

Exogeneity tests for the Chinese and U.S. external balance: Empirical evidence of the connection and the subprime crisis

Luiz Antônio de Lima Junior*, Cláudio Roberto Foffano Vasconcelos,
Wilson Luiz Rotatori Corrêa, José Simão Filho

Federal University of Juiz de Fora, Brazil

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Abstract

This paper studies the global imbalances that occurred in the first years of the twenty-first century. The analysis encompasses the two biggest countries in the world: the U.S.A. and China. Many authors defend the assertion that the relationship between the current accounts of these two countries was one important cause of the subprime crisis. While the U.S.A. has increased its deficit in the last decade, China has improved its surplus. To investigate this relationship, this study performed exogeneity tests. Moreover, it conducted Granger causality tests following the approach of Toda–Yamamoto (1995). The results showed that there is a real causal relationship between the American and the Chinese external balance. Furthermore, the global imbalance between these two countries contributed to the subprime crisis, because the tests detected structural breaks for the external balances of America and China in 2008. The dynamics of the Chinese external balance changed after the subprime crisis.

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Keywords: Exogeneity test; External balance; Macroeconomic imbalance

Resumo

Este trabalho estudou a dinâmica da relação entre o saldo externo chinês e o saldo externo norte-americano nos primeiros anos do século XXI. O estudo desta dinâmica se justifica uma vez que a mesma é apontada por muitos autores como uma das causas da crise *subprime*, ocorrida em 2008. Com a finalidade de estudar esta dinâmica foram usados os testes de exogeneidade para investigar a existência da relação entre o saldo externo destes dois países. A investigação desta relação foi dada por meio da abordagem de Toda–Yamamoto (1995). A conclusão que este trabalho chegou foi que o desequilíbrio macroeconômico entre China e EUA tem uma relação causal. Além disso, estes desequilíbrios estão relacionados com a crise de 2008, uma vez que foram detectadas quebras

* Corresponding author.

E-mail addresses: luiz.lima.j@bol.com.br (L.A.d.L. Junior), claudio.foffano@ufjf.edu.br (C.R.F. Vasconcelos), wilson.rotatori@ufjf.edu.br (W.L.R. Corrêa), simao.filho@ufjf.edu.br (J.S. Filho).

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estruturais para o saldo externo dos dois países no ano de 2008 e a dinâmica do saldo em transações correntes do saldo externo chinês se modificou após a crise *subprime*.

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Palavras chave: Testes de Exogeneidade; Saldo externo; Desequilíbrio macroeconômico

1. Introduction

The early years of this century were marked by structural changes in the world economy. In this period, the attention turned to the group of developing countries that was standing out with growth rates above those of the rest of the planet. In this context, China became the fourth-largest economy in the world in 2006, the third-largest in 2007 and the second-largest in 2010.

During these years, the world experienced a strong increase in the macroeconomic imbalance, which, according to Feldstein (2011), was characterized by a sharp increase in the current account balance in some countries. The United States and China were highlighted by the increase in the current account balance because of their size and the commercial and financial relations that these countries had with the rest of the world. While the U.S. was incurring increasing deficits in its current account balance, China was achieving an increasing surplus.

The growth in the external balance of some countries, especially China, generated strong market liquidity that allowed the maintenance of a low interest rate throughout the world during the first half of the 2000s. Further, for Catte et al. (2011), this expansionary monetary policy was crucial to the emergence of the current account deficit in the U.S. economy and consequently in the housing market bubble. With the bankruptcy of Lehman Brothers in September 2008, there was strong turbulence in the worldwide economy. The bankruptcy was the most serious event in the international economy, related to financial institutions that operated in low-quality mortgages (subprime), mainly in the United States, since 1930. These events culminated in a severe economic crisis, which, according to Reinhart and Rogoff (2009), was the “Second Great Contraction,” in analogy to the “Great Depression” of the past century.

Several arguments have tried to explain the main cause of this crisis. Some works, like those by Bresser-Pereira (2009), Cardim (2008) and Paula and Ferrari (2010), have emphasized the deficiency of the regulatory framework as the main cause of the financial economic crisis. Other studies, such as those by Caballero and Krishnamurthy (2009), Chinn et al. (2011) and Lane and Milesi-Ferreti (2011), have suggested that the increased macroeconomic imbalance was a major factor in the outbreak of the crisis.

The argumentation of macroeconomic imbalance is based on events that occurred mainly in the last ten years, when China stood as a big player in international trade, after its entry into the WTO. While the U.S. spent this decade financing its overspending based on two wars, China at the same time was financing the deficit of several countries from its policy of encouraging exports.

After the attack on the Twin Towers in 2001, the U.S. used an expansionary monetary policy to mitigate the effects of insecurity caused by the assault. The U.S. had no trouble financing its current account deficit because of the aggressive Chinese commercial policy. China had been investing most of its reserves in the North American market. On the other hand, the U.S. had no concern about inflation since China had become an export power at a lower price. Since the U.S. faced no problems either in financing its deficit or controlling inflation, the FED maintained an extremely expansionary monetary policy until 2005–2006, when inflation began to rise and the monetary authority began to raise the interest rates.

This period of expansionary monetary policy, boosted by the excess external imbalance invested by countries like China in the U.S. market, led to a housing boom, combined with excessive leverage in the financial sector. This sector began lending with no credibility. Since the interest rates on mortgages were postfixed, the increases in the interest rate were a strong cause of defaults, which were one of the matters of the 2008 crisis.

Despite the crisis having been characterized as being a result of high-risk loans, one of the possible causes of this higher risk that banks assumed could be the long period characterized by a monetary policy of low interest rates and high liquidity, which in turn was made possible by the Chinese surpluses. Although the dynamics of the Chinese current account surpluses and the U.S. deficit cannot be directly considered as causes of the mortgage crisis, in the

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