Fiscal Sustainability in the G-7 Countries

Ece H. Guleryuz

Abstract The main objective of this chapter is to assess the fiscal sustainability performance of the G-7 countries before, during, and after the global financial crisis. We examine the movement of various socio-economic and fiscal indicators before, during, and after the crisis period in the G-7 countries. We find that the trends of the key fiscal balance indicators clearly reflect the negative effects of the crisis in the G-7 countries. Furthermore, the ageing population and increases in public health expenditure produce an additional fiscal strain. However, Germany has been able to achieve a good financial performance compared with the other G-7 countries.

1 Introduction

The 2008–2009 global financial crisis has critically challenged the world economy in terms of maintaining plausible economic growth rates and fiscal sustainability. The crisis has affected not only emerging and developing markets but also the G-7 advanced economies in a negative way. Figure 1 shows the real GDP per capita changes in the G-7 countries in two periods: 1997–2006 and 2007–2016 (period averages). The 2007–2016 period overlaps with the time range during and after the global financial crisis. Excluding Germany and Japan, the remaining five G-7 countries experienced substantial reductions in their real GDP per capita growth rates in the second period. For instance, it decreased from 1.3 to −1.1 % in Italy and from 2.7 to 0.4 % in the United Kingdom. The United States, Canada and France have also experienced substantial economic growth deterioration.

In this chapter we try to assess the fiscal sustainability performance of the G-7 countries during and in the aftermath of the global financial crisis. To achieve this purpose, we compare the trends of crucial socio-economic and fiscal balance

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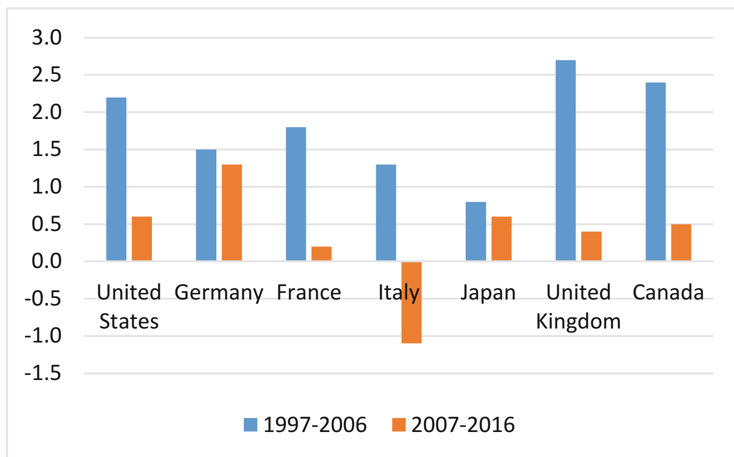

Fig. 1 Real GDP per capita growth rate. Source: Author's own calculations

indicators in two distinctive periods: before the global financial crisis and during and after the crisis. We find that the debt balances in the G-7 countries substantially worsened and the aggregate production deteriorated during the crisis. Germany has achieved a better fiscal sustainability performance than the other G-7 countries.

The chapter continues as follows. Section 2 discusses the related literature. Section 3 carries out a detailed analysis of the movements of significant socio-economic and fiscal indicators, and Sect. 4 presents the conclusion.

2 Literature Review

There is a rich body of literature that analyzes the fiscal sustainability of different country groups. Chalk and Hemming (2000) provide an overview of various approaches to fiscal sustainability analysis based on IMF studies. Some of the studies use panel unit root and panel cointegration tests. Afonso and Jalles (2015) examine the fiscal balances of OECD subgroup countries. They find no strong cointegration between government revenues and expenditures and causality from debt to primary balances. They observe that primary balances improve after debt ratios have risen higher. Afonso (2005) and Afonso and Rault (2010) attempt to assess the fiscal sustainability of a group of European Union (EU) countries in different time periods. They argue that the high indebtness levels are challenging the EU governments' ability to maintain plausible fiscal balances and policy.

Mahdavi and Westerlund (2011) examine the ability to run budget deficits and debt financing at the state–local government level in the U.S. while taking into account strict, formal fiscal rules. Kia (2008) investigates the fiscal sustainability of Iran and Turkey using cointegration and tax-smoothing techniques. He also

concludes that Iran's over reliance on oil and natural gas income risks the responsibility of its fiscal policy. In another paper Alexis (2014) argues that the high primary fiscal deficit levels of 18 developing and emerging countries contribute to their fiscal unsustainability.

