Fiscal policy and its impact on the economy - An introduction

Lecture Notes for 'Managing the UK economy: Fiscal and monetary policy since 1945' (7SSPN231)

Daniele Girardi*
King's College London

1 Introduction

The study and debate of UK macroeconomic policy requires a grasp of some basic definitions and concepts about fiscal policy, its operation, and its impact on the economy. These lecture notes provide a quick and ready introduction to these topics. We will outline and review the main definitions and ideas about fiscal policy that will be useful for understanding and critically discussing fiscal policy in the UK throughout the rest of the module.

As this is an interdisciplinary module that assumes no prior knowledge, I have written these notes with students who do not have a background in economics in mind. For those who do, this introduction may seem rather simple or repetitive, but it should still serve as a useful refresher.

Please do read these lecture notes before our first lecture. If you do the reading, you will have an idea of what we are talking about and you will benefit from the lecture more, including by being able to ask me to stop on the passages that you found unclear or difficult. If some parts of the lecture notes are not clear to you, don't worry. I'm very happy to receive feedback on what parts of the reading were not clear, and I'll do my best to use the class time to make them clearer. And in any case, understanding every detail is not expected nor necessary for doing well in this module, especially if you don't have a background in economics – just try to get the main broad ideas.

*Lecturer, Department of Political Economy, King's College London.
https://danielegirardi.github.io

2 Macroeconomic Policy

Macroeconomic policy consists of government actions aimed at achieving specific goals for the economy as a whole. These goals typically include macroeconomic stability, low inflation, high employment, and economic growth.

Macroeconomic policy operates through two main channels (or instruments): the government budget, which represents *fiscal policy*, and the Bank of England interest rate, which constitutes *monetary policy*. Both the government budget and the Bank of England interest rate have existed for centuries. However, it is only since around the 1940s that they have been seen and used as tools for managing the economy.

In this first week and in these lecture notes, we introduce fiscal policy. In the second week (and in the corresponding lecture notes), we will discuss the financial system and monetary policy.

3 Fiscal Policy

3.1 Definition and Components

Fiscal policy influences the economy through government spending and taxation, that is, through the government's *fiscal balance*. The government's fiscal balance is defined as government revenues minus government expenditure. For simplicity, let us assume that government revenues all come from taxation. In reality there are other sources of revenues besides taxes, but in a country like the UK they are so small as to be negligible, so we can ignore them.[1] Moreover, it is useful to distinguish between interest spending (interest that the government pays on its debt) and non-interest spending (everything else). Given this, we can see the government fiscal balance as equal to:

$$\text{gov't fiscal balance } (BB) = \text{tax revenues } (T) - \text{non-interest spending } (G) - \text{interest spending } (INT)$$

When the fiscal balance is negative (expenditures exceed revenues), this is called a *budget deficit*. A positive fiscal balance (ie, revenues exceeding spending) is called a *budget surplus*.

The *primary* fiscal balance refers to the difference between tax revenues and non-interest spending (T - G). In other words, the primary fiscal balance ignores interest spending.

[1] They can instead be substantial, for example, in countries that extract and sell large quantities of natural resources through national state-owned companies.

3.2 The government budget in the UK

In the United Kingdom, the process of crafting the government budget operates within a parliamentary system, in which the government needs parliament's authorization to spend money or change tax rates.

For this reason, once or twice a year, the government (and in particular the Chancellor of the Exchequer) lays out to Parliament its budget plans for the next fiscal year. These budget presentations detail total planned expenditure and its allocation across departments; any changes to tax laws and the resulting overall expected revenues. The budget speech to Parliament usually also discusses the state of the economy and the government's economic strategy. Parliament then votes on this plan in the form of a finance bill.

3.3 Government Expenditure

Today, in industrialized economies, the main items of government expenditure are social security, health, education, and military spending, in addition to interest payments on the existing public debt.

