



Sovereign ratings and their asymmetric response to fundamentals[☆]



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ABSTRACT

The evolution of sovereign ratings is strongly asymmetric, as downgrades tend to be deeper and faster than upgrades. In other words, once a country loses its initial status it takes a long time to recover it. Using S&P data, we characterize “rating cycles” in terms of their duration and amplitude. Then, we study whether the reaction of this agency to new domestic economic and financial information is also different during upgrade and downgrade phases. Our results indicate that favorable fundamentals could be helpful in terms of smoothing and slowing down rating downgrades, whereas they do not seem to accelerate rating upgrades.

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1. Introduction

Rating agencies have played a prominent role in the recent financial crisis. They assign a credit rating to sovereign and private sector borrowers that indicates the probability of them not fulfilling their obligations in their debt issues. A rating upgrade results from favorable signals in the credit outlook, whereas a downgrade stems from unfavorable indicators. This regular updating of the credit ratings is one of the reasons why financial markets rely on agencies (Cantor and Packer, 1994). In this paper, we focus on sovereign credit ratings. Understanding their dynamics is relevant given their implications for capital flows and their strong link with private ratings, whether of banks or non-financial corporations, in the sense that sovereign ratings represent a ceiling for corporate ratings (Alsakka and ap Gwilym, 2009; Bank of International Settlements (BIS), 2011). Further, sovereign ratings are one of the main drivers of sovereign bond spreads (see, for instance, Cantor and Packer, 1996), which, in turn, determine the financing costs of the public sector.

Despite their importance, the agencies do not provide enough detail about the ratings' determinants or their rating procedures (Mora, 2006), notwithstanding some recent regulatory initiatives aimed at improving transparency.¹ We focus

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¹ For instance, credit rating agencies have been under the European Union (EU) regulation since December 2009, although the final legislation on sovereign ratings only entered into force in June 2013, once the European Securities and Markets Authority (ESMA) had been appointed as the exclusive

on *Standard & Poor's* (S&P onwards) rating decisions and analyze how this agency updates sovereign ratings over time. In other words, we study sovereign “rating cycles”. In our setting, a complete credit cycle comprises a downgrade phase, when the rating goes from peak to trough, and an upgrade phase, when the rating improves, but does not necessarily return to its initial level. The number of countries that have recorded a complete rating cycle is small, and they are mostly emerging market economies (EMEs onwards).

Rating cycles are characterized by their strong asymmetries, as their length and depth (duration and amplitude) differ widely in the upgrade and downgrade phases. Downgrade periods tend to be shorter than upgrade periods, as rating improvements tend to be slower than decreases, which are more abrupt. In other words, once a country loses its rating level it takes a long time to recover it. For instance, *Koopman et al. (2008)* investigate these asymmetric effects across corporate ratings. Strong asymmetric dynamics are not only typical of ratings, but also of most financial variables that can be described by the so-called financial cycle (see, for instance, *Aizenman et al., 2013*).²

One possible interpretation of these asymmetries could be that the signals that rating agencies use for updating ratings also exhibit asymmetries in the recession and recovery periods. But how do the agencies really adjust to changes in countries' fundamentals and financial market conditions? The available empirical evidence, albeit scarce, has led to two main conclusions.³ On the one hand, the less extended view supports the adequacy of ratings to their models based on the countries' fundamentals (see, for instance, *Hu et al., 2002*). This literature would implicitly support rating agencies using a point-in-time strategy through which they adapt to the borrower countries' current conditions in an updated manner.

