{I,J,t} = 1 - \frac{2\sum_{r=1}^{R} |P_r^I - P_r^J|}{2R}, \tag{5}$$

where R is the total number of resolutions in year t. (Resolutions for which at least one of the countries cast no vote are excluded.) The measure S therefore lies between -1 and $+1$, with higher values of S reflecting more similar voting patterns between the two countries. We have $S_{I,I,t}$=1: the affinity between a country and itself is always 1.

Votes in the General Assembly rarely have direct political implications (unlike those in the Security Council), and may thus be viewed as a reasonable measure of the true preferences of states, since strategic considerations in General Assembly voting are typically quite slight. Following the political science literature, we therefore view S as a measure of the true affinity between two countries. Table III provides details on S for a set of country pairs in 1997, the first year of the sample. Figure 1 displays as an example the varying affinity of El Salvador with France and Mexico over time.

2.3 The Impact of Political Shifts on Lender-Borrower Relationships

To test if political affinity affects the loan contracts offered to MFIs, we analyze the financing terms of loans provided by lender j (based in country J) to MFI i (based in country I). Following (1), we estimate

$$LoanTerm_{i,j,t} = \alpha + \beta * (S_{I,J,t-1}) + \gamma * controls_{i,t} + \delta_{i,j} + \lambda_{i,t} + \sigma_{i,j,t}, \tag{6}$$

where $LoanTerm_{i,j,t}$ is either the interest rate or amount of the loan provided by lender

j to MFI i in year t, $S_{I,J,t-1}$ measures the political affinity between countries I and J in the previous year, $controls_{i,t}$ is a vector of loan-level controls, $\delta_{i,j}$ is a fixed effect for the relationship between the MFI and the lender, $\lambda_{i,t}$ is a MFI-year fixed effect and $\sigma_{i,j,t}$ is an error term. We estimate robust standard errors double clustering at both the level of the MFI and the country of the lender. We are primarily interested in the coefficient β that details the effect of S on financing terms.

Equation (6) makes use of MFI-lender relationship fixed effects, so it therefore describes for a given relationship how changes in political affinity at the level of two countries affect interest rates. The inclusion of MFI-year fixed effects (subsuming country-year fixed effects) ensures that the estimated impact of S is unrelated to any general political or economic phenomena occurring in the MFI's country. Moreover, these fixed effects also control for any changes to the MFI's overall condition in a year. This specification therefore focuses only on differences amongst the various terms offered to a given MFI by its different lenders in a given year. We analyze how these terms change with the shifting political affiliations of the various lenders' countries to the MFI home nation.

For example, consider an El Salvadorian MFI that borrows from both a Mexican lender and a French lender. The specification (6) with loan rates as the dependent variable explores the extent to which closer Mexico-El Salvador affinity and reduced France-El Salvador affinity in the previous year leads to relatively better rates this year to the MFI from its Mexican lender and relatively worse rates from its French lender. The specification (6) with loan quantities as the dependent variable provides evidence on the impact of affinity on quantity.

A finding that affinity both reduces interest rates and increases quantities is evidence that political considerations can lead to a shifting out of the supply curve of financing for MFIs. The fact that much of the motivation for lending to MFIs is non-market driven suggests that it is reasonable to suppose that political considerations may play a role in determining both the interest rates charged and the quantity supplied.

Controlling for any nationwide effects on El Salvador in a given year, an improvement in the affinity between Mexico and El Salvador can be regarded as exogenous from the perspective of a specific MFI. Each MFI is small and changes in its financial condition or growth opportunities are unlikely to have an impact on El Salvador's international outlook and relationships. Our identifying assumption is that shifts in El Salvador's bilateral relations with other countries are uncorrelated with any time-varying characteristic of a given MFI that is omitted from the right hand side controls of (6).

2.4 Political Changes and Financing Terms for an MFI

Aggregating the loan-level effects of S suggests that the average cost of credit and amount of financing supplied to an MFI may depend on changes in the political relationships between its lenders' countries and the MFI's host nation. As we discussed in Section 2.1, to analyze this question, for each MFI every year we calculate the weighted average shock to S that it experiences over its portfolio of loans in the previous year. The theoretical average political shock $\tilde{\Omega}$ described in (4) has the following empirical counterpart:

$$\Omega_{it} = \frac{\sum_j (S_{I,J,t} - S_{I,J,t-1}) l_{i,j,t}}{\sum_j l_{i,j,t}}, \tag{7}$$

where i is an MFI identifier, t is the year, $l_{i,j,t}$ is the dollar-value of the loan extended by lender j (in country J) to MFI i (in country I) in year t. The variable $\Omega_{i,t}$ describes the weighted average political shock experienced by MFI i in year t, where the weights are given by the loan amounts it receives from each lender.

If variation in lagged S is associated with a change in interest rates and loan quantities, then $\Omega_{i,t}$ will have an impact on the average financing terms received by MFI i in year $t+1$: an average improvement in the affinity measure across an MFI's portfolio of loans should lead to both less expensive and greater quantities of financing. Following (3), to test this

hypothesis, we estimate

$$AvgRate_{i,t+1} = \eta_1 + \theta_1 * \Omega_{i,t} + \kappa_1 * controls_{i,t+1} + \mu_i + \nu_{I,t+1} + \xi_{i,t+1}, \tag{8}$$

where $AvgRate_{i,t+1}$ is the weighted average interest rate paid by MFI i in year $t+1$, $\Omega_{i,t}$ measures the political shock experienced by the MFI in the previous year, $controls_{i,t+1}$ is a vector of MFI-level controls, μ_i is an MFI-level fixed effect, $\nu_{I,t+1}$ is a country-year fixed effect at the level of the MFI's country I and $\xi_{i,t+1}$ is an error term. Robust standard errors are clustered at the level of the MFI. In a similar spirit, we also consider the impact of political shocks on the quantity of loans supplied:

$$TotalLoans_{i,t+1} = \eta_2 + \theta_2 * \Omega_{i,t} + \kappa_2 * controls_{i,t+1} + \mu_i + \nu_{I,t+1} + \zeta_{i,t+1}, \tag{9}$$

where $TotalLoans_{i,t+1}$ is the total quantity of loans received by MFI i in year $t+1$ and $\zeta_{i,t+1}$ is an error term.

To continue the previous example, if El Salvadorian MFI A receives most of its loans from a Mexican lender, and El Salvadorian MFI B receives most of its loans from a French lender, then an improvement in Mexico-El Salvador affinity and a decline in France-El Salvador affinity would be predicted to lead to both a greater quantity and a lower cost of financing for MFI A (which has received a positive political shock) and a reduced quantity and higher cost of financing for MFI B (which has received a negative political shock).

