

Are all Mutual Guarantee Institutions the same?

Improving the economic allocation of public guarantees
to favour SMEs

SMEs' access to finance: the role of financial and non-financial intermediaries and capital markets. 11/12/2014
European Central Bank

Lorenzo Gai
Full Professor
University of Florence
lorenzo.gai@unifi.it

Federica Ielasi
Assistant Professor
University of Florence
federica.ielasi@unifi.it

Monica Rossolini
Assistant Professor
University of Milan Bicocca
monica.rossolini@unimib.it

Outline

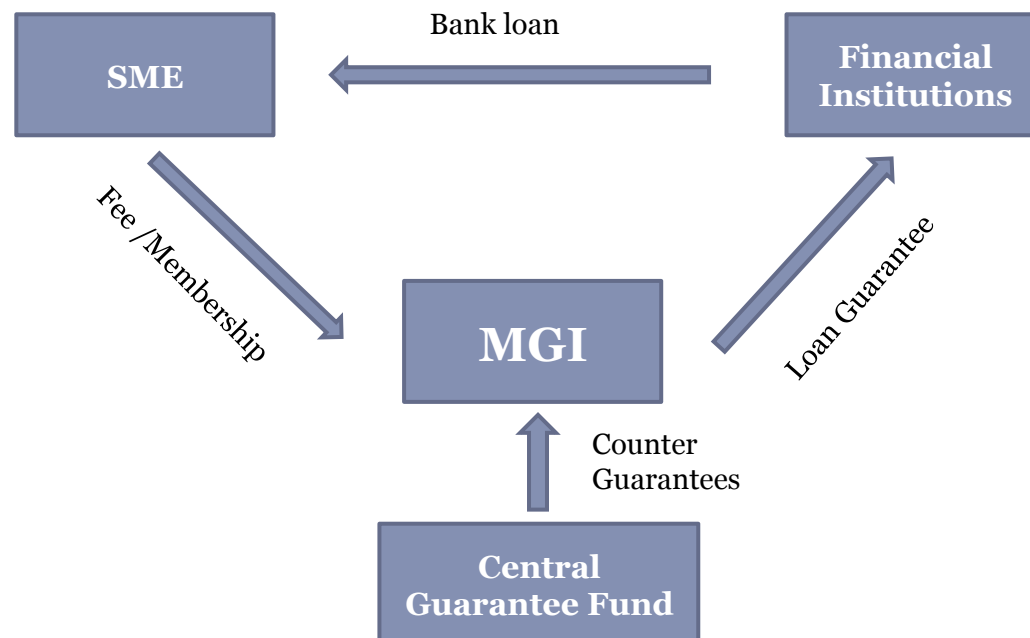
- Motivation and background
- Research questions
- Hypotheses
- Data and method
- Main results
- Conclusions

Motivation and background (1 / 3)

- **PCGSs seems to be the most common and effective government support program for SMEs' access to credit**, ahead of directed credit and interest rates or regulatory subsidies (Llisteri, 1997; Vogel and Adams, 1997; Beck et al., 2006; Beck et al., 2008; Klapper and Mendoza, 2008; Arping et al., 2010).
- PCGSs' mission:
 - **facilitating access to credit for firms that would otherwise be excluded from bank loans;**
 - carefully controlling the risk of public guarantees to **protect public resources** (Levitsky, 1997; Holton et al., 2013).
- PCGSs must then create both additionality and sustainability (OECD, 2013).