On the other hand, most papers state that rating agencies do not adequately adjust to domestic indicators. For instance, some authors conclude that there is a certain amount of lag in the agencies' responses to domestic variables. In this vein, *Ferri et al. (1999)* analyze the East Asian crisis of 1997 and deduce that rating agencies, which previously had failed to predict the onset of the crisis, had reputational incentives to downgrade those countries more than the fundamentals would justify in subsequent periods, which, in turn, contributed to exacerbating the crisis. In other words, during downgrade phases, rating agencies would be oversensitive to fundamentals, making sovereign ratings procyclical. *Monfort and Mulder (2000)* also conclude that ratings are procyclical. Meanwhile, *Mora's (2006)* analysis of the East Asian crisis states that ratings are sticky rather than procyclical, meaning they are adjusted only when there is a sufficiently large divergence between predicted and assigned ratings. A widely accepted explanation for this sometimes inadequate timeliness of rating variations is the through-the-cycle methodology of agencies, which leads to more stable but less accurate ratings (see, for instance, *Löffler, 2004; Altman and Rijken, 2005; Kiff et al., 2013*). This evolution of ratings comes as a result of the agencies' dilemma between accuracy and stability (*Cantor and Mann, 2006*).⁴ Thus, despite their initial stability, ratings would be more prone to sudden reversals in downgrade phases that may result in market disruption and forced selling. Indeed, the through-the-cycle strategy can explain the sudden drop of ratings during downgrade periods (*Ferri et al., 1999; Kiff et al., 2013*) and the low power of ratings to predict future defaults (*Löffler, 2004; Kiff et al., 2013*).

Most of the empirical literature on how credit ratings adjust to fundamentals focuses on financial crisis periods, and less attention has been paid to recovery phases. Indeed, literature that studies sovereign ratings and their link with the complete business cycle is scarce. Nevertheless, there are several empirical papers that analyze the procyclical nature of corporate ratings and test the hypothesis of rating through-the-cycle (for instance, *Amato and Furfine, 2004*). In particular, those authors that analyze rating through-the-cycle conclude that, in the recovery phases, ratings are typically smoothed and, as in downgrade periods, are adjusted with a certain lag (*Kiff et al., 2013*). To some extent, the lack of empirical literature that studies ratings' determinants over the complete cycle is due to the sample period analyzed in most of the previously mentioned contributions, such as *Afonso et al. (2009, 2011)*, *Hill et al. (2010)* and *Mora (2006)*. In fact, the periods they analyze do not cover the global financial crisis period or the years preceding 2008, when upgrades dominated rating variations in EMEs. The analysis of the post-crisis period from 2008 to 2013 is relevant in this setting, as from 2008 onwards not only EMEs but also developed economies began to record the downgrade phase of rating cycles.⁵

The main objective of this paper is twofold. First, we describe the S&P ratings to confirm the presence of asymmetries in the cycle. In other words, we examine whether downgrade phases are faster and shorter than recovery periods. Second, we disentangle the determinants of this different behavior of S&P ratings in upgrade and downgrade periods by using a panel data model for 67 countries, 43 of which are EMEs, that covers the period from 1994:Q1 to 2013:Q1. As a robustness test, we also apply some of these models to Fitch and Moody's sovereign ratings. As far as we know, this is the first empirical paper to

regulator of credit rating agencies in the EU (in July 2011). On the other hand, in July 2010 the US Congress passed the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank), which outlined a series of broad reforms to credit rating agencies. Nevertheless, even though rating agencies have been providing more methodological information since 2013, the final decision on rating changes is not exclusively linked to their publicly available models.

² See *Lewis (2011)* for an illustration of an alternative financial market, namely retail gasoline, whose prices also exhibit an asymmetric pattern.

³ On the contrary, a broad section of the literature analyzes the impact of rating changes on the financial and economic variables. See *Larrain et al. (1997)*, *Reisen and von Maltzan (1998)*, *Ferri et al. (1999)* or *Alsakka and ap Gwilym (2013)*.

⁴ The through-the-cycle methodology entails a focus on the permanent credit risk component that makes the agencies disregard short-term fluctuations, and a prudent policy regarding rating changes (*Altman and Rijken, 2005*).

⁵ In 2008:Q4, immediately after the Lehman Brothers collapse, several EMEs were downgraded by S&P (Argentina, Bulgaria, Hungary, Latvia, Lithuania, Pakistan and Romania). Iceland was the first developed country to be downgraded by S&P, in 2008:Q4, although the agency had already lowered Iceland's rating for the first time in April 2008, followed by downgrades for Greece, Ireland, Portugal and Spain, in 2009:Q1.

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