Specifications (8) and (9) describe the effect on an MFI's financing of a political shock to its fixed loan portfolio in the previous year. These specifications control for any changes an MFI makes this period to its group of lenders and they are unaffected by all time-invariant unobservables within its lending relationships. The identifying assumption is that,

controlling for all country-year effects in the MFI's host nation, all shocks to the bilateral relationships between an MFI's country and the states of its lenders are uncorrelated with unobserved characteristics of the MFI.

2.5 Subsidized Credit and MFI Scale of Operations, Performance and Incentives

We are mainly interested in the implications that subsidized credit may have for the scale of operations, performance and incentives of MFIs. We therefore estimate equations of the following form:

$$MFIcharacteristic_{i,t+1} = \psi + \chi * (\Omega_{i,t}) + \rho * controls_{i,t+1} + \tau_i + \upsilon_{I,t+1} + \phi_{i,t+1}, \qquad (10)$$

where $MFIcharacteristic_{i,t+1}$ is some attribute of MFI i in year $t+1$, $\Omega_{i,t}$ is the average political shock experienced by MFI i in the previous year t, $controls_{i,t+1}$ is a vector of controls, τ_i is an MFI fixed effect, $\nu_{I,t+1}$ is a country-year fixed effect at the level of the MFI's country I and $\phi_{i,t+1}$ is an error term.

We view $\Omega_{i,t}$ as a proxy for the provision of subsidized credit in this reduced form equation. This approach allows us to estimate the causal effect of subsidized financing on the operations and investment of an MFI. We are essentially contrasting MFIs in a given country that received a positive political shock (due to the nationalities of their lenders) in the *previous* year from those in the same country that received a negative political shock in the previous year. Given that MFIs are small organizations with a median loan portfolio of $7 million, they are unlikely to influence the diplomatic stances of their host nations. We therefore argue that variation in the international relations between states may be viewed

as plausibly exogenous from the perspective of any given MFI.

2.6 Country-Year Fixed Effects

All the equations (6), (8), (9), and (10) include country-year fixed effects for each MFI. (In the case of equation (6) the country-year fixed effects are subsumed in the MFI-year fixed effects.) We are therefore controlling for any unobserved changes occurring over time in the MFI's home state. For example, the country-year fixed effects control for any nationwide impact of an economic crisis, changes in property rights, freedom of the press, general political character and macroeconomic condition of the country, etc. Identification in our empirical specifications arises solely from changes in the bilateral relationships between an MFI's country and the nations of its lenders. In our running example, any broad impact of a national election on El Salvador's economic performance and governance will be netted out by the country-year interaction fixed effects. For an El Salvadorian MFI that has a relationship with a Mexican lender, it is the relative impact of this election on Mexico-El Salvador affinity compared to its impact on El Salvador's ties with the nations of other lenders that generates the variation in Ω. Our approach essentially contrasts multiple El Salvadorian MFIs in the same year that have been differentially affected by changes in El Salvador's relations with their lenders' countries.

3 Results

3.1 Political Affinity, Lender-MFI Relationships and Loan Terms

Given the non-market motivation of many loans to MFIs, it is plausible that the changing political affiliations between countries may affect loan terms. Approximately, 15% of the loans in our sample are made at U.S. dollar interest rates below those of U.S. government

securities of equivalent maturity. We label these debt contracts as "social loans." In our first test we relate the provision of social loans to changing affinity: we estimate equation (6) with a binary indicator for social loans as the dependent variable. The regression utilizes the following loan-level controls: the number of semesters in which the MFI and its lender have had a loan relationship and MFI age. We also include MFI-lender relationship fixed effects and MFI-year fixed effects to control for all changes the condition of the MFI (including, for example, the performance of the MFI, the state of the economy and the overall demand for credit). Due to the multiple dimensions of fixed effects, we estimate via ordinary least squares (OLS) rather than using a binary model such as logit. The result, displayed in the first column of Table IV, shows that in a given relationship, an increase in the lagged political affinity of the home nations of the lender and MFI results in a significant (t-statistic=3.19) increase in the probability that the loan provided is a social loan. Reported t-statistics are robust and double-clustered at the level of the MFI and the country of the lender. The magnitude of the effect is quite large: a one-standard-deviation increase in S results in an increase of 17.8% in the probability of a social loan.

Changes in affinity also affect interest rates more broadly. We estimate equation (6) with the U.S. dollar interest rate premium as the dependent variable and detail the results in the second column of Table IV. (We use forward exchange rates from Datastream to convert rates from loans priced in other currencies. The rate premium is calculated by subtracting the maturity-matched U.S. Treasury bond rate from the U.S. dollar rate on the loan.) An increase in last year's political affinity is associated with a significant decrease (t-statistic=-2.02) in the interest rate charged. A one-standard-deviation increase in S leads to a drop of 2.1 percentage points in the rate charged. This is a large effect relative to the mean and median rate of 8.0%.

As a graphical representation of this result, we display in Figure 2 the Venezuela-Peru affinity and the rate premium (in U.S. dollar terms) a Venezuelan lender charged a

Peruvian MFI over maturity-matched U.S. Treasuries. The graph shows a broadly negative relationship between affinity and the rate charged. While this is only an example and does not include country-year fixed effects or other controls, it illustrates our finding that improved bilateral relations at the country level lead to lower rates charged to MFIs.

Political shocks also have an impact on the loan quantity. We estimate equation (6) with the loan amount in U.S. dollars as the dependent variable. The results, described in the third column of Table IV, show that an increase in last year's political affinity is associated with a significant increase (t-statistic=2.58) in the loan quantity supplied. A one-standard-deviation increase in S leads to an increase of $806,000 in the loan, which is substantial compared to the average loan size of $1.3 million. Taken together, these results suggest that positive political shocks lead lenders to supply financing on more favorable terms, at a greater quantity and with lower cost.

The basic intuition for the results in this section is that the supply of finance may be influenced by political factors. Earlier work has shown that political ties affect government capital allocation (Faccio, Masulis and McConnell (2006)). The funding of microfinance is often done for non-market reasons, so one might expect that political affinity plays a large role in determining loan rates and amounts. The results in this section clearly establish that this is so.

The findings describe how loan terms in a given MFI-lender relationship are influenced by international political affinity, controlling for any country-year effects in the MFI's host nation (and for MFI-year effects). They suggest that an MFI's overall cost of capital may in part be determined by variations in political affiliations, which is the next topic we consider.