Motivation and background (2/3)

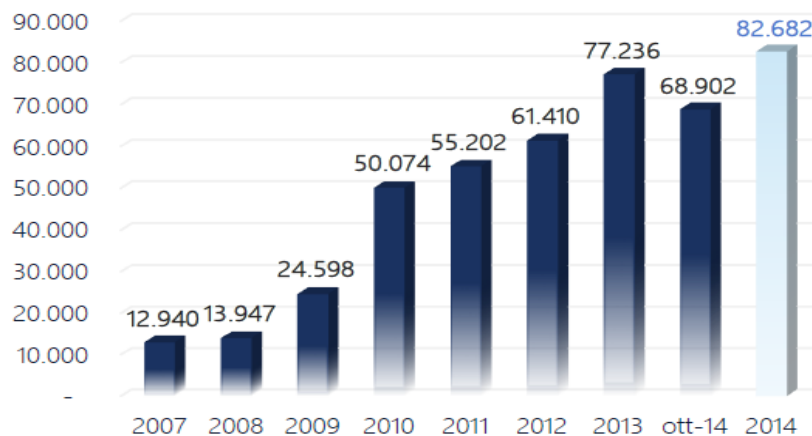
- An extensively used government instrument among PCGSs, especially in Europe and South America, is the **counter-guarantee** (ABD-OECD, 2014).
- In the Italian public guarantees system, the main tool for granting counter-guarantees is the **Central Guarantee Fund (CGF)**.



Motivation and background (3/3)

- In a context of high public indebtedness and strong growth in the scale and scope of CGF, **the need to control the risk of the counter-guaranteed portfolio (MGIs' portfolios) becomes relevant and urgent.**

Number of total applications



Number of direct guarantees and counter-guarantees



Research questions

- **Are Mutual Guarantee Institutions the same?**
- **Are their structural/operating profiles able to affect their risk taking behavior and their risk assessment attitude, favoring some opportunistic behaviors?**

Research hypotheses (1 / 4)

- **H1:** the level of capitalization of a MGI is negatively related to the default risk of public guarantees.
- **H2:** the level of financial liability of a MGI in granting guarantees is negatively related to the default risk of public guarantees.

Research hypotheses (2/4)

- **H3:** the degree of geographical concentration of a MGI is negatively related to the default risk of public guarantees.
- **H4:** the degree of industrial specialization of a MGI is negatively related to the default risk of public guarantees.

Research hypotheses (3/4)

- **H5:** the size of a MGI is negatively related to the default risk of public guarantees.
- **H6:** the volume of the counter-guaranteed portfolio of a MGI is positively related to the default risk of public guarantees.

Research hypotheses (4/4)

- **H7:** When the counter guaranteed portfolio increases, certain characteristics of MGIs (size, geographical concentration and capitalization) can influence the increase in the probability of default.

Data and method (1 / 3)

- The study analyses the counter-guaranteed portfolio of 12 Italian MGIs.
- The analysis includes the total number of issued guarantees covered by the CGF (in bonis and in default) as of the end of the first semester of 2011.
- The sample comprises **33,229 positions**.
- The total value of analysed guarantees exceeds 2 billion euros, of which about 55 million is in default.

Data and method (2/3)

Method: Logit regression

Dependent variable: dummy that takes value 1 for loans in default and zero for others

H1-H6

$$\text{Logit} \left[\frac{\pi}{1 - \pi} \right] = \beta_0 + \beta_1 \text{Loc} + \beta_2 \text{MultInd} + \beta_3 \text{Guar} + \beta_4 \text{CounGuar} + \beta_5 \text{Guar} / \text{Equ} + \beta_6 \text{CurrAcc} + \beta_7 \text{Adv} + \beta_8 \text{Un sec} +$$

$$+ \beta_9 \text{Other} + \beta_{10} \text{Sub} + \beta_{11} \text{Segr} + \beta_{12} \text{Tranc}$$