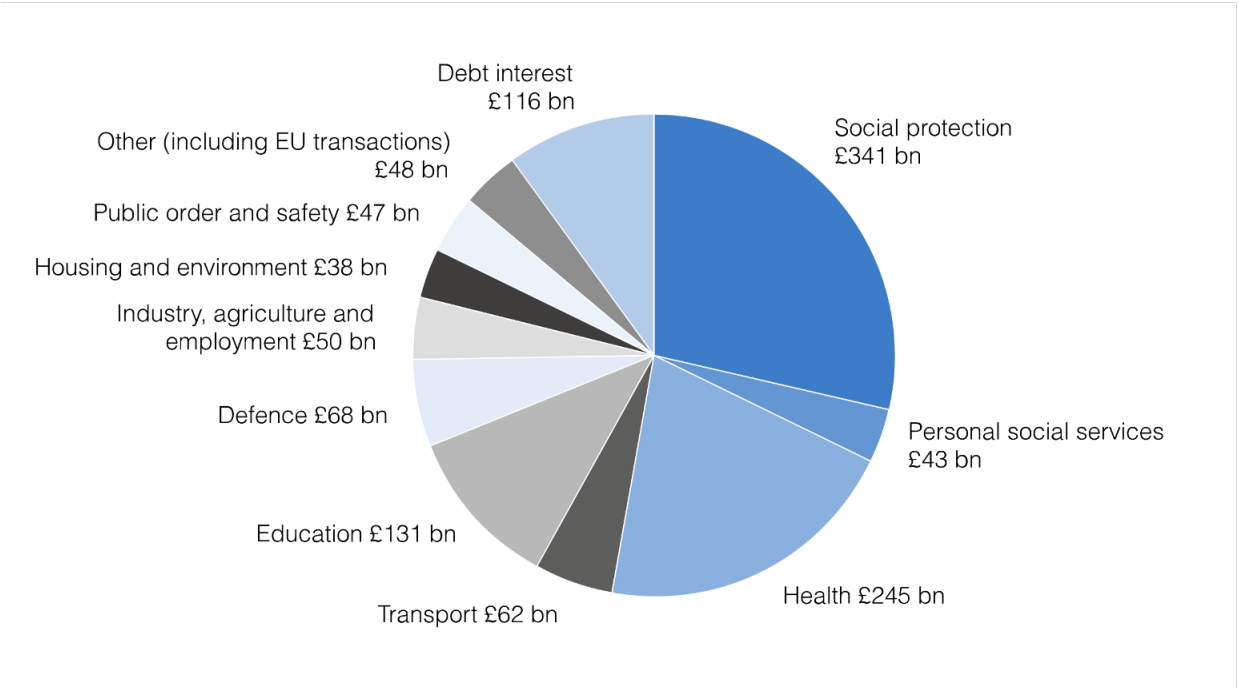
For example, total planned government spending in the United Kingdom in 2023-24 equalled £1,189 billion, which is equal to 44.2% of UK Gross Domestic Product. As shown in Figure 1, the largest component was social protection at £341 billion (accounting for around 29% of total government spending), followed by health spending of £245 billion (around 21% of the total). Education accounted for £131 billion (or around 11% of the total), while debt interest payments required £116 billion (almost 10% of the total). Other significant expenditures included military spending at £68 billion (around 6% of total government spending) and transport at £62 billion (around 5% of the total).[2]

When analyzing government spending, there are some basic categorizations to be aware of: between interest spending and non-interest spending; between spending on goods and services versus transfers; and between current spending and investment.

Interest spending vs. non-interest spending Interest spending is just interest that the government must pay on its own accumulated debt. The government pays interest to the holders of government bonds: individuals who lent to the government and now have a right to receive interest payments. Non-interest spending is everything else.

[2]These numbers represent planned expenditures and come from the Spring 2023 Government budget, available at https://www.gov.uk/government/publications/spring-budget-2023/spring-budget-2023-html.

Figure 1: UK Government planned expenditure in 2023-24



Source: UK government Spring 2023 budget, available at
https://www.gov.uk/government/publications/spring-budget-2023/spring-budget-2023-html

Spending on goods & services versus transfers Government spending on goods and services involves the government acting as a purchaser in the economy. This includes buying physical items like military equipment, medical supplies, or office furniture, as well as purchasing services such as hiring teachers, doctors, civil servants, or contracting construction companies to build roads and hospitals. When the government spends on goods and services, it directly contributes to economic production by creating demand for the products and services that it buys (including the labour it hires). By doing so, it directs economic resources (fixed capital, intermediate inputs, and labour) towards producing those goods and services.

Transfer payments, by contrast, involve the government redistributing money from taxpayers to recipients without receiving any goods or services in return. Examples include unemployment benefits, state pensions, disability allowances, housing benefits, and income support payments. These are essentially financial transfers where the government acts as an intermediary, taking money from some citizens (through taxation) and giving it to others who meet certain criteria.