A large group of related studies investigate advanced and G-7 economies. Ghosh et al. (2013) use a fiscal reaction function for 23 advanced economies to compute their ability to increase their primary balances in an environment of rising debt. Chen (2014) examines the fiscal sustainability performance of the G-7 and various European countries by using the debt-to-GDP ratio as the primary indicator. In another study within G-7 countries, Feve and Henin (2000) use the feedback-augmented Dickey–Fuller statistic as a fiscal sustainability test. Cottarelli and Schaechter (2010) emphasize the necessity of sustainable fiscal adjustment, macro-prudent structural reforms, and better-functioning fiscal institutions to fight the high debt levels in the G-7 countries. Hauner, Leigh, and Skaarup (2007) argue that the increasing ageing-related government spending creates a big challenge for fiscal sustainability in the G-7 economies. They also support an immediate fiscal adjustment rather than a delayed one.

3 Key Indicators Before, During, and After the Global Financial Crisis

In this section we examine the trends of important socio-economic, general government fiscal balance and debt indicators before the global financial crisis and during and after the crisis. The data sources from which we obtain data are the World Bank's World Development Indicators and the IMF's World Economic Outlook (WEO) reports. For the indicators depicted through Figs. 2, 3, 4, 5, 6 and 7, we identify the first time range as before the global financial crisis and the 2008–2014 range as the period during and after the global financial crisis.

All of the G-7 countries experienced cash deficits between 1999 and 2014, as can be seen in Fig. 2. Only in Canada and Germany did the cash deficit decrease in the 2008–2014 period. On the contrary, we see distinctive increases, and even sharp jumps, in the cash deficit during the second period in the rest of the G-7 countries, namely more than 4 % in Japan and around 5 % in the United Kingdom and United States.

Figure 3 shows the increase in the elderly population ratio. Compared with the 1980–2007 period, the elderly population ratio increased in the G-7 countries during the 2008–2014 period. This indicates that the G-7 countries possibly faced a challenge in ageing-related expenditures during and after the global financial crisis. For example, Germany and Italy, which experienced an increase of almost 5 %, and Japan, which experienced a surge of over 9 %, in the elderly population ratio have already positioned themselves to confront the aging population problem in the medium run.

