

# Chapter 1

## Introduction

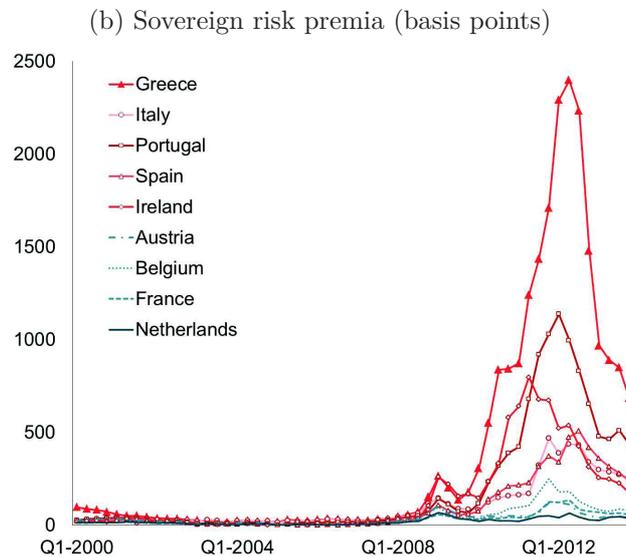
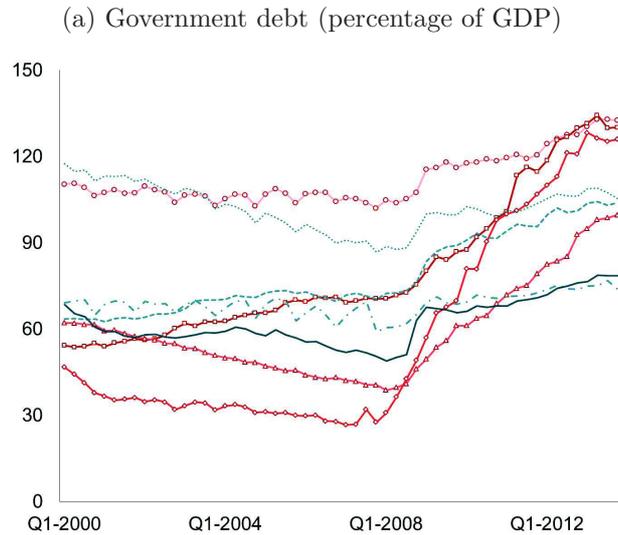
*“A national debt, if it is not excessive, will be to us a national blessing.”*

-Alexander Hamilton, 1781

A few years ago, when the world faced its most devastating recession in decades, governments worldwide engaged in massive fiscal expansions to keep their economies afloat. The spirit of John Maynard Keynes was clearly tangible in nearly all crisis-hit countries as many governments fiercely raised public expenditures and reduced taxes in an attempt to stimulate aggregate demand and curtail the rise in unemployment. Whether or not these massive Keynesian fiscal endeavours have been successful in mitigating the crisis is still an open-ended question. What is far less ambiguous, however, is the Great Recession’s ‘Great Legacy’: a tremendous increase in government indebtedness.

Panel (a) of Figure 1.1 displays the level of government debt as a share of gross domestic product (GDP). This figure illustrates the steady rise in government indebtedness during the crisis, with some countries experiencing debt ratios of even more than 100%. Of course, borrowing money does not come free, yet involves periodic interest payments. Panel (b) of Figure 1.1 shows the return on long-term government bonds, which is a measure of the government’s cost of borrowing, in comparison to the return on a similar ‘risk-free’ bond. The remaining spread can be interpreted as a *sovereign risk premium* that

Figure 1.1: Government indebtedness and sovereign risk premia in Europe (2000Q1-2013Q4)



*Notes:* Panel (a) plots gross government debt as a share of nominal GDP (quarterly data for Greek debt ratio's were unavailable). Panel (b) shows the trend in quarterly long-term (10-year) government bond returns, minus the return on a similar German bond which is typically assumed to be risk-free. *Source:* OECD National Accounts Statistics.