3.2 MFI Cost of Capital and Affinity

As we described in Section 2.1, an MFI's average political affinity can be influenced by its choice of lenders (endogenous selection) and may be correlated with unobserved lender characteristics (the composition effect). Regressing an MFI's average interest rate or total loans received on its lagged average political shock Ω, however, yields a consistent estimate of the impact of affinity on loan terms.

To determine if improved political connections reduce rates at the MFI level, we estimate equation (8) regressing the average interest rate paid by the MFI (weighted by loan amount) on the lagged average political shock, MFI-level and country-year fixed effects.

We find, as documented in the first column of Table V, that an increase in its lagged average political shock leads to a significant decrease (t-statistic=-3.33) in an MFI's average interest rate. (Reported t-statistics are robust and clustered at the level of the MFI.) A one-standard-deviation increase in the lagged average political shock is associated with a 90 basis point decrease in the average rate paid. As displayed in the second column of Table V, the result is broadly unchanged if the following MFI-level controls are included in the specification: portfolio Herfindahl (the Herfindahl dollar-weighted concentration measure of its loans across the categories of commercial, agricultural, small business, gold guarantee, consumer, housing, solidarity, village banking and other), leverage (the ratio of total liabilities to total equity) and MFI age. The implication of these findings is clear: a favorable shift in the relations of its home country with those of its current international lenders leads to substantially lower interest rates for an MFI.

The result described in the third column of Table V shows that an increase in the average political shock experienced by an MFI significantly increases (t-statistic=2.20) the total loans it receives. A one-standard-deviation increase in the average political shock leads to a \$1.56 million increase in total loans received, which is substantial relative to an average

of $10.42. The inclusion of MFI-level controls has relatively little impact on this finding, as shown in the fourth column of Table V. At the MFI level, a positive political shock leads to a shifting out of the supply curve, with both lower rates and greater quantities of finance supplied. The relationship-level findings of the previous section aggregate at the MFI level.

MFIs are small and are very unlikely to influence their home countries' foreign policies, so reverse causality is not a concern. Variation in its lagged average political shock is thus generated by plausibly exogenous political shocks that influence an MFI's cost of capital and supply of financing. The results in this section therefore allow us to view the lagged political shock as a proxy for the provision of subsidized financing: we have shown that it has a significant effect on both the average rate paid and total amount of financing supplied to an MFI, but it is unlikely to be correlated with MFI-level unobservables such as quality of investment opportunities, etc. In this sense, MFIs that benefit from a positive political shock have simply experienced good fortune that has given them access to cheap credit.

3.3 Cheap Credit and Expansion of Operations

The results described in the previous subsection indicate that positive political shifts lead to an MFI's being supplied with cheap credit. In this subsection we analyze the implications of this cheap credit for the scale of MFI operations.

We first consider the effect of cheap credit on the hiring policies of MFIs. We regress the number of credit officers on the average political shock in the previous year and we include as control variables the MFI's leverage, portfolio Herfindahl and age, as well as MFI and country-year fixed effects, as described in specification (10). The result, as described in the first column of Table VI, shows that a positive lagged average political shock results in a significant (t-stat=2.78) increase in the number of credit officers; MFIs make use of subsidized credit to expand their operations by hiring more credit officers.

Does cheap credit have a sustained impact on the number of credit officers? To gauge the timing of the effect, we include two additional lags of the political shock as explanatory variables in (10). This regression, documented in the second column of Table VI, demonstrates that a positive shock to the supply of finance does indeed have a medium-term impact on an MFI. We find that the political shocks from one, two and three years previously all have a significant impact on the current number of credit officers (the t-statistics are 2.28, 2.04 and 2.16, respectively). A one-standard deviation increase in the three years prior average political shock leads to 19.7 new credit officers, relative to a mean of 111.0. In general, it is clear that MFI's receiving favorable financing terms do hire more credit officers, in both the short- and medium-terms.

Do MFIs benefitting from cheap credit also expand their lending? To answer this question, we regress the MFI loan portfolio on the previous year's average political shock and the usual controls and display the results in the third column of Table VI. (Here we consider purely the dollar volume of loans — we turn below to the quality of the loans issued.) We find that the average political shock of the prior year has an insignificant effect on the size of the loan portfolio. The medium-term impact of the political shock appears to be most important; when the average political shocks of all three prior years are included, only the three years prior shock is significant (t-statistic=2.24), as detailed in the fourth column of Table VI. A one-standard deviation increase in this shock is associated with a \$6.4 million increase in the loan portfolio. This is substantial, given that the mean loan portfolio is \$26.5 million.

These findings provide some evidence on the lending mechanism of the credit channel (Bernanke and Blinder 1988) in emerging economies. Specifically, we show that supplying cheap credit to MFIs results in expanded lending three years later. There are usually two central impediments to empirical tests of the lending mechanism. The first is that it is often difficult to disentangle the causal impact of subsidized finance from the effects of the

economic conditions that prevail when it is granted. Cheap credit is frequently supplied at times of macroeconomic weakness. The provision of subsidized funding may thus not lead to increased lending because demand for credit is low during these periods and the number of attractive investment opportunities is small. The second difficulty is that the impact of the lending mechanism must be distinguished from that of the balance sheet mechanism. A reduction in central bank interest rates may simultaneously provide lenders with cheap financing and increase the value of the collateral held by borrowers. Any observed increase in the supply of credit may result from the improved position of borrowers, rather than arising from a special role for lenders in expanding financing.

Our approach is not subject to either of these concerns. Our regressions make use of country-year fixed effects, so they control for current economic conditions. We are simply contrasting the lending activities of MFIs that received a financing subsidy to those of MFIs in the same country that did not. The country-year fixed effects also control for any changes to borrower balance sheets or to the demand for credit. For our set of MFIs, we thus present clean evidence of the credit channel mechanism: subsidized credit to financial institutions results in a substantial lending expansion three years in the future.

Of course, MFIs differ from banks in their relatively restricted access to credit lines and central bank funds, so we may expect the lending mechanism to affect MFIs and banks differently. Indeed, the gradual expansion of lending we find contrasts with Paravisini's (2008) finding of a quick (3 month) increase in loan-making by banks benefitting from a government credit program in Argentina.[4] One possible explanation for the different results is that the funds supplied by the program Paravisini studies are limited and inframarginal for the receiving banks. For the MFIs in our sample, however, external financing by lenders is by far their most important source of funding, and the political shocks we describe have a significant impact on their marginal cost of capital. MFIs that receive a large subsidy

[4]Gan (2007), Khwaja and Mian (2008), and Khwaja, Mian and Zia (2010) are three other recent studies that assess the credit channel.

to finance appear to require some time to shift their operations to accommodate a lending expansion; in fact, we find that they significantly increase their credit staff. As we show, the eventual increase in lending is quite substantial.

