Internal Rating Based Model, Bank Regulatory Arbitrage and Eurozone Crisis

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Capital Regulation

In order to increase the stability of the financial system, policy makers have been improving the regulatory framework, with particular attention to the design of bank's capital charge. In this regard, the most important innovation is the model-based capital regulation, which is introduced around the new millennium. Basel II allow banks to choose between two different approaches to assess the risk associated with their assets as well as capital adequacy: Standardised Approach (SA) and Internal Rating Based Approach (IRB)

	SA	IRB
Pro.	•Straightforward	•Customizable
Con.	•Insensitive to risk drivers	•Costly •ambiguous •Manipulative

Regulatory Arbitrage

By applying internal based models, banks can have considerable autonomy in terms of risk assessment, which can provide extensive incentive for regulatory arbitrage. There are mainly two ways:

1. Strategic Modelling

Banks may strategically design IRB models which significantly underestimates the risk associated with assets, so that banks can save capital by switching from SA to IRB.

2. Cherry Picking

Banks may game the risk weights by avoid using IRB approach on certain exposures. The Basel Committee requires that, once a bank uses the IRB approach for one part of its asset, it must take steps to implement the IRB approach across all significant portfolios and business lines.

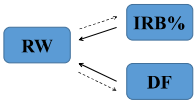
Eurozone Crisis

The European debt crisis erupted in the wake of the Great Recession in late 2009, and was characterized by an environment of accelerating government debt levels and increasing government bond yield.

During the crisis, some countries are seriously affected – Greece, Ireland, Italy, Portugal, and Spain (GIIPS), while some others are relatively steady – Austria, Belgium, France, Germany, Netherlands (CORE).

Therefore, the purpose of this paper is to explore the regulatory arbitrage behaviour of Eurozone Banks and compare the difference between banks from the CORE countries and those from the GIIPS countries.

Key Variables



RW : Risk weights of a bank's asset.

IRB% : Proportion of a bank's asset under IRB approach.

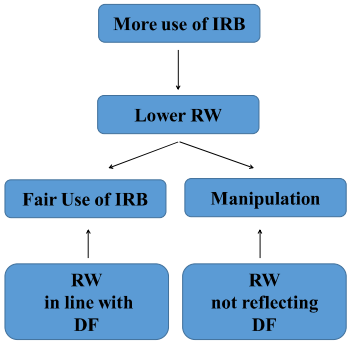
DF : Proportion of a bank's asset that is in Default.

Summary Stats. Mean Value

	Core Bank	GIIPS Bank	Diff.
RW	33.20%	46.80%	-13.6%***
IRB%	73.70%	40.80%	32.9%***
DF	2.50%	4.40%	-1.8%***

Data Source: EBA Stress Test, Transparency Test and Capital Exercise.

Identify Manipulation



$$RW_{l,b,c,t} = IRB\%_{l,b,c,t} + DF_{l,b,c,t} + Controls$$

Where (l) denotes the home country of the bank, (b) indicates the specific bank, (c) is for the country of exposure and (t) identifies the time.

Endogeneity? Yes, but it is dealt with designated IVs.

Baseline Results (2SLS)

	Core Banks	GIIPS Banks
Dep. Variable	RW	RW
	[1]	[2]
IV_IRB%	-0.0993*	-0.5573**
IV_DF	1.7487**	5.1908
Controls	YES	YES
N	1624	467
Adj. R-Squared	0.61	0.63

Compared to Core Banks, GIIPS BANKS are very likely to be manipulating RW with IRB approach.

Core Banks' Exposure - NonGIIPS vs. GIIPS

	NonGIIPS	GIIPS	Diff.
RW	31.8%	41.8%	-10.0%***
IRB	74.4%	69.6%	4.8%**
DF	2.3%	4.1%	-1.8%***

GIIPS Banks' Exposure - NonGIIPS vs. GIIPS

	NonGIIPS	GIIPS	Diff.
RW	49.5%	38.7%	10.8%***
IRB	35.5%	56.6%	-21.1%***
DF	2.5%	9.8%	-7.2%***

GIIPS Banks apply more IRB approach to GIIPS exposures, which should be more risky compared to the NonGIIPS exposures (based on the default ratio). However, the RW of GIIPS exposure is much less than that of the NonGIIPS.

Evidence of Cherry Picking