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compensates investors for the risk of non-repayment by the government.<sup>1</sup> In the years leading up to the crisis, between 2000 and 2008, sovereign risk premia were close to zero, which suggests that investors were confident about the government's ability and willingness to honour its debt obligations. Consequently, when studying the impact of discretionary fiscal policy on the economy, the academic literature mostly ignored the sovereign risk premium and, instead, assumed governments could borrow at very low costs.

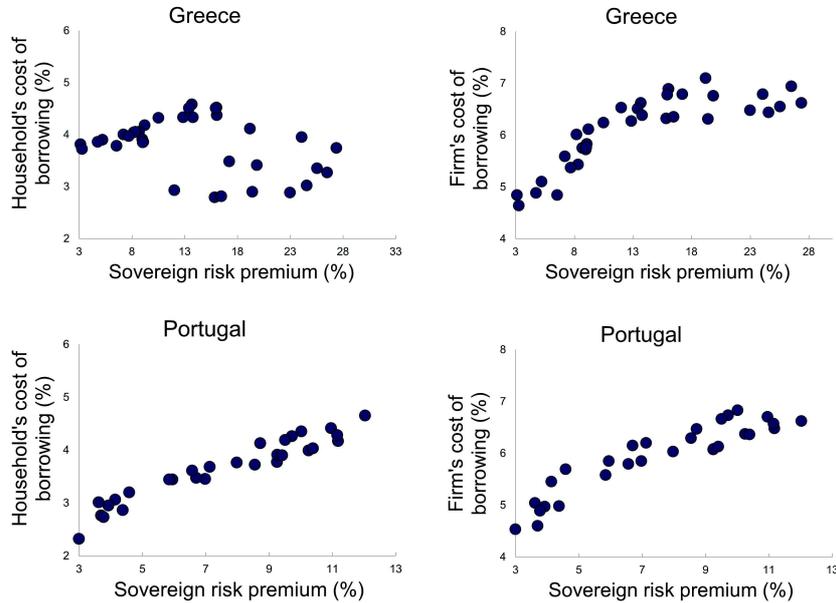
This assumption, although realistic during 2000-08, no longer seems to apply for at least some countries following the crisis. As Figure 1.1 shows, those countries that became heavily indebted after 2008 were required to pay a much higher interest rate than the risk-free rate and thus faced a higher sovereign risk premium. The sovereign risk premium directly influences the government's cost of borrowing and therefore the *sustainability* of fiscal policy. Higher sovereign risk premia might also adversely affect private credit conditions. For instance, most banks hold government bonds as collateral in order to borrow money from the central bank or from other banks. When the government is expected to renege on its debt obligations, the collateral value of these bonds falls which makes it more difficult for banks to attract funding at low interest rates. When faced with higher interest rates, banks tend to 'pass' the costs onto their clients and raise interest rates on the loans they supply to households and firms. Figure 1.2, for instance, shows how private borrowing costs in Greece and Portugal, the two countries in Europe that faced the most dire sovereign debt problems, moved in the same direction as the sovereign risk premium during the height of the crisis. Higher interest rates, in turn, discourage investment and thereby slow down economic activity. Therefore, sovereign risk premia also affect the *economic impact* of fiscal policy through their effects on private credit conditions.<sup>2</sup>

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<sup>1</sup>Throughout, the terms 'government' and 'sovereign' are used interchangeably.

<sup>2</sup>There are other channels through which higher sovereign risk premia could affect private credit conditions. For instance, when the government faces extremely high borrowing costs which it wants to reduce, people might expect the government to raise taxes and reduce public spending in order to bring down the debt level. In some critical cases, the government might even appropriate and sell private properties, and use the proceeds to redeem its debt obligations. Such fiscal actions reduce private net income and private wealth, and makes it more difficult for households and firms to redeem their own debt obligations. Being more risky borrowers, households and firms would then be more likely to face higher borrowing costs. For an empirical account of the relationship between sovereign risk and private credit conditions, see Bruyckere et al. (2013), and references therein.

