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Causality and contagion in EMU sovereign debt markets

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ABSTRACT

This paper contributes to the literature by applying the Granger-causality approach and endogenous breakpoint test to offer an operational definition of contagion to examine European Economic and Monetary Union (EMU) countries public debt behavior. A database of yields on 10-year government bonds issued by 11 EMU countries covering fourteen years of monetary union is used. The main results suggest that the 41 new causality patterns, which appeared for the first time in the crisis period, and the intensification of causality recorded in 70% of the cases provide clear evidence of contagion in the aftermath of the current euro debt crisis.

1. Introduction

From the introduction of the euro in January 1999 until the collapse of the US financial institution Lehman Brothers in September 2008, sovereign yields of euro area issues moved in a narrow range with only very slight differences across countries (see Figs. 1 and 2). Nevertheless, following the Lehman Brothers collapse severe tensions emerged in financial markets worldwide, including the euro zone bond market. In fact, not only did the period of financial turmoil turn into a global financial crisis, but it also began to spread to the real sector, with a rapid, synchronized deterioration in most major economies. This financial crisis put the spotlight on the macroeconomic and fiscal imbalances within European Economic and Monetary Union (EMU) countries which had largely been ignored during the period of stability when markets had seemed to underestimate the possibility that governments might default (see Beirne & Fratzscher, 2013). Furthermore, in some EMU countries, problems in the banking sector spread to sovereign states because of their excessive debt issues made in order to save the financial industry; eventually, the global financial crisis grew into a full-blown sovereign debt crisis. Indeed, since 2010, Greece has been bailed out twice and Ireland, Portugal and Cyprus have also needed bailouts to stay afloat. These events brought to light the fact that the origin of sovereign debt crises in the euro area varies according to the country and reflects the strong interconnection between public debt and private debt (see Gómez-Puig & Sosvilla-Rivero, 2013).[1]

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[1] Moro (in press) and Aizenman (2013) offer a literature review on the Eurozone economic and financial crisis.

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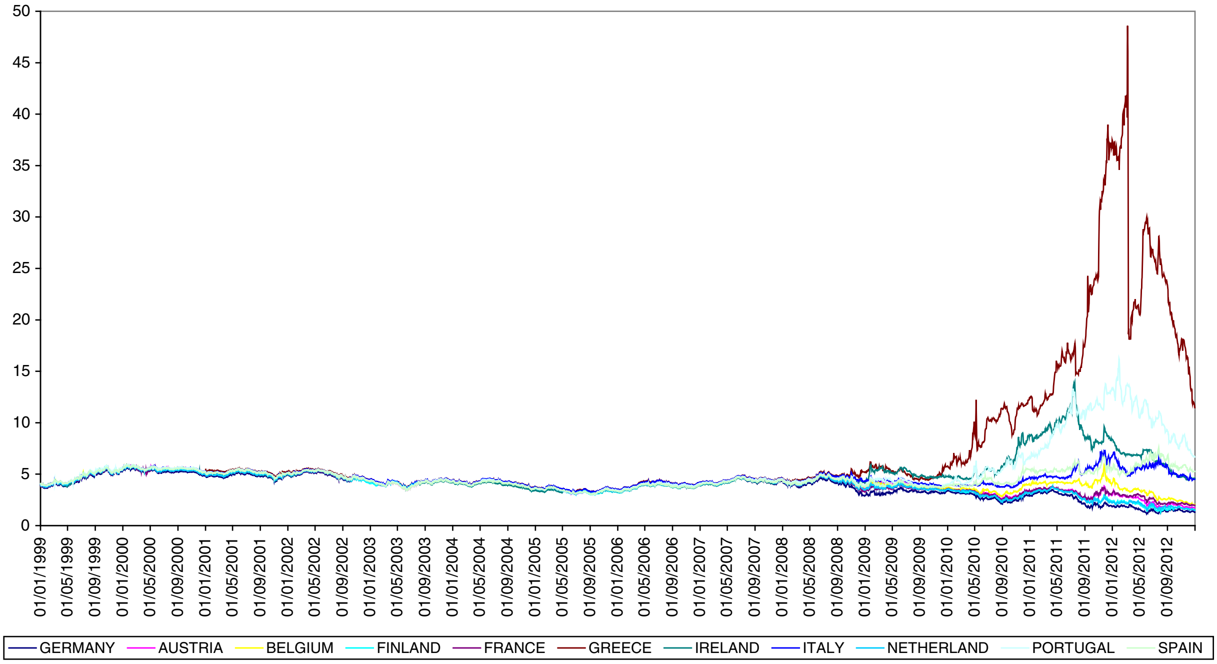

Fig. 1. Daily 10-year sovereign yields in EMU-11 countries: 1999–2012.