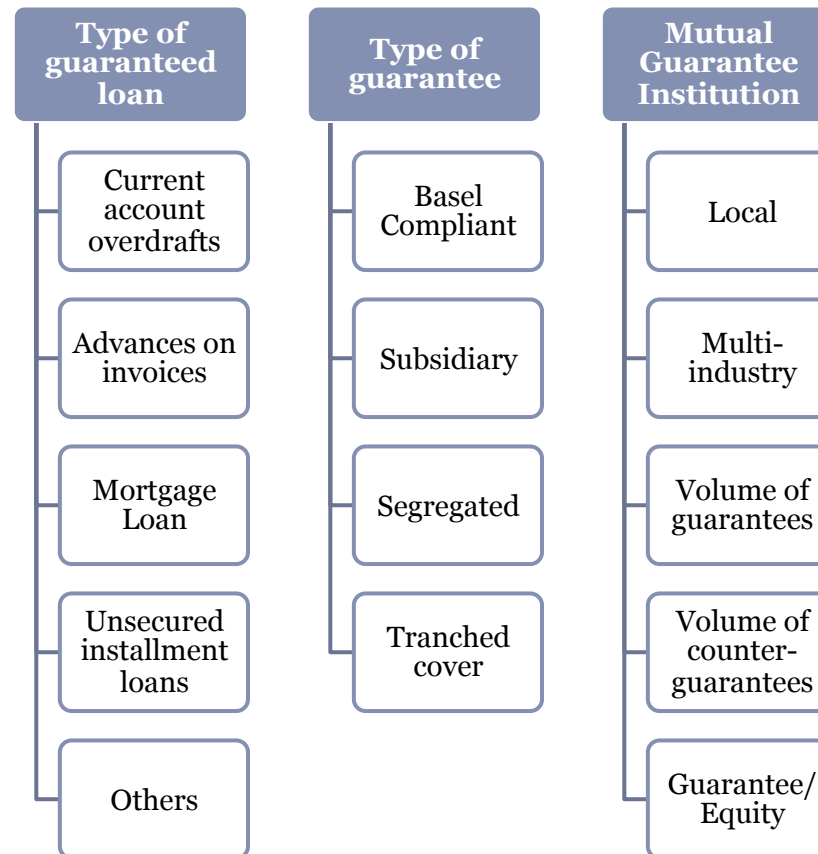
H7

$$\text{Logit} \left[\frac{\pi}{1 - \pi} \right] = \beta_0 + \beta_1 \text{Loc} + \beta_2 \text{MultInd} + \beta_3 \text{Guar} + \beta_4 \text{CounGuar} + \beta_5 \text{Guar} / \text{Equ} + \beta_6 \text{CurrAcc} + \beta_7 \text{Adv} + \beta_8 \text{Un sec} +$$

$$+ \beta_9 \text{Other} + \beta_{10} \text{Subs} + \beta_{11} \text{Segr} + \beta_{12} \text{Tranc} + \beta_{13} \text{CounGuar} * \text{Loc} + \beta_{14} \text{CounGuar} * \text{Guar} + \beta_{15} \text{CounGuar} * (\text{Guar} / \text{Equ})$$

Data and method (3/3)

- Variables influencing the probability of default:



Main results (1 / 2)

	I	
Loc	-1.5174	***
	(0.6190)	
Guar	-1.5947	***
	(0.3317)	
CounGuar	0.4089	***
	(0.0634)	
Guar/Equ	0.2641	***
	(0.0241)	
CurAcc	1.8901	***
	(0.2306)	
Adv	7.3418	***
	(0.2618)	
Unsec	7.2043	***
	(0.2672)	
Subs	-0.5804	***
	(0.2182)	
Segr	-0.5085	***
	(0.1700)	
Constant	11.6490	*
	(6.0029)	
LR Chi Squared	2592.80	
	(0.000)	
Pseudo R2	0.3194	
Correctly classified	98.35%	

Model I

- Unsecured loans are much riskier than mortgage loans
- Basel compliant guarantees tend to be more risky. This means that the **level of financial liability of a MGI** in granting guarantees is negatively related to the default risk of the public guarantees (H2 is confirmed).
- The **level of geographical concentration** of a MGI is negatively related to the default risk of public guarantees whereas the level of industrial specialization is not significant (H3 is confirmed, H4 is refused).
- The **level of capitalization of a MGI and its size** are negatively related to the default risk of the public guarantees. Whereas **the volume of counter-guaranteed portfolio** of a MGI is positively related to the default risk of the public guarantees (H1, H5 and H6 are confirmed).

