J. Japanese Int. Economies 40 (2016) 59–76

Contents lists available at ScienceDirect

Journal of The Japanese and International Economies

journal homepage: www.elsevier.com/locate/jjie

Absence of safe assets and fiscal crisis☆

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ARTICLE INFO

Article history:
Received 15 February 2015
Revised 25 March 2016
Available online 8 April 2016

JEL:
E00
G12
H63

Keywords:
Fiscal crisis
Safe asset
Risk premium
Sustainability

ABSTRACT

Sakuragawa, Masaya, and Sakuragawa, Yukie—Absence of safe assets and fiscal crisis

This paper develops a fiscal crisis model that explains a mechanism under which low interest rates can coexist with Japan's large outstanding debt. The key idea is that when there is a strong home bias in the asset portfolio of domestic bondholders, these investors turn out to have no access to any assets that hedge fiscal risk. This explains why domestic investors do not request a risk premium on government bonds. In this environment, the interest rate and the default probability are low, and the government can sustain its large debt even under adverse fiscal conditions. As the interest rate does not rise fully to reflect the risk premium, the low interest rate is not always a signal of sound fiscal conditions. The welfare implications of financial market reform are mixed. This reform can improve welfare so long as the government can sustain the debt, but at the same time, it makes it difficult to sustain the debt because the interest rate rises. Quantitative easing is effective in lowering the risk premium. *J. Japanese Int. Economies* **40** (2016) 59–76. Department of Economic, Keio University, 2-15-45 Mita, Minato-ku, Tokyo 108-8345, Japan; Faculty of Management, Atomi University, 1-9-6 Nakano, Niiza, Saitama 352-8501, Japan.

1. Introduction

Japan has increased sharply the amount of outstanding government bonds since the 1990s.[1] The outstanding government debt is enormous at more than 200% of GDP. Fig. 1 presents a cross-country comparison of nominal interest rates and the government debt-to-GDP ratio in the OECD countries for the period 2000–2012.[2] Japan is an outlier; the interest rate is the lowest, but the debt-to-GDP ratio is the highest.

The primary issue is to understand how the low interest rate can coexist with the large outstanding debt.[3] There are three explanations for this puzzle. The first explanation is that there is substantial scope for increasing the consumption

☆ The main idea of this paper was conceived when both authors were visiting researchers at the CJEB. We are grateful to an anonymous referee, Shin-ichi Fukuda, Mototsugu Fukushige, Masaharu Hanazaki, Chen-Min Hsu, Hidehiko Ishihara, Young-Jae Kim, Takashi Niizato, Etsuro Shioji, Norikazu Tawara, participants in the meetings of the Asia-Pacific Economic Association and the Japanese Economic Association, participants in the seminars held at Hitotsubashi University, Gakushuin University, and Atomi University, and participants in the Summer seminar of Tokei Kenkyukai, for valuable and insightful comments and discussions. This research was supported by Keio Gijuku Academic Development Funds.

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[1] Tomita (2001) and Hubbard and Ito (2006) provide an overview of the issuance of the large amount of Japanese government bonds (JGBs).

[2] The data do not include the period when the Bank of Japan conducted large-scale purchases of long-term government bonds.

[3] There is a large literature that discusses the relation between deficits and/or debt on government and long-term interest rates. For example, Alesina *et al.* (1992), Ardagna, Caselli and Lane (2007), and Kumar and Baldacci (2010) use OECD data and find that interest rates in countries where fiscal conditions are unfavorable tend to be high.

