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WORLD BANK GROUP

Executive Summary of Evaluation

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Background

Firms, especially small and medium enterprises (SMEs) state that access to credit is one of the main constraints on their growth.

The theoretical literature on credit information emphasizes that information sharing schemes can impact firm financing (see Pagano and Jappelli, 1993; Padilla and Pagano, 1997; Klein, 1992; Vercammen, 1995; Padilla and Pagano, 2000).

But the existing evidence is limited and, with few exceptions, subject to identification problems.

Objectives

This paper explores the impact of credit information sharing reforms on firm financing.

The study analyzes the effect of the establishment of private credit bureaus (CBs) and public credit registries (CRs) on five measures of firm financing:

- Whether the firm has a loan.
- The interest rate charged on the latest loan.
- The maturity of the latest loan.
- The share of working capital (WC) financed by bank lending.
- The share of fixed (FA) assets financed by bank lending.

Analysis

Data

The study combines data from the Doing Business, Enterprise Surveys, and World Development Indicators databases.

Doing Business: From internal raw data for the Getting Credit module the study is able to establish which countries have a credit bureau (CB) and/or credit registry (CR) and the year of their introduction. The study also collects data on the scope and quality of the credit information databases by using the depth of credit information index and the percentage coverage of CBs and CRs.

Enterprise surveys: The study uses firm-level data for over 75,000 firms from 63 countries across the period 2002-2013 where at least two surveys were conducted. The study focuses on five aspects of firms' access to finance:

- Whether they have a loan, line of credit or overdraft protection.
- Interest rate paid on the most recent loan.
- Maturity of the most recent loan.
- Fraction of working capital financed by banks.
- Fraction of fixed assets financed by banks

The study also obtains information on different firm characteristics including firm size, age, ownership type, exporter status, and sector

World Development Indicators: The study used country-level data on inflation, GDP growth, and credit to the private sector.

Methodology

The study's identification strategy relies on the fact that there are countries in the sample that introduced a CB/CR during the survey period and countries that never adopted such credit information sharing schemes.

The study uses a quasi-difference-in-difference approach to estimate causal impact:

- Treatment group consists of countries where a CB/CR was introduced in between two or more available survey years.
- Control group consists of countries with two or more years of Enterprise Surveys, but where CBs/CRs were never introduced.

The study includes country fixed effects to control for time-invariant country characteristics that could explain differences across countries in firms' access to finance.

The study includes time fixed effects to control for common time effects that can explain differences in firm financing over time (e.g., global crisis).

$$\textit{Finance Indicator}_{i,j,t} = \beta^{11}\,\textit{Credit information reform}_{j,t} + \beta^{12} X_{i,j,t} + \beta^{13} Z_{j,t} + \alpha^{1}_{j} + \gamma^{1}_{t} + \varepsilon^{1}_{i,j,t}$$

Finance indicator refers to the five measures of firm financing
Credit information reform is a dummy variable that take value 1 for treatment countries after reform and 0 otherwise.

X is a matrix of firm-level characteristics including firm size, age, ownership type, exporter status, and sector (manufacturing versus services).

Z refers to a matrix of country-level variables that might influence firms' access to finance (i.e., inflation rate, GDP growth rate, private credit/GDP).

α are the country fixed effects.

γ are time effects.

The credit information reform dummy can be thought of as the interaction between a treatment dummy (1 for treatment countries) and a post reform dummy (1 for years after reform).

The reform variables along with two way country and time fixed effects makes our empirical methodology akin to a difference-in-difference format, comparing countries with and without reform, and years pre- and post-reform.

ε are robust standard errors clustered at country-year level.

Sample

Country	**Survey years**	**Credit Bureau reform year**	**Credit Registry reform year**	**Control sample for CB regressions**	**Control sample for CR regressions**
Albania	2002, 2005, 2007			x	x
Angola	2006, 2010			x	x
Armenia	2002, 2005, 2009	2007	2003		
Azerbaijan	2002, 2005, 2009, 2013		2005	x	
Bangladesh	2002, 2007, 2013			x	
Belarus	2002, 2005, 2008, 2013		2007	x	
Benin	2004, 2009			x	
Bosnia-Herzegovina	2002, 2005, 2009, 2013		2007		
Botswana	2006, 2010				x
Bulgaria	2002, 2004, 2005, 2007, 2009, 2013	2005			
Burkina Faso	2006, 2009			x	
Cameroon	2006, 2009			x	
Cape Verde	2006, 2009			x	
China	2002, 2003, 2012		2004	x	
Colombia	2006, 2010				x
Congo	2006, 2010			x	x

