

# Banks, Credit, and Productivity Growth

Filippo Di Mauro, Fadi Hassan, and Gianmarco Ottaviano

## The Classical View

*Political economists say that capital set towards the most profitable trades, and that it rapidly leaves the less profitable non-paying trades.  
But in ordinary countries this is a slow process [...] In England, however, [...] capital runs as surely and instantly where it is most wanted, and where there is most to be made of it, as water runs to find its level.*

Bagehot (1873)

## Step 1: identifying key patterns in the data

- Firm level regressions in reduced form. Baseline specification:

$$\text{Credit Growth}_{i,t} = \beta_0 + \beta_1 \text{Productivity Growth}_{i,t} + \beta_2 \text{Demand}_{i,t} + \beta_3 \text{Leverage}_{i,t-1} + \delta_t + \gamma_i + \epsilon_{i,t}$$

- Parameter of interest:  $\beta_1$
- It is the elasticity of capital on productivity and captures how quickly capital relocates to most productive firms

## Additional specifications

- Looking at differences pre- and post-crisis
- Estimating elasticity by sector (NACE 2 digits)
- Specification also with sector-year dummies
- Regression with firm fixed effects to capture the effectiveness of credit allocation across the growth pattern of a firm (within firm credit allocation)

## Additional results

- Post-crisis elasticities (at time t) are higher in Italy but stable in Finland
- Elasticities for small firms (at time t) are higher in Italy, but do not change for Spain and Finland
- Elasticity of bonds' allocation is not higher (markets vs. banks)

## The allocative role of banks and finance

- A fundamental role of the banking and financial sectors is to allocate capital to its **most productive use**.
- This implies that banks and financial markets should invest capital in the sectors and firms that are expected to have higher returns and withdraw it from those with poor prospects.
- Does this happen? What do we know about these type of issues?

## Variables

### Credit sources:

- Loans
- Bonds

### Productivity measures:

- Marginal product of capital
- TFP
- Labor productivity
- Real value added

### Controls:

- Proxy of credit demand: Maximum rate of internally financed growth [ROA / (1- ROA)]
- Proxy of financial health: Leverage

## Baseline results on loans

Italy (2001-2012)

| Elasticity of loans respect to: | t       | t + 1  | t + 2     |
|---------------------------------|---------|--------|-----------|
| MPK                             | -0.3*** | 0.1*** | 0.005%*** |
| TFP                             | 0.8***  | 2.4*** | 0.1%      |
| Labor productivity              | 4.4***  | 3.4*** | 0%        |
| Real value added                | 11.9*** | 1.2%   | 0%        |

Finland (1999-2012)

| Elasticity of loans respect to: | t       | t + 1   | t + 2   |
|---------------------------------|---------|---------|---------|
| MPK                             | -15%*** | 5.8%*** | 1.3%*** |
| TFP                             | -10%*** | 11%***  | 1.7%*** |
| Labor productivity              | -5%***  | 6.7%*** | 1.2%*** |
| Real value added                | 3.5%*** | 8.9%*** | 1.1%*** |

Spain (2008-2012)

| Elasticity of loans respect to: | t        | t + 1   | t + 2  |
|---------------------------------|----------|---------|--------|
| MPK                             | -4.5%*** | 0%      | -1%*** |
| TFP                             | -3.5***  | 2.7%*** | 0.3%   |
| Labor productivity              | -3.3%*** | 2.1%*** | -0.6%  |
| Real value added                | 3.7%***  | 3.2%*** | 0.3%   |

## Next steps

- Extend these estimations to other countries
- Exploit the cross-country variation to identify the determinants of the elasticity
- Quantify how much the allocation of capital by banks and markets influence cross-country TFP differences