Our results on the credit channel thus have the greatest relevance for countries in which MFIs are an important source of financing, and for markets in which banks resemble MFIs in having only limited access to credit lines and central bank support. In these locales, our findings suggest that government-supplied cheap credit may result in increased lending by financial institutions only with a lag of several years, as these institutions may require an adjustment period before achieving an expansion of operations.

Do the MFIs expand their credit staff or their lending portfolio more quickly? We regress the log of the dollar value of loans issued by the MFI per credit officer on the average political shock in the prior year and the standard controls. The result, as outlined in the fifth column of Table VI, is that a positive average political shock in the previous year is associated with a significant decrease (t-statistic=-3.15) in log of loans per credit officer. This suggests that MFIs move more quickly to increase their credit staff, relative to the amount of lending. Including two additional lags of the average political shock generates a clear conclusion, as described in the sixth column of Table VI: all the shocks lead to negative and significant effects (the t-statistics for lags one through three are -1.73, -1.97 and -4.01, respectively) on the log of loans per credit officer.

These results suggest that the provision of subsidized financing leads to an adjustment period for MFIs. They hire new credit officers and gradually train them. Initially this leads to a reduction in loan production per credit officer, but in the long-run, presumably, the newly hired credit officers will become as productive as their peers. Overall, the central point of Table VI is that cheap credit causes MFIs to expand both their credit staffs and loan portfolios, with the former increasing more rapidly than the latter.

3.4 Cheap Credit and Performance

Results described in the previous subsection show that subsidized MFIs gradually expand their operations. In this subsection we consider whether the provision of cheap credit has an impact on performance.

We begin by examining the effect of a political shock on portfolio quality, the dollar-weighted fraction of loans that are fewer than 30 days past due. We regress portfolio quality on the lagged average political shocks and the standard controls. The result, displayed in column one of Table VII, shows that the political shock in each of the two previous years has a negative and significant effect on portfolio quality. As an MFI uses subsidized financing to hire new credit officers and expand its loan portfolio, the quality of its loans suffers.

Cheaper credit, on the other hand, should be expected to have a direct positive impact on the gross margin (interest and fee income minus interest and fee expense), as it directly reduces expenses. The results documented in the second column of Table VII confirm this hypothesis: the average political shock at each of the three lags significantly increases an MFI's gross margin.

From a social welfare perspective, it is important to know if a subsidy to MFIs results in lower rates for its borrowers. If rates to borrowers are determined competitively, it is not clear that cheap credit to MFIs will have any influence on the rates they charge. On the other hand, if MFIs seek to maximize borrower welfare subject to meeting a zero-profit constraint, then it might be that low-cost financing enables them to offer lower rate loans to their clients. We analyze this issue by regressing the average rate paid by the MFI's clients on the average political shock experienced by the MFI in the three previous years. As displayed in the third column of Table VII, we find no significant effect at a lag of one year. At a lag of two years, there is a positive and significant effect (t-statistic=2.10), while at a lag of three years there is a negative and significant effect (t-statistic=-1.79). We do

not have much detail on borrower characteristics, so these findings cannot be interpreted in a straightforward way to imply that subsidized MFIs increase or decrease rates overall. There may be a shift in borrower composition after the supply of cheap credit, so it may well be that affected MFIs are lending to borrowers with different characteristics. Nonetheless, this finding does provide some evidence that there is unlikely to be a clear and sustained trickle-down effect from the subsidy of the MFI to lower rates paid by its borrowers.

In the fourth column of Table VII, we show the results from regressing average loan size on the MFI's previous political shocks. Loan size is often viewed as a proxy for borrower wealth. We find no evidence of a shift towards larger or smaller loans. We also consider whether the financing or performance outcomes we analyze differ in a way that is related to the for-profit or not-for-profit orientation of the MFI, a distinction that is sometimes argued to be important in the microfinance literature. In unreported results, we find no significant differences between the two groups. This may be due to the social orientation of even for-profit MFIs and the need for not-for-profit to maintain financial sustainability.

3.5 Cheap Credit and Incentives

We now examine whether cheap credit affects the internal personnel policies and incentives of MFIs. Broadly, as Lazear (2000a,b) argues, there are two basic compensation plans: fixed wages with termination for poor performance and incentive pay that is continuous in a performance measure. These may be viewed as substitute compensation schemes. Cheap credit has an impact on the relative attractiveness of these two options. In particular, consider a setting in which employees (e.g., credit officers) acquire some firm-specific human capital over time, perhaps as a result of training. If a firm is contracting, it will likely be forced to terminate some existing employees as they are no longer needed to produce. In this case, the use of fixed wages with the threat of termination may be attractive to the firm, as it must terminate some employees in any case. If the firm is expanding, however, it

will need to increase the size of its labor force through hiring. In this case, firing existing employees is very costly, as they must be replaced with new workers who require training. That is, an expanding firm would do better to keep its existing workers and encourage them to exert effort through incentive pay, rather than incur training costs by terminating them.

If cheap credit leads to expanding operations, as we showed above, then financial institutions that receive subsidized financing should shift their compensation to incentive pay and away from fixed wages; the costs associated with termination have become too high. In an optimal contracting environment, therefore, we should expect that the provision of attractive financing leads to both fewer terminations and an increased use of incentive pay.

There is an alternative to the optimal contracting hypothesis. It may be that the employees of subsidized financial institutions are capable of extracting the rents generated by the cheap credit. In this case, we would expect to see that the employees of subsidized firms are less likely to quit their jobs, as it is more attractive to work at these firms. As quitting and firing are difficult to distinguish empirically, the rent-extraction hypothesis and the optimal contracting hypothesis both essentially predict the same thing: fewer employer-firm separations at subsidized firms. The two hypotheses do differ, however, in their compensation predictions. The rent-extraction hypothesis predicts that employees at subsidized firms will receive higher compensation, though it makes no clear prediction about the form this compensation will take. Under the optimal contracting hypothesis there should be a shift to incentive pay and away from fixed wages, but the average level of compensation should be unaffected. We will test the two hypotheses by considering the impact of cheap credit on employee separations and compensation.

