

Exploring relationships between Firms' Balance Sheets and the Macro Economy

Discussion on the paper by K.Carling,
T.Jacobson, J.Lindé, K.Roszbach

Carmen Martínez-Carrascal

Talk outline

- A global perspective
- The model
- Results
- Personal comments

Global perspective

- Goal: analyse link between real activity and firms' balance sheets
- Macro-micro model
 - Microeconomic model for firms' default rate and macroeconomic model for macro aggregates
 - Interaction between changes in firms' financial position and macro aggregates

The empirical model

Data: macro data: 1986Q1-2002Q4
micro data: 1990Q1-1999Q2

3 blocks:

1. VAR model for the macroeconomic variables

- Endogenous variables: Output, inflation, nominal interest rate and real exchange rate
- Exogenous variables: -foreign variables
-firms' default rate (t-1, t-2)

2. Default risk model

The empirical model (II)

2. Default risk model

- Logit model for the probability of default
- Explanatory vars: Idiosyncratic information (financial ratios and dummy variables) + macro variables

3. Model for balance sheet variables:

VAR model + macro variables

Results

- Significant impact of the firms financial position on real economy
- Impulse responses to a given shock state-dependent
 - Micro-macro model vs. VAR
 - Non-linearities induced by the default-risk model

Block 2: Logit model for the default risk

- Contribution of aggregate variables vs idiosyncratic information

- 1) R^2 comparison:
- Model 1: Balance sheet variables
 - Model 2: Model 1+ dummy variables
 - Model 3: Model 2+ macro variables

	Model 1	Model 2	Model 3
Aggregate R^2	0.26	0.36	0.94
Pseudo- R^2	0.16	0.37	0.39

- 2) Importance of credit status of firms at t to predict default at $t+1$

Block 2: Logit model for the default risk (II)

- Sectoral dummies?
- Real sales growth, log of real sales
- *Benito et al (2004)*: non-linearities in the default risk model
 - Cube of borrowing ratio
 - Dummy negative profitability
 - Dummy liquidity ratio below 2.5%

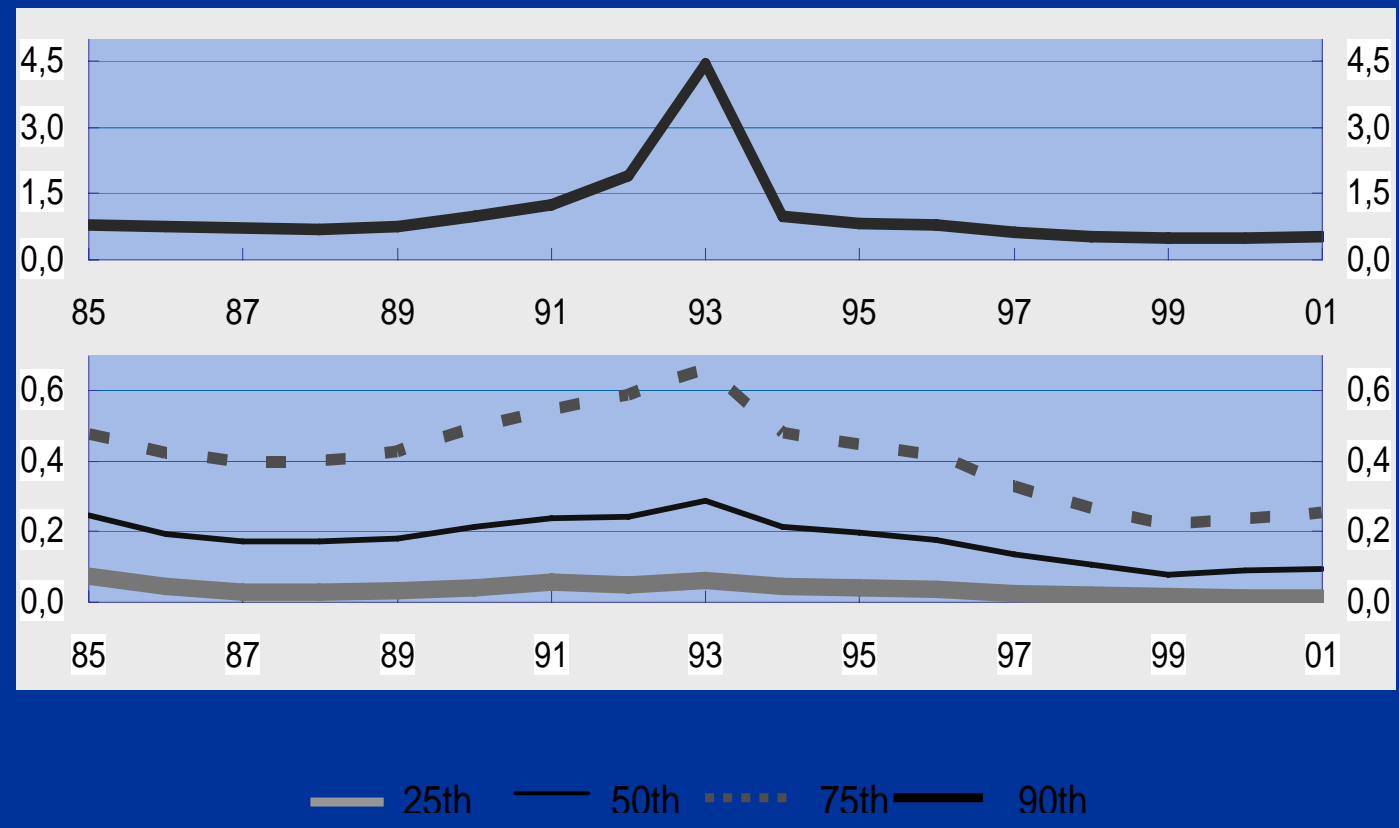
Block 3: Dependency of balance sheet ratios on aggregate activity

$$Y_{it} = \Theta_Y Y_{it-1} + \Theta_X X_{it} + u_t$$

- Main finding: idiosyncratic risk more relevant than aggregate shocks. Low role of aggregate shocks for explaining fluctuations in financial ratios
 - Perhaps true for the median firm / aggregate but not for those firms in more vulnerable situation?

Block 3: Dependency of balance sheet ratios on aggregate activity

Borrowing ratio percentiles



Block 3 & 2: Impact of aggregate shocks on balance sheet ratios and impact of financial ratios on probability of default

- Larger impact of aggregate shocks on financial ratios for those firms in a more vulnerable situation
- Higher impact on probability of default of financial ratios for companies in a more vulnerable situation (Benito et al, 2004)
- Policy experiments
 - Larger impact of aggregate shocks on probability of default through balance sheet ratios?
 - Impulse-response functions to a policy shock for 1998Q1 and 1991Q1 portfolio may be even more different.

