

# Essays in financial asset pricing in the European Monetary Union

## Citation for published version (APA):

Fazlioglu, S. (2020). *Essays in financial asset pricing in the European Monetary Union*. Maastricht University. <https://doi.org/10.26481/dis.20201029sf>

## Document status and date:

Published: 01/01/2020

## DOI:

[10.26481/dis.20201029sf](https://doi.org/10.26481/dis.20201029sf)

## Document Version:

Publisher's PDF, also known as Version of record

## Please check the document version of this publication:

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## Chapter 5

# Summary and conclusions

This dissertation examines the price determination and price movements in government bonds and equity markets within the EMU. We use a panel modeling approach. Most empirical studies boil down to either time series analysis or cross-sectional analysis, depending on the question at hand. Each method of analysis has its own pros and cons. Panel modeling aims to improve estimation by combining both types of analysis. In this thesis, we report the results of three empirical studies, each employing relevant tools from the panel framework to gain more insight in the price determination and price movements of the financial assets within the union.

In Chapter 2, we examine the main drivers of long-run government borrowing cost differentials among EMU members and how the introduction of the EMU and the financial crisis in 2008 have had an impact on bond pricing. The results of our study suggest that the differential government debt ratio, differential economic growth rates, liquidity and governance quality significantly explain the sovereign yield spreads. We identify a significant positive effect for the differential government debt ratio and a significant negative effect for relative economic growth rates. The more liquid the public bond markets are, the lower the liquidity risk premiums. A positive market perception of governance effectiveness reduces sovereign yield spreads. Moreover, the non-linear dynamic panel estimates indicate that markets seemed to have ignored country-specific economic fundamentals after the emergence of the EMU while the markets revalued these risk factors after the 2008 financial crisis. We also investigate whether the relations between the main drivers and bond yield spreads change with membership of the EMU. The results show that markets price fiscal indebtedness higher among EMU members than among non-EMU members. Finally, the results of the dynamic panel model are robust to different estimation techniques and to sample selection.

## CHAPTER 5. SUMMARY AND CONCLUSIONS

The main implication of this study for policy makers is to keep prioritizing fiscal responsibility while introducing structural reforms to boost economic growth in the long-run. As the European Commission prioritizes investment, fiscal responsibility and structural reforms, promoting economic growth via reforms can thus reduce borrowing costs. Structural reforms refer to changes in the way an economy works. For instance, addressing the challenges facing the welfare state such as an aging population, introducing more flexible labor markets, a simpler and fairer tax system can improve the overall business environment. Regarding fiscal responsibility, regulation to keep the debt stock ratio at a certain level or at least avoiding upward momentum in the public debt ratio is vital for strengthening the currency union. Finally, the perception of whether the government will implement policies that support the private sector is also important in shaping the trend of long-term borrowing cost differentials. This relation is captured via the governance indicator which measures government effectiveness in terms of its ability to implement policies that boost private sector development. The countries that have postponed taking such actions due to social and political opposition are likely to face higher risk premiums in the bond markets in the future.

Chapter 3 studies the spatial interdependence of sovereign yield spreads. First, we establish the long-run relation between the domestic sovereign yield spreads (defined as the difference between the long-run interest rate on a domestic sovereign bond and the long-run interest rate for a US bond) and the country-specific risks such as exchange rate, default and liquidity risks. In the second-step, we investigate the interdependence of yield spreads after extracting the country-specific risks and common factors from the domestic yield spreads. To investigate the presence of interdependence, we fit a spatial autoregressive (SAR) model in the residuals from the first-step. Regarding country-specific risks, the short-run policy rate spreads as well as relative real GDP growth rates are the main economic fundamentals that determine the long-run sovereign spreads. Consequently, when domestic short-run yields are higher than the US monetary policy stance, this leads to an increase in the domestic long-run sovereign borrowing cost differentials. Higher economic growth has a negative relationship with yield spreads. Among EMU members, the budget balance ratio differentials and relative real GDP growth rates turn out to be statistically significant for explaining yield spreads. Budget balance ratios that are higher than the US fiscal outlook lead to a decrease in the domestic long-term sovereign yield spreads. This finding indicates the importance of fiscal responsibility within a common currency union. Regarding interdependence, we find a highly significant spatial dependence in the sovereign yield spreads. This implies that the domestic yield spreads are affected by the spreads of foreign countries. Regarding transmission channels, economic connections between countries shape spatial dependence. Economic distance measured by trade volume shows the highest estimated degree of spatial dependence, followed by FDI flows and cross bank lending while geographical distance turns out to be insignificant for spatial dependence.

On the policy implications side, detecting spatial dependence can have serious implications for EMU members. The debate on common European bonds receives public attention from time to time, and the evidence in this study supports the pro-camp. The key point is that the importance of interdependence is detected after extracting the country-specific risks and common factors. Even if each member country takes care of their fiscal responsibility individually, they are still vulnerable during a financial distress period due to spatial dependence. Introducing a common bond market can be one way to go to reduce this vulnerability. For instance, in a market structure similar to the US government bond market with federal and state levels, pan-European bond markets would make individual bonds more liquid and easier to trade, especially during a financial distress period. However, there are several strong arguments against pan-European bonds. First, a common bond contradicts the no-bail out principle which is essential to strengthening fiscal discipline in the Union. Second, burden sharing can lead to possible additional costs for the triple-A rated members. Nevertheless, while the political and fiscal integration of the EMU has a long way to go, a pan-European bond market can be another way of supporting the monetary integration of the union.

Chapter 4 takes a closer look at the competitiveness of European equity markets for European stocks within the price discovery context, to figure out whether the home market still dominates the price adjustment process. We find that pan-European equity markets, the CBOE and the LSEG, contribute to the price discovery process more than the local markets. Among the two pan-European markets, the CBOE seems to dominate the process compared to the LSEG. Thus, the CBOE registers the biggest share in the determination of the fair price followed by the LSEG and the local markets. We find a decline in the importance of home markets during the process. Pan-European markets seem to be better at processing information. The introduction of pan-European markets not only spreads trading volume across the markets in the union but also shifts price discovery dominance. Policy makers aim to spread the trade volume in equity markets across the Union to improve financial integration. A decline in the home market dominance in the price discovery process seems to be by-product of these policies. Moreover, Multilateral Trading Facility (MTFs) have increased competition and put pressure on existing regulated markets to reduce service fees. From the perspective of national exchange markets, increasing competition has reduced their market shares. On the other hand, being better at processing information is costly. From the traders' perspective, our findings indicate that the MTFs lead the home market and that information is processed immediately at alternative markets. In order to make a possible profit from trading, trading on the alternative markets could be more beneficial.