3.5.1 Employee Turnover and Separations

For many of the MFIs in the MicroRate sample, data is available on the number of new employees hired and the number of old employees who separated from the firm. We first

test the prediction that firms receiving subsidized credit will experience fewer employee separations. (As is common in labor studies, we cannot distinguish between firings and quits (Lane, Isaac and Stevens, 1996)). Under both the optimal contracting and rent-extraction hypotheses, MFIs receiving cheap financing would be expected to retain more of their employees since firing is particularly costly for expanding organizations. We define employee turnover to be the sum of new hires and worker separations, and we regress the ratio of turnover to total staff on three lags of the average political shock and the usual controls. The result, displayed in the first column of Table VIII, shows that the political shock from three years prior has a negative and significant (t-statistic=-4.46) effect on the turnover rate, while the coefficients on the political shocks from one and two years previously are insignificant. This finding is consistent with the gradual medium-term expansion of MFIs benefitting from cheap credit that we describe in Table VI. Over a three-year period, subsidized MFIs increase their staff and loan portfolio and reduce turnover.

In the second column of Table VIII we detail the results from regressing the ratio of separations to total staff on the lags of the political shocks and the controls. We find that the average political shock from three years prior has a negative and significant (t-statistic=-3.85) effect on the separation rate, while the coefficients on the first two lags of the political shock are again insignificant. Taken together, these results clearly show that there is much greater medium-term employee stability in MFIs that enjoy below-market financing. What effect does cheap credit have on compensation? We now turn to that question to distinguish between the optimal contracting and rent-extraction hypotheses.

3.5.2 Compensation and Incentive Pay

The rent-extraction hypothesis suggests that employees at subsidized firms will prefer to remain working at the MFI (as we showed above) and will use the strengthened financial position of their employer to demand greater wages. To test this hypothesis, we regress

average wages per employee on the lagged political shocks and the controls. As we document in the first column of Table IX, at all lags the average political shock has an insignificant effect on wages. This finding is not in consonance with the central prediction of the rent-extraction hypothesis — employees at subsidized MFIs do not appear to reap personal wage benefits from the cheap funds received by their employers.

Under the optimal contracting hypothesis, expanding subsidized MFIs will shift from using fixed wages with firing risk (now unattractive given the MFIs' need for more, not fewer, employees) to incentive pay that depends continuously on output or effort. The MFIs in our sample make use of both incentive-based (variable) pay and fixed compensation for their credit officers. To test the optimal contracting hypothesis, we regress the ratio of incentive pay to fixed wages on the lagged political shocks and controls. We find, as shown in the second column of Table IX, that an increase in the political shock three years prior is associated with a positive and significant (t-stat=3.21) increase in the incentive pay ratio, while the political shocks at lags of one and two years have insignificant coefficients. A one-standard deviation in the three-year lagged political shock leads to an increase in the incentive pay ratio that is 25.2% of the mean. Subsidized MFIs adopt a much more incentive-focused compensation plan for their credit officers in the medium term, at the same time that employee separations are greatly reduced. The evidence on separations, average wages and incentive pay favors the optimal contracting hypothesis: MFIs that receive cheap credit shift to incentive pay and reduce the separation rate of their employees, while leaving average compensation unchanged. These findings indicate that MFIs enjoying low-cost financing undertake efficient changes to their compensation policies in the medium-term.

Our results suggest that banks and other financial institutions that receive cheap credit would do well to shift to a greater focus on incentive pay as the termination risk faced by their managers recedes. Of course, this result describes the direct causal impact of the financing subsidy itself. If subsidized institutions are selected for assistance because of their overall

weakness (as is likely in many cases), then they may plan to contract in any case, in which event the termination risk motive for managers would still be very strong and there would be no need for a shift to incentive pay. Our findings suggest, however, that an institution benefitting from a financial subsidy should make greater use of incentive pay than it would have in the absence of the subsidy.

4 Conclusion

In this paper we study the impact of below-market financing on the loan-making activities, performance and compensation practices of MFIs around the world. We make use of changing cross-country affinities to generate political shocks to the cost of credit for MFIs. In a relationship-level analysis, we demonstrate that an increase in affinity leads to a greater quantity of debt supplied and a reduction in the rate paid by an MFI to a given lender. MFIs that benefit from overall improved relations between their home country and the nations of their previous lenders receive more financing and enjoy a lower cost of funds. We find that MFIs that receive subsidized financing quickly increase their credit staffs and lend more in the medium-term. The subsidy does, however, result in lower productivity and a downward shift in portfolio quality. We find that employees of subsidized MFIs do not extract rents —compensation shifts appropriately to a greater emphasis on incentive pay, while average wages remain stable.

More broadly, our results suggest that the extension of easy credit by a government or central bank should not be viewed solely as a mechanism to accomplish macroeconomic goals such as increased lending. The availability of subsidized financing can lead to changes within firms in their productivity, employee relations and compensation schemes. The transformation of these lenders may have a longer-term impact that extends far beyond the credit expansion.

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Figure 1: International Affinity and Bilateral Relations

This figure shows the international affinity measure S (described in equation (5)) of El Salvador-Mexico and El Salvador-France, constructed using U.N. General Assembly votes.