Croatia	2002, 2005, 2007, 2009, 2013	2007			x
Czech Republic	2002, 2005, 2009	2002	2002		
Ecuador	2003, 2006, 2010	2005	2008		
Eritrea	2002, 2009			x	x
Estonia	2002, 2005, 2009				x
Georgia	2002, 2005, 2008, 2013	2005			x
Guatemala	2003, 2006, 2010		2004		
Guyana	2004, 2010			x	x
Hungary	2002, 2005, 2009				x
Indonesia	2003, 2009			x	
Jamaica	2005, 2010			x	x
Kazakhstan	2002, 2005, 2009, 2013	2006			x
Kenya	2003, 2007, 2013	2008			x
Kyrgyzstan	2002, 2003, 2005	2003			x
Latvia	2002, 2005, 2009		2008	x	
Lebanon	2006, 2013			x	
Lesotho	2003, 2009			x	x
Lithuania	2002, 2004, 2005, 2009			x	
Macedonia	2002, 2005, 2009, 2013	2011			
Madagascar	2005, 2009			x	
Malawi	2005, 2009			x	x
Mali	2003, 2007, 2010			x	
Mauritius	2005, 2009		2005	x	
Mexico	2006, 2010				x
Moldova	2002, 2003, 2005, 2009, 2013	2011			x
Mongolia	2004, 2009			x	
Country	**Survey years**	**Credit Bureau reform year**	**Credit Registry reform year**	**Control sample for CB regressions**	**Control sample for CR regressions**
Nepal	2009, 2013				x
Nicaragua	2003, 2006, 2010	2005	2007		
Niger	2005, 2009			x	
Panama	2006, 2010				x
Philippines	2003, 2009				x
Poland	2002, 2003, 2005, 2009				x
Romania	2002, 2005, 2009	2004			
Russia	2002, 2005, 2009	2006			x
Rwanda	2006, 2011	2010			
Senegal	2003, 2007			x	
Serbia-Montenegro	2002, 2005, 2009, 2013	2004			x
Slovakia	2002, 2005, 2009	2004			
Slovenia	2002, 2005, 2009, 2013	2008			
South Africa	2003, 2007				x
Sri Lanka	2004, 2011				x
Tajikistan	2002, 2003, 2005, 2008			x	x
Tanzania	2003, 2006, 2013			x	x

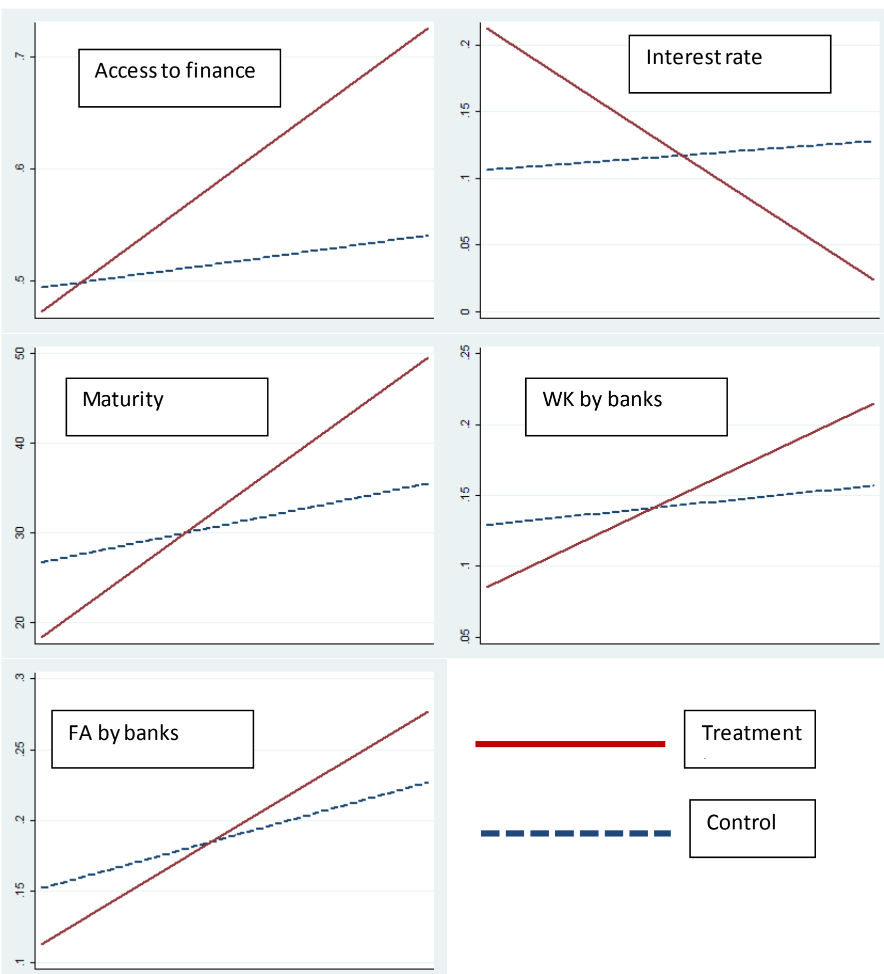
Uganda	2003, 2006, 2013	2009			x
Ukraine	2002, 2005, 2008, 2013	2007			x
Vietnam	2005, 2009			x	
Zambia	2002, 2007			x	x

Note: For the Credit Registry/Bureau reform regressions, the treatment sample consists of countries with a Credit Registry/Bureau reform in between two or more years of available Enterprise Survey data. The control sample consists of countries with two or more years of Enterprise Surveys, but where Credit Registry/Bureau do not exist.