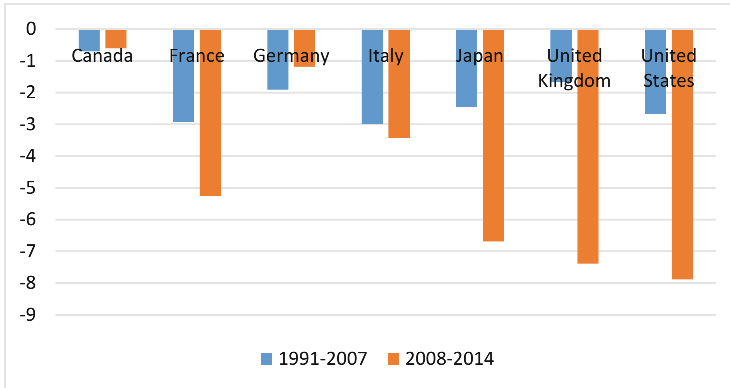

Fig. 2 Cash deficit. Source: Author's own calculations

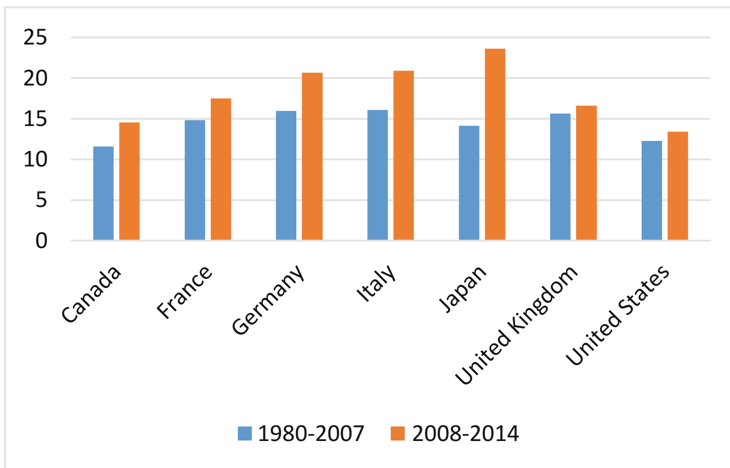

Fig. 3 Old population rate. Source: Author's own calculations

Figures 4, 5, and 6 depict the movements of the government expenditure on education, public health expenditure, and military expenditure, respectively. The government expenditure on education shows more balanced trends, with small ups and downs between the two periods. Only Canada experienced a decline of more than 1 % in the 2008–2014 period compared with the 1980–2007 period. Public health spending increased in all the G-7 countries by 0.35–2 % during and after the global financial crisis. This change in public health spending put an additional strain on the fiscal balances of the G-7 countries. The biggest increases took place in Japan, the United Kingdom, and the United States. During the 2008–2014 period, only Japan and the United States increased their military expenditure. In the other

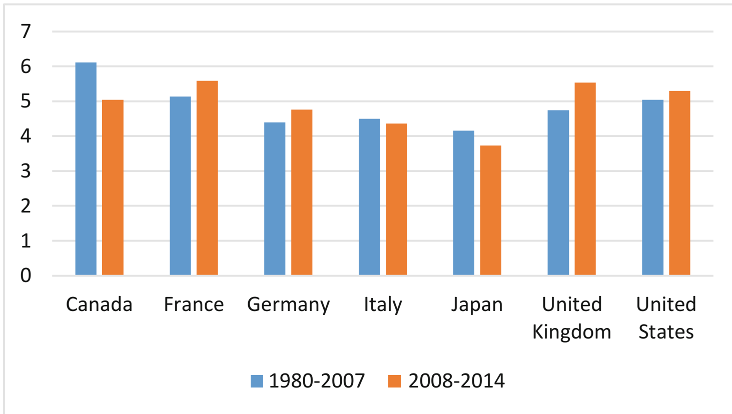

Fig. 4 Government expenditure on education. Source: Author's own calculations

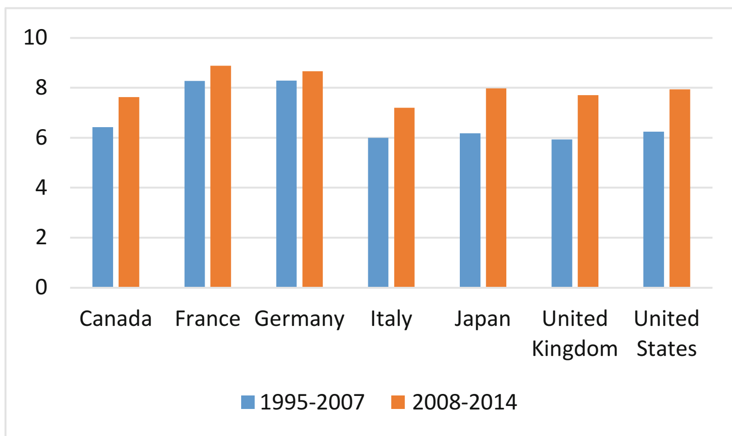

Fig. 5 Public health expenditure. Source: Author's own calculations

five G-7 countries, the military spending declined during and after the crisis. Figure 7 shows that the tax revenue decreased in the G-7 countries, except Germany in the 2008–2014 period. This reduction in tax revenues might generate additional difficulties in achieving and maintaining fiscal sustainability.

The analysis period for the general government fiscal balance debt indicators is 2006–2016 (2015 and 2016 values are projected), and the IMF WEO October 2012 and October 2015 reports are used. The G-7 countries experienced the lowest government net lending levels (mostly negative) in the years 2009 and 2010, which correspond to the highlighted period of the global financial crisis. The government net lending/borrowing graphs in Fig. 8 depict deep V-shaped trends