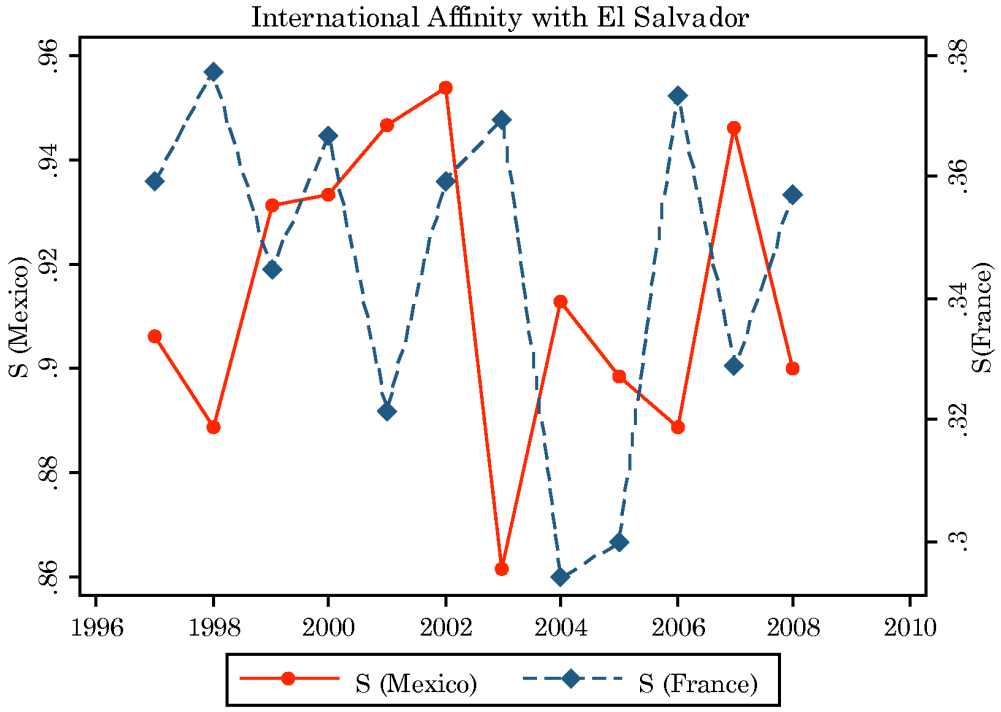

Figure 2: Affinity and Interest Rate Premium: Venezuelan Lender and Peruvian MFI

This figure shows the international affinity measure S (described in equation (5)) of Venezuela-Peru and the rate premium (in U.S. dollar terms) a Venezuelan lender charged a Peruvian MFI over maturity-matched U.S. Treasuries.

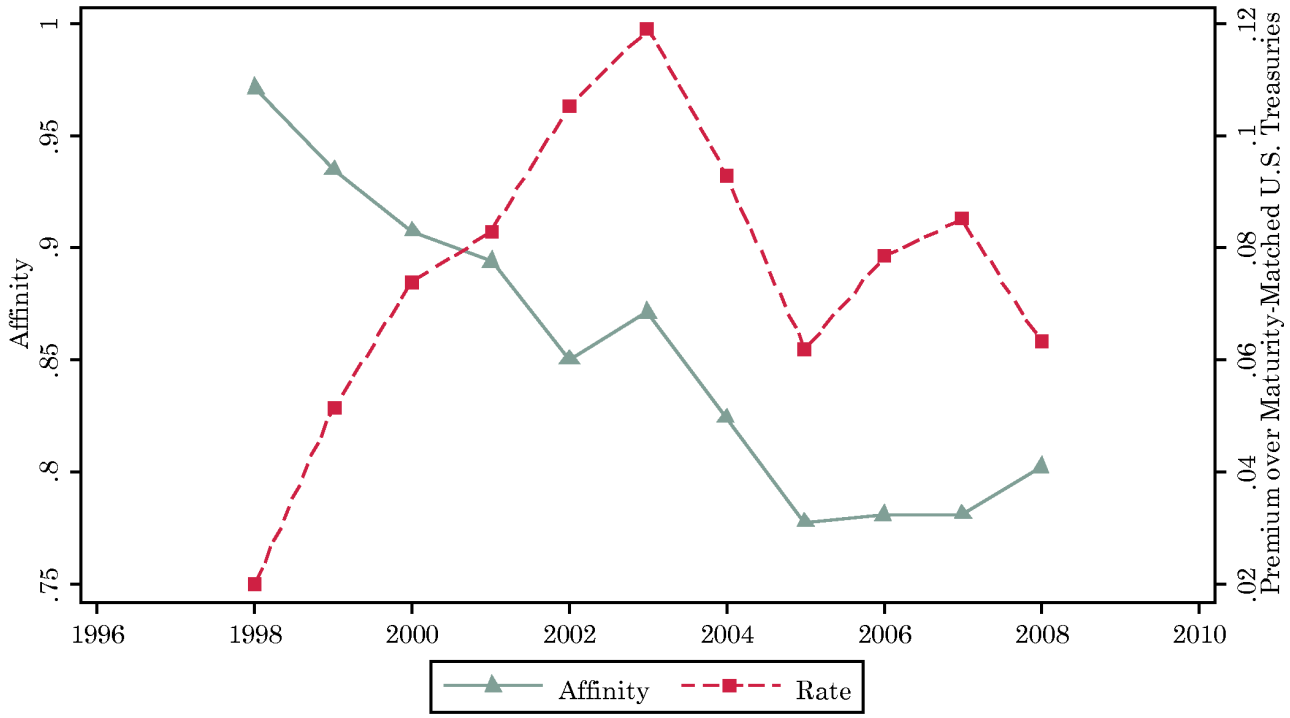

Table I: Countries of Lending and Borrowing Institutions

MicroRate's database includes information on 598 lenders and 133 MFI borrowers of funds to be used for microfinance, a total of 13,337 end-of-semester outstanding loans between 1997 and 2009. MicroRate records the country of origin of the MFIs but not the country of lenders. We construct this variable by interviewing MicroRate officers and conducting searches on the lenders' websites and other publicly available sources.

Lending	**Borrowing**
Argentina	Argentina
Australia	Benin
Austria	Bolivia
Bangladesh	Brazil
Belgium	Colombia
Bolivia	Dominican Republic
Brazil	Ecuador
Canada	Egypt
Chile	El Salvador
Colombia	Ethiopia
Costa Rica	Guatemala
Dominican Republic	Honduras
Ecuador	Kenya
Egypt	Malawi
El Salvador	Mexico
Ethiopia	Morocco
Finland	Nicaragua
France	Nigeria
Georgia	Panama
Germany	Paraguay
Guatemala	Peru
Haiti	Rwanda
Honduras	Senegal
Italy	South Africa
Kenya	Tanzania
Kuwait	Tunisia
Liechtenstein	Uganda
Luxembourg	Uruguay
Mexico	
Morocco	
Netherlands	
Nicaragua	
Nigeria	
Norway	
Panama	
Paraguay	
Peru	
Portugal	
Russia	
South Africa	
Spain	
Switzerland	
Tanzania	
Togo	
Trinidad and Tobago	
Tunisia	
Uganda	
United Kingdom	
United States of America	
Venezuela	

Table II: Summary Statistics

The unit of observation is a microfinance institution (MFI) in a given year. Average interest rate is the quantity-weighted average of nominal interest rates on outstanding loans received by MFIs, translated into a dollar interest rate using forward exchange rates from Datastream. Total loans received is the sum over all outstanding loans, expressed in millions of dollars. Average political shock Ω is defined in equation (7) and constructed using U.N. voting data compiled by Voeten and Merdzanovic (2009) and available at `http://dvn.iq.harvard.edu/dvn/dv/Voeten`. Average funds per lender is the total loans received by an MFI divided by the number of distinct fund providers. Share of foreign lenders is the fraction of these lenders that are based in a country foreign to that of the MFI; analogously, share of foreign loans is the sum of foreign loans over total loans. Operational, credit, and incentive variables are compiled by MicroRate from its client MFIs. Portfolio quality is the fraction of the portfolio composed of loans with less than 30 days past due. Average loan size refers to the loans made by MFIs to their clients. Average rate charged to clients is defined as interest and fee income over total loan portfolio. Turnover is the number of hires and separations in a year divided by the number of employees. Separations is the number of employees leaving the MFI (i.e., being fired or quitting). Incentive pay is the ratio of incentive pay (e.g., depending on loans made) on fixed wages. Portfolio Herfindahl is the HHI concentration index of an MFI's portfolio according to the lending categories: microcommerce, agriculture, small business, consumer, housing, solidarity, village, and other. Leverage is total liabilities over total equity. Age of MFI is in years.

