

Master Thesis

MSc Quantitative Finance



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**Eurozone debt crisis – the case of Greece: an analysis of
imbalances, weak banks and sovereigns and spillover
effects**

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Abstract

The global financial crisis that erupted in 2007 after the housing market bubble burst in the United States, transformed itself into a sovereign debt crisis in Europe. The loopholes in the Euro project with a common monetary policy for countries in different stages of the economic cycle and a lack of common fiscal and political decision making exposed the imbalances between the so called core and peripheral countries of the monetary union. Huge imbalances in the current-accounts and ballooning government debts cut some of the peripheral countries from the markets and led to increased unemployment, rising social unrest and enormous amounts of fiscal austerity.

The present work starts by presenting in greater detail the reasons behind the imbalances and failures in the Euro project, before describing in greater detail the hardships faced by Greece, the country most hit by the crisis. After 6 years since the onset of the crisis, Greece is still facing dire economic conditions, unprecedented unemployment rates for a developed economy in times of peace, a fluid and unstable political system mired by corruption and a society which is becoming impoverished, hopeless for the future and socially destroyed by consecutive years of recession and severe austerity imposed by its creditors in exchange for big bail-out packages.

In the third part of this thesis the connection between banks and sovereigns is scrutinized in further detail. Data showing the exposure of sovereigns to banks and vice versa are trying to give a flavor of the relationship and the link that transmits risk from weak banks to weak sovereigns, as well as the other way around. In an effort to quantify the above, Merton's model is being utilized together with publicly available data for an extensive list of European banks in order to calculate the riskiness of those financial institutions throughout the European debt crisis and compare them to the riskiness of their respective sovereigns, measured in terms of government borrowing spreads to Germany.

Last but not least, the focus turns to Credit Default Swaps as a major tool in understanding spillover effects of risk between banks, sovereigns as well as banks and sovereigns. As a case in point, the Greek debt restructuring of 2012 is presented in detail, including the mechanics of the restructuring and the triggering of CDS insuring Greek debt at the time. What is more, a Vector Autoregressive Model is being used in order to measure these spillovers by means of impulse response functions that are aggregated in order to create a Contagion Index, quantifying the spillover of risk in the system.