Main results (2/2)

	II	III	IV
Loc	n.s.	-1.3380 (0.6063)	** -1.5174 (0.6190)
Guar	-1.5350 (0.3006)	*** -1.8819 (0.3561)	*** -1.5947 (0.3317)
CounGuar	0.4383 (0.0688)	*** n.s.	*** 0.4089 (0.0634)
Guar/Equ	0.2619 (0.0233)	*** 0.2620 (0.02370)	*** 0.2664 (0.0242)
CounGuar*Loc	-0.0757 (0.0294)	***	
CounGuar*Guar		0.0197 (0.0030)	***
CounGuar*(Guar/Equ)			n.s.
CurAcc	1.8901 (0.2304)	*** 1.8901 (0.2305)	*** 1.8901 (0.2305)
Adv	7.3518 (0.2622)	*** 7.3498 (0.2621)	*** 7.3418 (0.2618)
Unsec	7.2254 (0.2688)	*** 7.2186 (0.2678)	*** 7.2043 (0.2672)
Subs	-0.5559 (0.2144)	*** -0.5558 (0.2174)	** -0.5804 (0.2182)
Segr	-0.4779 (0.1723)	*** -0.4920 (0.1698)	*** -0.5085 (0.1700)
Constant	9.8602 (5.1624)	* 17.5566 (6.3939)	*** 11.6490 (6.0029)
LR Chi Squared	2593.74 (0.0009)	2593.41 (0.0000)	2593.18 (0.0000)
Pseudo R2	0.3195	0.3194	0.3194
Correctly classified	98.35%	98.35%	98.35%

Columns II, III and IV are useful to test H7: When the counter guaranteed portfolio increases, some characteristics of a MGI (size, geographical concentration and capitalization) are able to influence the increase of the probability of default.

We demonstrate that when the counter-guaranteed portfolio increases, the probability of default increases too. As illustrated before, this could hide an **opportunistic behaviour** that seems to be emphasised **when the size of a MGI is greater** (an increase in the volume of guarantee increases the risk of default by 2%), **whereas it can be reduced by the presence of a local MGI** (the presence of a local MGI reduces the risk of default by 7%).

Conclusions (1 / 3)

- There exists a link between the probability of default of the guaranteed loans and the structural characteristics of the MGI.
- The geographical concentration is a key element to reduce the risk of default as well as the volume of guarantees issued that allows the MGI to achieve significant economies of scope and to refine risk management techniques.
- It is important to emphasize that, when the size of the counter-guaranteed portfolio increases, the effect on the risk of default of the variables mentioned above may change.

Conclusions (2/3)

- In particular, when the counter guaranteed portfolio increases, larger MGIs (in terms of volume of guarantees) seem to be more risky than smaller ones. This finding shows that larger MGIs have generally more sophisticated risk management techniques and they are able to correctly assess the riskiness of a firm. However, when the counter-guaranteed portfolio increases, they probably adopt an opportunistic behaviour and they commit the evaluation to the simpler scoring model adopted by CGF.
- On the other hand, local MGIs are able to reduce the risk of default by means of soft and confidential information, the so-called implicit guarantee, even when the counter-guaranteed portfolio increases.

Conclusions (3/3)

- The CGF should rationalize the allocation of resources to reduce opportunistic MGI behaviours, but also to reward the most virtuous MGIs in the management of their guarantee portfolio in order to limit default rates in PCGSs.
- In particular, the regulatory conditions of the PCGSs around the world have to adjust the degree of risk left to the principal guarantor according to its ability of measuring and managing the risk taken. In fact, all parties concerned in addition to the government (SMEs, banks, MGIs) should retain a sufficient share of responsibility to ensure proper functioning of the public intervention and avoid moral hazard.