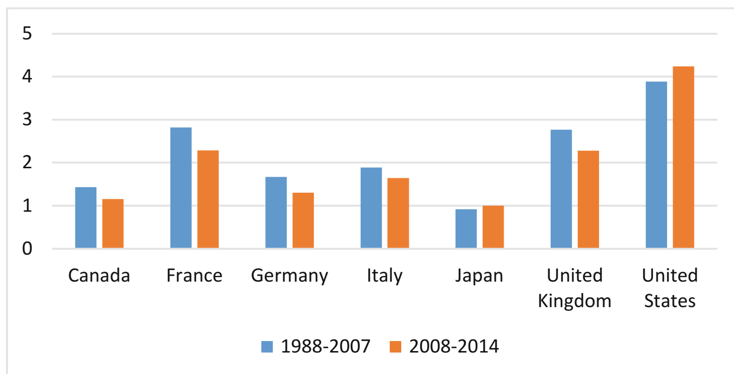

Fig. 6 Military expenditure. Source: Author's own calculations

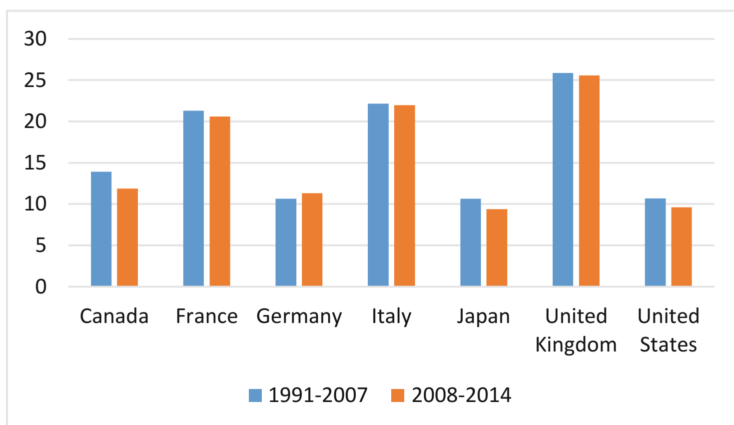

Fig. 7 Tax revenues. Source: Author's own calculations

for the G-7 countries between 2008 and 2011 (for the United States this period extends to 2013). Only Germany managed to sustain positive government net lending values starting in 2012.

Most of the G-7 countries experienced the lowest output gaps (mostly negative) in 2009 (the United Kingdom had a $-3.0\,\%$ output gap in 2012), which can be seen in Fig. 9. By the end of 2016 it is projected that, in the G-7 countries with the exception of Germany, the output gap levels will still be negative. This indicates that, during the global financial crisis, the real aggregate output values remained lower than the potential aggregate output values.

We can see a V-shaped movement, first worsening and then improving, of the structural balance in the United States, Germany, France, the United Kingdom, and

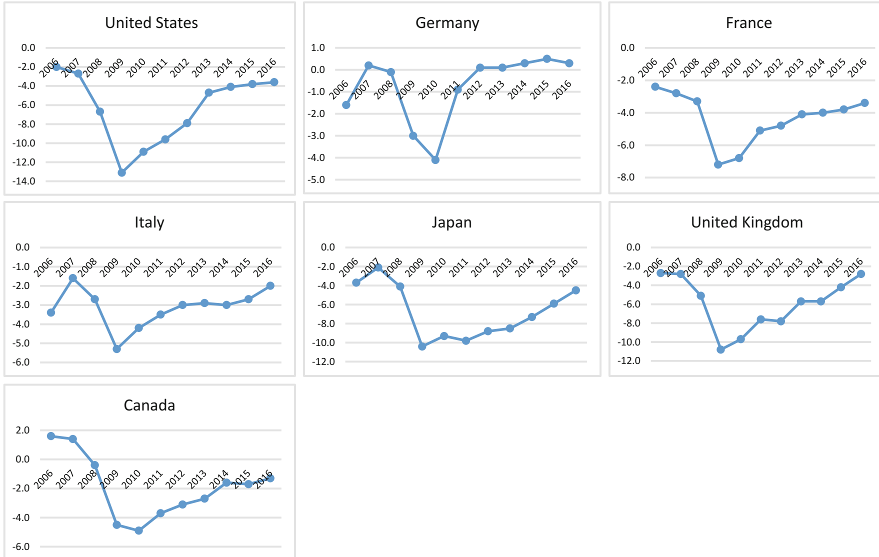

Fig. 8 Government net lending/borrowing

Canada in Fig. 10. Japan performed poorly and is forecast to have a −4.3 % structural balance (as a percentage of its GDP), which is even worse than Japan's 2006 score of −3.5 %. Germany and Italy have improved considerably, with Germany achieving positive structural balance values from 2013.