Results

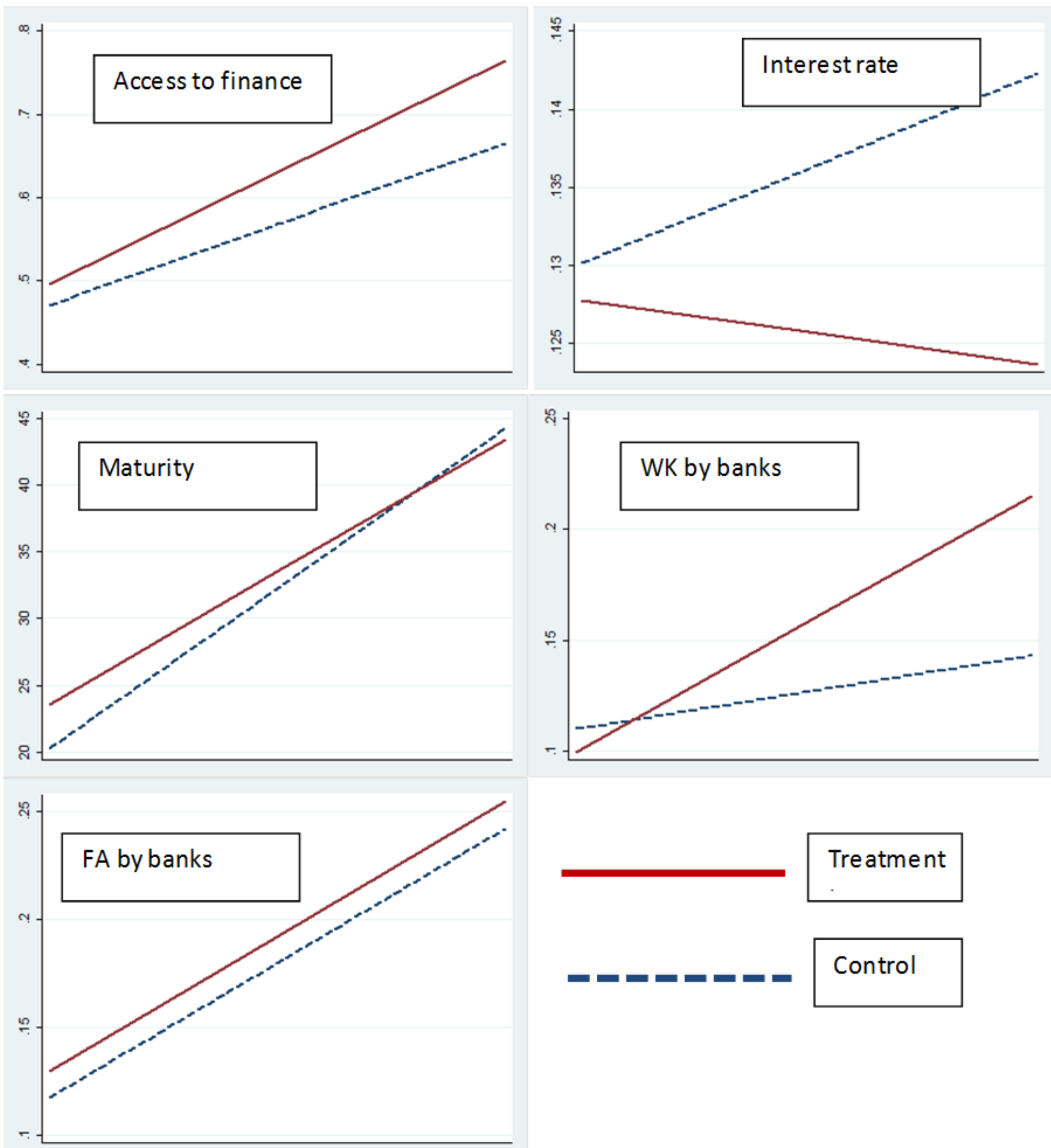
- **Impact of CBs**

Figure 1: Average trend of access variables for treatment and control countries in CB sample



- **Impact of CRs**

Figure 2: Average trend of access variables for treatment and control countries in CR sample



Conclusions and Recommendations

CB reforms but not CR reforms have an effect on firm financing.

After the introduction of a CB:

- A larger share of firms has access to finance.
- Interest rates drop.
- Maturity lengthens.
- The share of working capital financed by banks increases.

Effects of CB reform are more pronounced the greater the coverage of the CB and the scope and accessibility of the credit information sharing scheme.

Some evidence that CB reform effects are more pronounced for younger, smaller and more opaque firms.