Variable	**Median**	**Mean**	**Std.Dev.**	**Min.**	**Max.**	**n**
Average interest rate	0.08	0.07	0.06	−0.21	0.31	825
Total loans received	3.18	10.42	21.43	0.002	196.39	825
Average political shocks	0.00	−0.01	0.08	−0.54	0.68	825
Average funds per lender ($ millions)	0.59	1.30	2.34	0.00	38.71	825
N. of lenders	5.00	6.55	5.18	1.00	31.00	825
Share of foreign lenders	0.54	0.54	0.29	0.00	1.00	825
Share of foreign loans	0.49	0.51	0.34	0.00	1.00	825
N. credit officers	50.00	110.97	220.70	1.00	3486.50	803
$ Loan per credit officer (log)	5.23	5.07	0.97	2.37	7.38	803
Gross margin ($ millions)	1.69	4.81	12.20	0.01	262.71	825
$ Portfolio ($ millions)	7.02	26.46	52.08	0.06	440.37	825
Portfolio quality	0.95	0.84	0.28	0.00	1.00	811
Average loan size ($ 000)	0.62	0.76	0.64	0.04	3.81	795
Average rate charged to clients	0.28	0.32	0.15	0.07	1.25	825
Employee turnover	0.48	0.52	0.24	0.00	1.82	426
Separations over total staff	0.15	0.17	0.13	0.00	0.95	426
Average wages	6.71	7.15	3.42	0.65	27.76	797
Incentive pay	0.15	0.52	3.97	0.00	80.00	825
Portfolio Herfindahl	0.70	0.69	0.25	0.22	1.00	725
Leverage	2.12	2.41	1.86	0.02	16.66	815
Age of MFI	10.00	10.87	6.15	0.00	28.00	825

Table III: Country-Pair Variation in Affinity

Measure S, as defined in equation (5), is shown for selected country pairs in 1997, the initial year of our sample period.

	Cuba	El Salvador	France	Mexico	Peru	Russia	U.K.	U.S.A.	Venezuela
Cuba	1.00	0.68	0.13	0.75	0.71	0.45	0.06	-0.51	0.71
El Salvador	0.68	1.00	0.36	0.91	0.95	0.58	0.30	-0.22	0.95
France	0.13	0.36	1.00	0.36	0.40	0.57	0.93	0.29	0.37
Mexico	0.75	0.91	0.36	1.00	0.87	0.56	0.31	-0.27	0.90
Peru	0.71	0.95	0.40	0.87	1.00	0.57	0.33	-0.26	0.97
Russia	0.45	0.58	0.57	0.56	0.57	1.00	0.53	-0.03	0.57
U.K.	0.06	0.30	0.93	0.31	0.33	0.53	1.00	0.36	0.33
U.S.A.	-0.51	-0.22	0.29	-0.27	-0.26	-0.03	0.36	1.00	-0.26
Venezuela	0.71	0.95	0.37	0.90	0.97	0.57	0.33	-0.26	1.00

Table IV: International Affinity and the Supply of Credit in Loan Relationships

The table presents estimates of equation (6) at the loan level. The dependent variables are all based on loan contract terms. Social loan is a dummy equal to one for whether the interest rate of the loan is lower than the U.S. risk-free interest rate (U.S. Treasury bonds matching the maturity of the MFI loans). Interest rate is expressed in U.S. dollars using forward exchange rates from Datastream and adjusted by maturity subtracting from it the U.S. Treasury bond rate matching the maturity of the MFI loans. The loan-level controls include the number of semesters in which the MFI and its lender have had a loan relationship, the age of MFI expressed in years, as well as an unreported constant. Fixed effects for each MFI-lender pair, and fixed effects for each MFI-year combination are included. Standard errors are heteroskedasticity-robust and clustered separately by MFI and by country of lender. Robust t-statistics are reported in parentheses.

Dependent Variable:	**Social loan** (0/1)	**Interest rate** in decimal points	**Quantity** in $ 000
	(IV.1)	(IV.2)	(IV.3)
S_{t-1}	0.333^{***}	-0.040^{**}	1513.039^{***}
	(3.19)	(−2.02)	(2.58)
Relationship	−0.015	0.006^{***}	22.336
	(−1.26)	(2.94)	(0.48)
Age of MFI	0.018^{***}	-0.011^{***}	89.632^{***}
	(3.00)	(−11.53)	(4.32)
MFI×Lender Pair fixed effects	Yes	Yes	Yes
MFI×Year fixed effects	Yes	Yes	Yes
R^2	0.64	0.61	0.63
n	13265	13265	13265
N. of clusters (MFI)	130	130	130
N. of clusters (country of lender)	47	47	47

***, **,* are 1%, 5% and 10% levels of significance, respectively. t-statistics based on clustered standard errors are shown in parentheses.

Table V: International Affinity and the Supply of Credit for MFIs

The observations are at the MFI-year level. The table presents panel fixed-effects regression estimates of equation (8) and (9), modeling the influence of the average political shock on the average interest rate paid by the MFI to its lenders and the quantity of loans received by the MFI. Average interest rate is the quantity-weighted average of nominal interest rates on outstanding loans received by MFIs. Total loans received is the sum over all outstanding loans, expressed in millions of dollars. The controls include portfolio Herfindahl, leverage, MFI age, as well as an unreported constant. Fixed effects for each MFI, and fixed effects for each country-of-MFI×year combination are included. Standard errors are heteroskedasticity-robust and clustered by MFI. Robust t-statistics are in parentheses.