The graphs in Fig. 11 show that the net debt (as a percentage of the GDP) increased in all the G-7 countries between 2006 and 2016. In Italy and Japan, it is expected that it will definitely surpass 100 % of the GDP by the end of 2016. We also find that the gross debt (as a percentage of the GDP) inclined substantially in the United States, France, Italy, Japan, and the United Kingdom (Fig. 12). Interestingly, in Germany the gross debt only changed in a band of 13 %, reaching its highest value of 80.6 % of the GDP in 2010. Regarding the current account balance (Fig. 13), the United States, Germany, France, and Italy have experienced improving records, while Japan, the United Kingdom, and Canada have had worsening records. Italy managed to achieve a current account surplus starting in 2013, and Germany has experienced a current account surplus since 2006.

4 Concluding Remarks

The primary aim of this chapter is to assess the fiscal sustainability performance of the G-7 economies by examining the trends of important socio-economic and fiscal indicators before, during, and after the 2008–2009 global financial crisis. We find

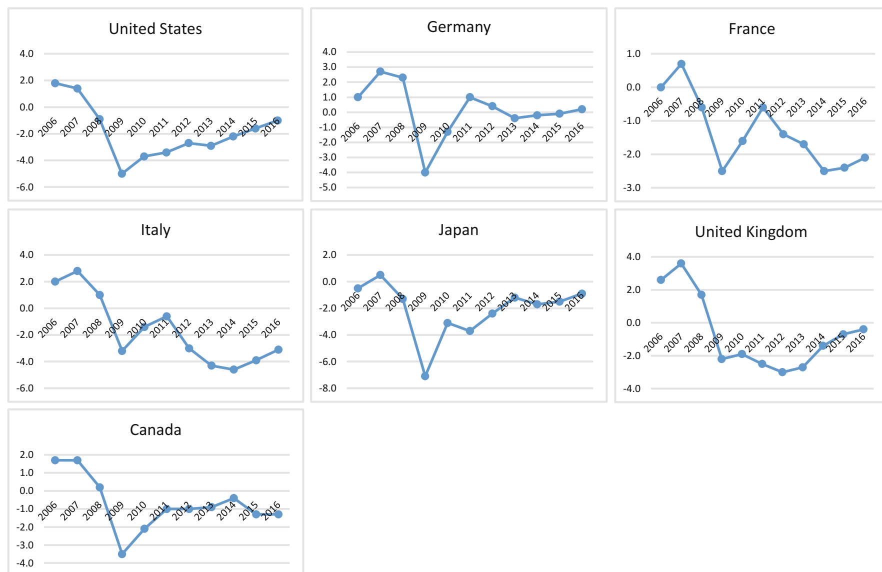

Fig. 9 Output gap

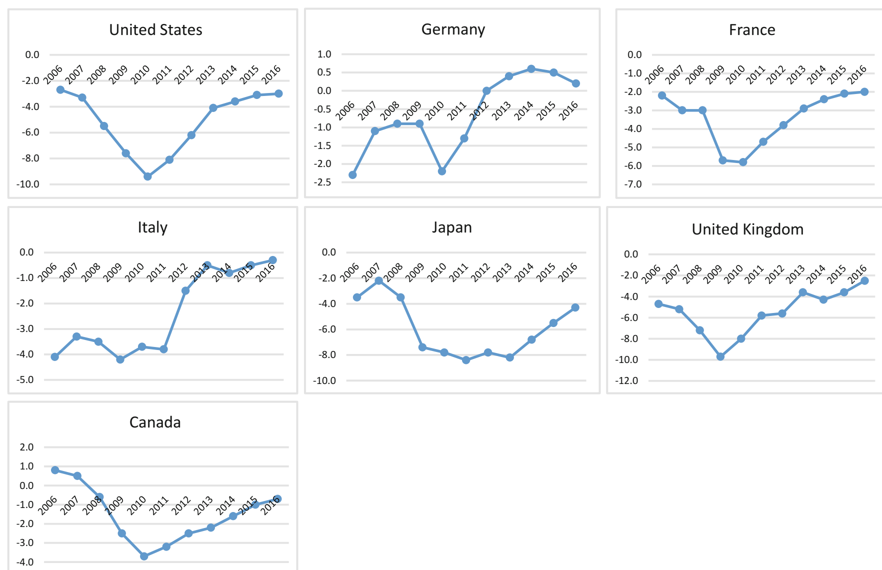

Fig. 10 Structural balance

that the cash deficit inclined substantially in France, Japan, the United Kingdom, and the United States with the onset of the crisis between 2008 and 2014. The increases in the elderly population ratio and public health expenditure during the