In this scenario, some of the research to date has focused on the analysis of interactions between the sovereign market and the financial sector [see Mody (2009), Ejsing and Lemke (2009), Gennaioli, Martin, and Rossi (2014), Broner and Ventura (2011), Bolton and Jeanne (2011) and Andenmatten and Brill (2011)]. Other researchers have discussed transmission and/or contagion between sovereigns in the euro area context [see Kalbaska and Gatkowski (2012), Metieu (2012), Caporin, Pelizzon, Ravazzolo, and Rigobon (2013), Beirne and Fratzscher (2013) and Gorea and Radev (2014) to name a few]. Finally, a strand of research has examined structural breaks and sovereign credit risk in the euro area [see, e. g., Basse, Friedrich, and Kleffner (2012), Gruppe and Lange (in press) and Basse (2014)].

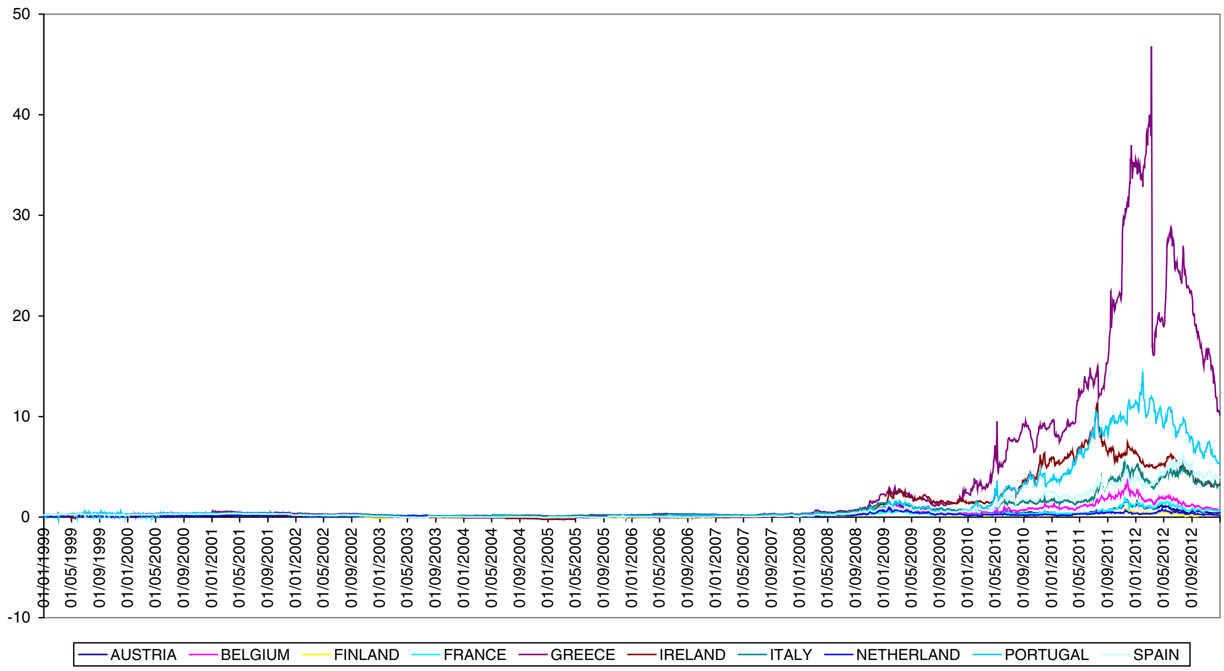

Fig. 2. Daily 10-year sovereign yield spreads over Germany: 1999–2012.