Dependent Variable:	**Average Interest Rate** in decimal points		**Total Loans Received** in $ millions	
	(V.1)	(V.2)	(V.3)	(V.4)
Average political shock	-0.107^{***}	-0.094^{**}	18.568^{**}	19.180^{**}
	(-3.33)	(-2.40)	(2.20)	(2.09)
Portfolio Herfindahl		-0.011		3.200
		(-0.65)		(0.48)
Leverage		-0.001		3.659^{***}
		(-1.03)		(3.11)
Age of MFI		-0.005^{***}		-0.122
		(-7.68)		(-0.29)
Fixed effects:				
MFI	Yes	Yes	Yes	Yes
Country of MFI×Year	Yes	Yes	Yes	Yes
R^2	0.81	0.80	0.73	0.75
n	679	596	679	596
N clusters (MFI)	123	109	123	109

***, **,* are 1%, 5% and 10% levels of significance, respectively.

t-statistics based on clustered standard errors are shown in parentheses.

Table VI: Cheap Credit and the Expansion of Operations

The observations are at the MFI-year level. The table presents panel fixed-effects regression estimates of equation (10), modeling the influence of average political shocks from years $t-1$, $t-2$, and $t-3$ on dependent variables capturing the expansion of MFIs in a given year t. Dependent variables are described in Table II. Control variables and fixed effects are exactly as in Table V. Standard errors are heteroskedasticity-robust and clustered by MFI. Robust t-statistics are in parentheses.

Dependent Variable:	**Number of Credit Officers**		**Portfolio in $ millions**		**$ Loans per Credit Officer**	
	(VI.1)	(VI.2)	(VI.3)	(VI.4)	(VI.5)	(VI.6)
Average political shock$_{t-1}$	184.776***	385.478**	41.068	67.882	−1.001***	−2.527*
	(2.78)	(2.28)	(1.57)	(0.74)	(−3.15)	(−1.73)
Average political shock$_{t-2}$		423.206**		117.792		−1.435*
		(2.04)		(1.58)		(−1.97)
Average political shock$_{t-3}$		235.235**		76.836**		−0.789***
		(2.16)		(2.24)		(−4.01)
MFI-year controls	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects:						
MFI	Yes	Yes	Yes	Yes	Yes	Yes
Country of MFI×Year	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.69	0.79	0.62	0.66	0.58	0.63
n	608	418	616	418	608	418
N clusters (MFI)	109	89	111	89	109	89

***, **,* are 1%, 5% and 10% levels of significance, respectively. t-statistics based on clustered standard errors are shown in parentheses.

Table VII: Cheap Credit and Performance

The observations are at the MFI-year level. The table presents panel fixed-effects regression estimates of equation (10), modeling the influence of average political shocks from years $t-1$, $t-2$, and $t-3$ on dependent variables capturing the performance of MFIs in a given year t. Dependent variables are described in Table II. Control variables and fixed effects are exactly as in Table V. Standard errors are heteroskedasticity-robust and clustered by MFI. Robust t-statistics are in parentheses.

Dependent Variable:	**Portfolio Quality**	**Gross Margin**	**Av.Rate Charged**	**Average Loan Size**
	(VII.1)	(VII.2)	(VII.3)	(VII.4)
Average political shock$_{t-1}$	-0.573^{**}	31.247^{**}	0.694	-0.592
	(-2.08)	(2.30)	(1.62)	(-0.62)
Average political shock$_{t-2}$	-0.258^{*}	30.378^{**}	0.454^{**}	-0.232
	(-1.67)	(2.16)	(2.10)	(-0.26)
Average political shock$_{t-3}$	0.042	15.083^{*}	-0.133^{*}	0.085
	(0.56)	(1.97)	(-1.79)	(0.18)
MFI-year controls	Yes	Yes	Yes	Yes
Fixed effects:				
MFI	Yes	Yes	Yes	Yes
Country of MFI×Year	Yes	Yes	Yes	Yes
R^2	0.64	0.73	0.72	0.42
n	411	418	418	414
N clusters (MFI)	89	89	89	88

***, **,* are 1%, 5% and 10% levels of significance, respectively.

t-statistics based on clustered standard errors are shown in parentheses.

Table VIII: Cheap Credit and Employment Termination Risk

The observations are at the MFI-year level. The table presents panel fixed-effects regression estimates of equation (10), modeling the influence of average political shocks from years $t-1$, $t-2$, and $t-3$ on dependent variables capturing the employment policies of MFIs in a given year t. Dependent variables are described in Table II. Control variables and fixed effects are exactly as in Table V. Standard errors are heteroskedasticity-robust and clustered by MFI. Robust t-statistics are in parentheses.

Dependent Variable:	**Employee Turnover**	**Separations/ Total staff**
	(VIII.1)	(VIII.2)
Average political shock$_{t-1}$	0.070	0.012
	(0.13)	(0.04)
Average political shock$_{t-2}$	1.105	0.559
	(1.41)	(1.07)
Average political shock$_{t-3}$	-0.869^{***}	-0.460^{***}
	(-4.46)	(-3.85)
MFI-year controls	Yes	Yes
Fixed effects:		
MFI	Yes	Yes
Country of MFI×Year	Yes	Yes
R^2	0.44	0.46
n	288	288
N clusters (MFI)	75	75

***, **,* are 1%, 5% and 10% levels of significance, respectively.

t-statistics based on clustered standard errors are shown in parentheses.

Table IX: Cheap Credit and Incentives

The observations are at the MFI-year level. The table presents panel fixed-effects regression estimates of equation (10), modeling the influence of average political shocks from years $t-1$, $t-2$, and $t-3$ on dependent variables capturing the incentive of MFI officers in a given year t. Dependent variables are described in Table II. Control variables and fixed effects are exactly as in Table V. Standard errors are heteroskedasticity-robust and clustered by MFI. Robust t-statistics are in parentheses.

Dependent Variable:	**Average Wages**	**Incentive Pay**
	(IX.1)	(IX.2)
Average political shock$_{t-1}$	0.894	4.835
	(0.20)	(0.82)
Average political shock$_{t-2}$	2.058	0.584
	(0.60)	(0.31)
Average political shock$_{t-3}$	−1.520	1.562***
	(−0.98)	(3.21)
MFI-year controls	Yes	Yes
Fixed effects:		
MFI	Yes	Yes
Country of MFI×Year	Yes	Yes
R^2	0.68	0.19
n	411	418
N clusters (MFI)	89	89

***, **,* are 1%, 5% and 10% levels of significance, respectively.

t-statistics based on clustered standard errors are shown in parentheses.