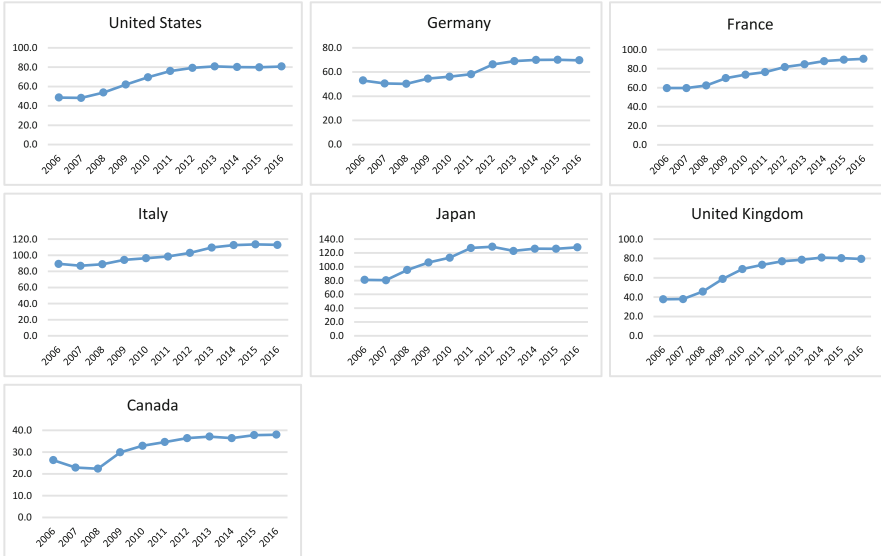

Fig. 11 Net debt

Fig. 12 Gross debt

same period in all the G-7 countries added a further burden to the ageing-related expenditures and labor market rigidities. These factors made it more difficult for the G-7 economies to maintain fiscal sustainability after the crisis started.

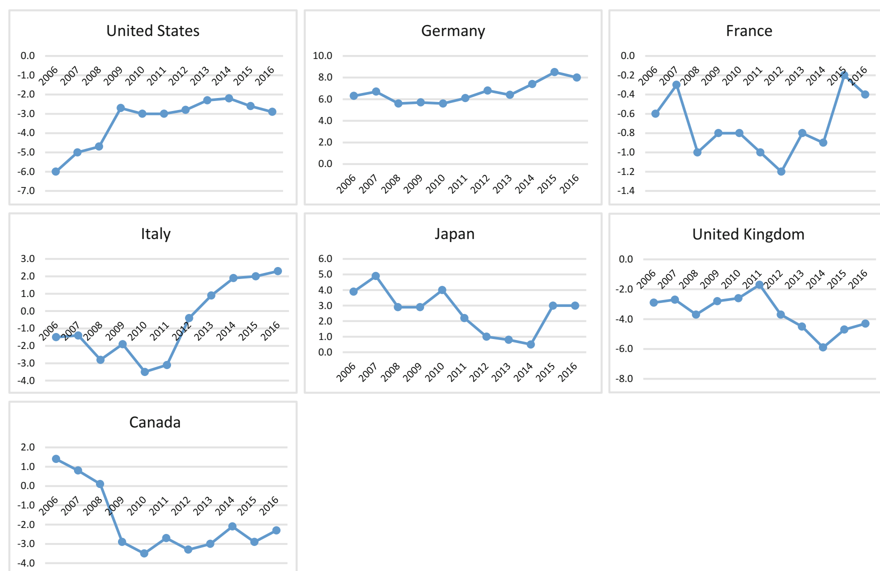

Fig. 13 Current account balance

The fiscal sustainability challenges that the G-7 countries have faced are clearly revealed when we examine the movements of various fiscal balances and debt indicators. The government net lending levels plunged in all the G-7 countries, with the lowest levels (mostly negative) recorded in 2009, 2010, and 2011. During the same period, the output gap deteriorated to very low, negative values. Between 2006 and 2016, the net debt and gross debt increased steadily. Overall, during and in the aftermath of the global financial crisis, the G-7 countries experienced challenging fiscal vulnerabilities. Germany stood out as the strongest G-7 economy, being able to waiver the negative effects of the crisis with mild and temporary volatilities and maintain fiscal sustainability. Japan, on the other hand, appeared to be an economy in which the negative impacts of the crisis have lingered much longer, making the recovery path more painful and extended.

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