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The internationalisation of financial crises: Banking and currency crises 1883–2008

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ABSTRACT

Financial crises are high cost events which can transmit across international borders. Using data from 1883 to 2008, this article develops a means of mapping changes in the degree of international synchronisation of banking and currency crises through a formal concordance index. This index specifically accounts for the typically low incidence and potential serial correlation of crisis data. The results show that banking crises were highly internationalised at the beginning of the 20th century, and became far less so in the strong regulatory environment prevailing after the Depression until the 1980s. A strong increase in the synchronicity of international banking crises is revealed during the late 20th and early 21st century. Currency crises began the century as more idiosyncratic, but have tended to become more synchronised over the 115 year sample.

1. Introduction

Financial crises can have a huge impact on economies. Fortunately, they do not occur very often. Partly motivated by policy interest in mitigating their economic costs, there is a relatively

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large literature focussed on whether crises are becoming more linked across geographic borders.[1] Important debates concern how to limit the probability, impact and spread of crises, particularly through various agenda on reforming global financial architecture.[2]

There is a substantial literature on various episodes of crisis from the late 19th century to the close of the 20th century. See for example Bordo and Schwartz (1996), Bordo, Eichengreen, Klingebiel, Martinez-Peria, and Rose (2001), Eichengreen (2003), Isard (2005, Chapter 2), Eichengreen (2008), Kindleberger and Aliber (2011), and Reinhart and Rogoff (2011). The exact chronology of the period is not uniformly agreed, as rules for dating crises are notoriously imprecise. However, there is broad agreement about a number of periods.

Evidence suggests that the prevalence of financial crises has been increasing, particularly since World War II; Eichengreen and Bordo (2003), Kaminsky and Reinhart (1999), Glick and Hutchison (2001), Eichengreen (2008), and Reinhart and Rogoff (2011). However, measures of changes in the extent of internationalisation of crises are more scarce. It is of particular interest to understand whether more prevalent crises are internationally linked or are idiosyncratic and simply occur coincidentally.

The contribution of this article is in developing a means of mapping changes in the degree of international synchronisation of financial crises from the late 19th century through to 2008 through a formal concordance index. To examine the history of crises, we use a sample of 21 countries' annual banking and currency crisis data for 1883 to 1998 drawn from Bordo et al. (2001), updated with the recent dataset of Laeven and Valencia (2008), Laeven and Valencia (2013) to 2008. Post-2008 there are no crises indicated in any of sample countries in these datasets, thus we do not extend beyond this period as in our method this will not affect the results. In common with most crisis data, the sample consists of bivariate indices taking the value 1 in the presence of a crisis. Our concordance index uses this data to construct a measure ranging from 0 to 1 to characterise the extent of international interdependence in financial crises. A value of 1 indicates that all crises are simultaneous. The advantage of the concordance indices compared to the traditional correlation measure is the ability to investigate synchronisation among more than two crises, and to formally test for independence. These tests take into account the binary nature of the data, the relatively low incidence of crises, and potential serial correlation. When applied to the sample data they reveal that the occurrence of 5 (4) or more contemporaneous currency (banking) crises in the data is not likely to be coincidental.

The evolution of the concordance indices indicates that currency crises have not only become more prevalent but also more internationally synchronised over the twentieth century. Banking crises were highly internationalised at the beginning of the 20th century, but became far less so during the strong regulatory environment prevailing after the Depression until the 1980s. However, the incidence of banking crises has grown in the past 30 years, and the global financial crisis of 2007–2008 sees a jump in the synchronisation of these crises. Greater frequency of currency crises and lower frequency of banking crises are associated with capital controls by Glick and Hutchison (2001) and Kaminsky and Reinhart (1999). Coupling their results with the concordance indices reveals that more liberalized financial conditions are associated with a greater prevalence of banking crises at the end of the sample and increasing internationalisation of currency crises; this is consistent with the network analysis presented in IMF Global Financial Stability Report (2014), see particularly Box 3.1, and of Billio,

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[1] Some of the channels proposed include trade links (Glick & Rose, 1999); banking linkages (Van Rijckeghem & Weder, 2001); credit derivatives (Brunnermeier, 2009), the lack of common fundamental and institutional features, via contagion effects (Rose & Spiegel, 2010); and more recently via the real sector channel (Claessens, Tong, & Wei, 2012), leverage of banks and investors (Kalemli-Ozcan, Sorensen, & Yesiltas, 2012; Raddatz & Schmukler, 2012), and global banking networks (Aiyar, 2012; Cetorelli & Goldberg, 2012; Claessens & van Horen, 2012; Hale, 2011).

[2] See for example Eichengreen (2002) following the East Asian crisis and Brunnermeier, Crockett, Goodhart, Persaud, and Shin (2009) on the recent credit crunch and even Bagehot (1873). In recent literature, Barkbu, Eichengreen, and Mody (2011) propose global debt-restructuring for reducing future vulnerabilities. Dewatripont, Rochet, Tirole, and Tribe (2010) emphasize prudential bank regulation. Schinasi and Truman (2010) and Davies and Green (2010, Chapter 10), Chapter 10) review the role of international financial institutions (the IMF, Bank for International Settlements, and the Financial Stability Board) in shaping the global financial architecture. Ostry et al. (2010) focus on the role of global capital controls in reducing financial fragilities. Beyond the economic literature there have been major policy agendas on regulatory reform driven by bodies such as the G20—for example the G20 leaders Declaration on Strengthening the Financial System from the London meetings, released April 2, 2009.