Figure 1.2: Public and private cost of borrowing (2008M1-2012M12)



*Notes:* The figures show the composite cost of borrowing (which is a weighted average of interest rates on short- and long-term loans) for households and non-financial corporations (vertical axis), and the yield on 10-year government bonds minus the yield of a similar German bond (horizontal axis). *Source:* ECB Statistical Data Warehouse.

Given the significant rise in government debt in recent years and the associated surge in sovereign risk premia in a number of advanced economies, economists are forced to think differently about the role of sovereign risk when studying fiscal policy. This thesis is a step towards this new way of thinking. Particularly, my aim is to investigate the implications of sovereign risk for various aspects of fiscal policy, such as the sustainability of fiscal policy, the effects of fiscal policy on aggregate demand and the design of optimal fiscal policy. One simple, yet important message emerges recurrently: the weaker are a country's public finances, the less effective are conventional fiscal stimulus measures in raising aggregate demand. One could say that, when excessive, a nation's debt will no longer be a blessing, yet rather a *curse* on fiscal policy.

I start my venture in Chapter 2 with a simple theoretical model to study the sustainability of countercyclical fiscal policies. When fiscal policy is countercyclical, it means that the government reduces taxes (or raises expenditures) whenever the economy is in a recession and raises taxes in times of economic

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prosperity.<sup>3</sup> Because tax reductions stimulate household consumption, countercyclical fiscal policies generally help stabilise the economy. Of course, such policies also imply that the government runs budget deficits from time to time, which adds to the accumulation of a country's public debt. These short-run budget deficits do not necessarily pose a threat to debt sustainability, as long as the debt converges to some constant long-run level over time. In the model, I therefore assume that, whenever the debt exceeds this long-run level, the government will raise taxes in order to bring the debt down.<sup>4</sup> Given this assumption, I show that countercyclical fiscal policies can be used to stabilise the economy, without generating explosive debt dynamics. This is good news for countries that occasionally face an economic crisis and rely on expansionary fiscal policy to prevent the crisis from escalating.

Countercyclical fiscal policies are less likely to be sustainable, however, in the presence of sovereign risk. As suggested by Figure 1.1, when government debt reaches historically high levels, there might be a strong rise in the sovereign risk premium as investors express their concerns about the government's debt repayment capacity.<sup>5</sup> Figure 1.2, in turn, suggests that a higher sovereign risk premium raises private borrowing costs.<sup>6</sup> Finally, higher private borrowing costs reduce consumption and investment. Hence, whenever there is a recession, a countercyclical response of fiscal policy that leads to a reduction in taxes and increase in debt may cause consumption to *fall* rather than rise, thereby worsening the recession. When consumption falls and fiscal

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<sup>3</sup>These measures are typically 'automatic' in nature. For instance, when an economy faces a recession, many people lose their jobs. Hence, national income falls and the government's tax revenue automatically falls as well. At the same time, those people who have lost their job might receive unemployment insurance from the government, which implies that government expenditures automatically rise.

<sup>4</sup>For instance, governments in the euro area may want to raise taxes when their debt-to-GDP ratio exceeds 60%, which is the maximum permissible debt ratio imposed by the European Stability and Growth Pact.

<sup>5</sup>Such concerns may arise, for instance, if the only way to repay the debt is to raise taxes to very high levels; levels that are politically infeasible and therefore unlikely to attain.

<sup>6</sup>The model that I use does not explicitly feature a financial sector through which changes in sovereign risk are channelled to interest rates on household and firm loans. Instead, consumption behaviour of households—who are also the owners of the firms in the model—is captured by an equation in which current consumption is positively related to future income (to reflect wealth effects) and negatively related to the real interest rate (to reflect savings opportunities). The real interest rate, in turn, is positively related to the sovereign risk premium. Therefore, a stylised link between sovereign risk and private expenditures is established indirectly without explicit notion of private borrowers and lenders.

policy remains countercyclical, the government is forced to cut taxes yet again, causing the sovereign risk premium to go up further and lowering consumption even more. Countercyclical fiscal policy thus becomes a source of instability and might throw the economy into a vicious cycle of rising debt and economic decline.