http://dx.doi.org/10.1016/j.jjie.2016.03.006
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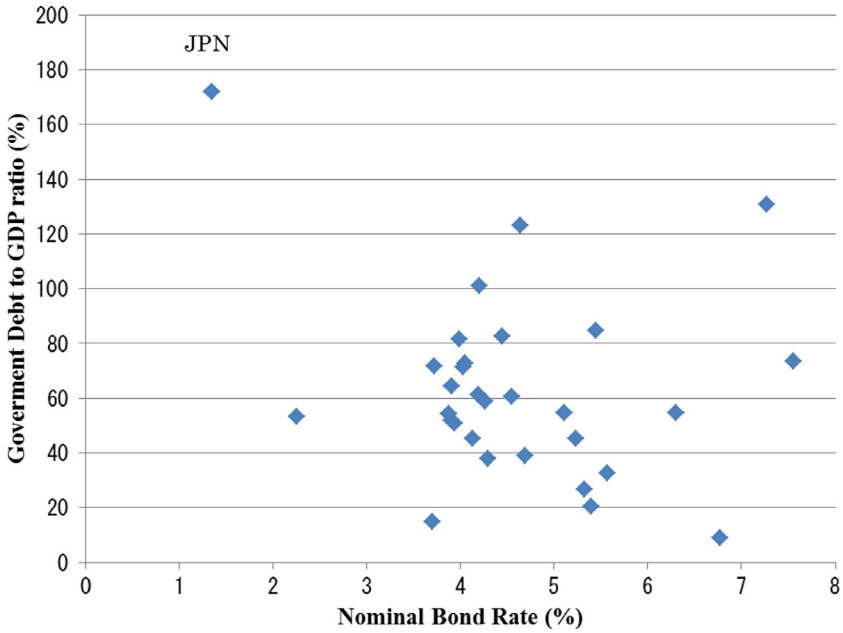

Fig. 1. The nominal interest rate and the government debt-to-GDP ratio (2000–2012). (Data source: OECD and IMF).

tax rate and Japanese investors' trust in future government actions. This explanation is reasonable, but on the other hand, the pace of fiscal consolidation is too slow to maintain optimistic beliefs among Japanese investors.[4] Many studies present a pessimistic scenario for fiscal sustainability in Japan. For example, Hansen and Imrohoroglu (2015) report that in order to sustain the debt, the government needs to increase the consumption tax rate to 35%. This figure is almost impossible to realize from a politico-economic perspective in Japan. Ghosh *et al.* (2013) compute the fiscal space, defined as the difference between projected debt and debt limits in advanced countries, and find that Japan has little fiscal space. In addition, recent research predicts that even when a country is solvent, the coordination problem among investors can cause investors to flee in numbers, triggering a debt crisis (e.g., Morris and Shin, 2004).

The second explanation relates to monetary policy. The Bank of Japan has set the nominal interest rate close to zero since 2001. This monetary easing has been conducive to lowering long-term interest rates through the channel of forward guidance of future policy rates. For example, Oda and Uede (2007) estimate that the zero interest rate policy lowered the 10-year interest rate about by 0.3 percentage points. The quantitative impacts are significant but are not large enough to explain the entire puzzle, at least until 2012.[5]

The third explanation is that the cumulative domestic savings surplus and the strong home bias in the asset portfolio of domestic investors induced them to hold almost all of the Japanese government bonds (JGBs) on issue.[6] Tomita (2001), Tokuoka (2010), and Ito (2011) address that domestic financial institutions are risk averse and prefer JGBs that are yen dominated. Domestic residents hold more than 95% of the JGBs on issue, while domestic residents hold 49% and 69% of the US and the UK government debt on issue, respectively. However, the mechanism through which the home bias lowers the interest rates on JGBs is not clear. Indeed, the large amount of domestic savings can lower the riskless component of the interest rate, but any forces that lead to the reduction in the risky component are not well known.

In this paper, following the third explanation, we propose a theoretical mechanism that explains why investors do not request a risk premium on government bonds under adverse fiscal conditions when there is a strong home bias.

We first clarify the behavior of investors who hold JGBs. Table 1 shows the portfolio characteristics of the primary holders of government bonds for 2012. The largest bondholders are the central bank, private depository institutions, private insurance companies, publicly financial institutions, and social security funds, all of which are owned or regulated by the

[4] The government raised the consumption tax rate to eight percent in April 2014 but postponed the plan to increase it further to 10 percent until April 2017. The Japanese primary deficit is still high at around six percent of GDP.

[5] In 2013, the Bank of Japan commenced quantitative easing that involves large-scale purchases of long-term government bonds. That policy is widely believed to have lowered long-term interest rates.

[6] An ever growing number of studies investigate the determinants of home bias from both rational and behavioral perspectives. The determinants proposed by those studies include transaction costs (Glassman and Riddick, 2001), real exchange rate risks (Fidora, Fratzscher and Thimann, 2007), information barriers (Ahearne, Griever and Warnock, 2004), corporate governance issues (Dahlquist *et al.*, 2003), and lack of familiarity (Portes and Rey, 2005).