Under these conditions, the government needs to adopt a more-than-usual aggressive debt-reduction policy in order to bring the sovereign risk premium down and thereby ensure sustainability of fiscal policy. If the government is unable (or unwilling) to pursue such aggressive fiscal adjustment, then the central bank must step in to sustain government debt. It can do so by lowering the interest rate, which offsets the rise in the sovereign risk premium and thereby mitigates the adverse effects on private spending. However, the ability of the central bank to lower the interest rate is not without bounds, as the interest cannot fall below zero percent. In recent years, central banks in both the US and the euro area have faced difficulties because their interest rates have reached this ‘zero lower bound’. An important lesson that can be drawn from this Chapter is therefore that countries should keep their debt levels sufficiently low, such that they can pursue countercyclical fiscal policy to stabilise their economies without upsetting bond markets and raising risk premia.

Whereas Chapter 2 considers the long-run implications of sovereign risk for fiscal policy sustainability, Chapters 3 and 4 focus on how sovereign risk affects the short-run effects of fiscal policy on aggregate output. In Chapter 3, I examine the effects of an increase in government spending on output, which is captured by the *government spending multiplier*. The multiplier-effect of government spending on output can be explained as follows: when the government raises demand for goods and services, firms are pushed to hire more workers to meet the extra demand, which leads to a fall in unemployment and an increase in wages, which in turn allows households to consume more goods and services, thereby pushing firms to hire even more workers, etc. I illustrate this channel using a theoretical model for a small open economy and show that an increase in government spending generally leads to higher output levels. Furthermore, and in line with traditional Keynesian theory, the multiplier tends to be higher in countries that have a fixed, rather than flexible, exchange rate.

The expansionary effects of government spending are substantially dimin-

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ished, however, in the presence of sovereign risk, depending on the prevailing exchange rate regime. Particularly, when the government raises debt to finance its expenditures, it also drives up the interest rate through the sovereign risk premium which reduces private consumption (as in Chapter 2). The presence of the sovereign risk premium thus reduces the multiplier, yet less so if countries have a flexible exchange rate. The latter result arises because an increase in sovereign risk makes holding government bonds less attractive and causes foreign lenders to invest their money outside the country. The consequent depreciation of the country's currency is beneficial to the exporting industry and thereby supports the multiplier. This offsetting effect is absent under fixed exchange rates, which implies that the multiplier can be larger under flexible exchange rates—a result that goes against traditional Keynesian theory.

In Chapter 4, I assess the multiplier under a *monetary union*, i.e. a group of countries that share a common currency. I show that, for small member states, fiscal expansions at the national level can boost output levels (as in Chapter 3) and can even be welfare improving, at least when sovereign risk is absent. However, if a country is large, output fluctuations would be smoothed also through countercyclical monetary policy, which means that tax reductions during recessions would stimulate the economy 'too much' and thereby raise income variability which reduces welfare. Therefore, for larger countries, a pro-cyclical fiscal stance maximises welfare.

This result is reversed in times of sovereign risk: small countries benefit most from pro-cyclical fiscal policies, whereas large countries benefit most from countercyclical fiscal policies. In small countries, the pro-cyclical stance is required to suppress the sovereign risk premium during a recession and thereby mitigate the adverse effects on private consumption. In large countries, a countercyclical stance provides a better balance between fiscal and monetary policy.

The following chapters thus show that, once countries cave under the weight of their accumulated debt, the sustainability, effects and optimal design of fiscal policy change markedly, forcing policymakers to stop exercising Keynes' doctrine and instead take a different approach to achieve stable economic outcomes. I hope my analyses can guide policymakers of today in dealing with the Great Legacy and help policymakers of tomorrow establish a strong line of defense for when the next Great Recession creeps around the corner.