The economic effects differ significantly. When the government buys goods and services, it directly creates demand for production and employment. Transfer payments work indirectly - they increase the disposable income of recipients, who may then spend that money on

consumption, but the government itself isn't directly purchasing anything or contributing to current production.

Current spending versus investment *Current spending* (or government consumption) covers the running costs of government activity: day-to-day operational expenses that are consumed within the current budget period. It is spending on items that are purchased and used or consumed in the same fiscal year, and will not last beyond the current fiscal year. These include wages of doctors, teachers or government employees; transfers like social security payments; drugs to be used by the NHS, etc. This is spending that you have to repeat in the same way every year if you want to keep the same government activity in place. These expenditures keep government services running but don't create durable assets - they provide immediate benefits but are essentially "used up" within the year.

Investment spending, instead, is spending on creating long-term assets that will last for a substantial amount of time and will keep providing benefits over multiple future years. Examples of government investment include building a road, a hospital, or a school; or buying durable hospital equipment that will last many years.

3.4 Taxation

The government obtains revenues by levying taxes on individuals and businesses.

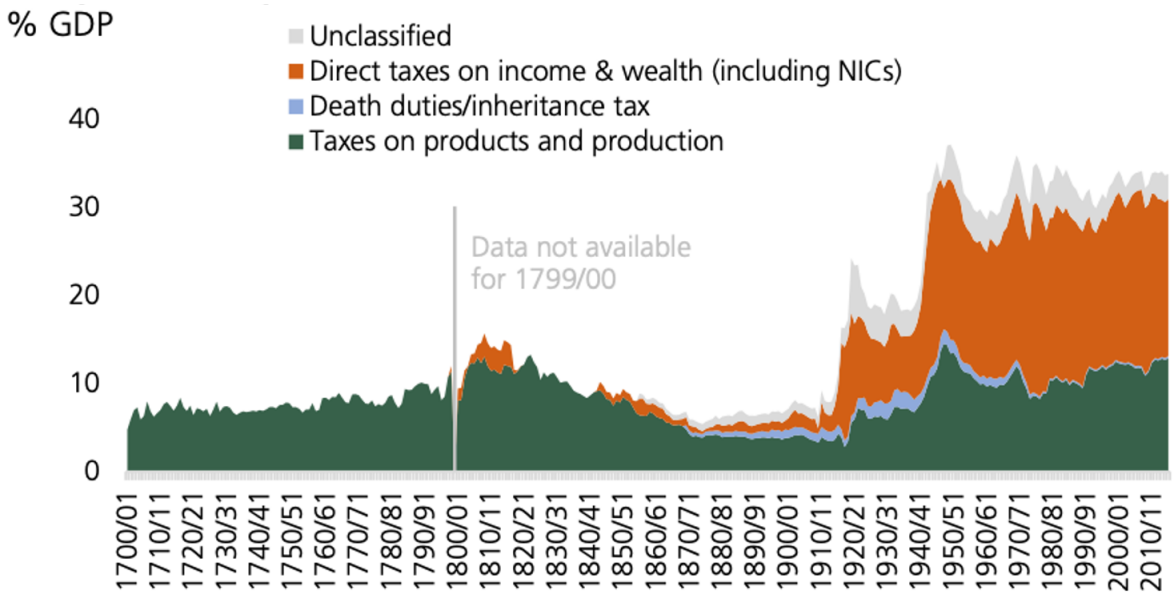
The most important distinction is between *direct* and *indirect* taxes. *Direct* taxes include income taxes on individuals, corporate taxes on firms' profits, and wealth or inheritance taxes. They are levied directly on individuals or organizations. The taxpayer is responsible for paying the tax directly to the government.

Indirect taxes are taxes on transactions (typically on the purchase of goods and services). They encompass sales taxes such as VAT, tariffs, excise duties and custom duties. While businesses collect them and pay them to the government, the economic burden usually falls (at least in part) on the consumer because the firm can add the tax to the purchase price. When you go to the restaurant, for example, VAT is typically added to your bill.

A tax is considered *progressive* if the tax rate increases with income or wealth levels. In the United Kingdom, income taxes are progressive: the higher your total income, the higher the share of it that you have to pay in taxes. While direct taxes can potentially be progressive, indirect taxes are by their very nature not progressive. For example, the VAT rate on a restaurant meal does not change based on whether the person or family eating at the restaurant is poor or rich.

In the United Kingdom, as well as in other advanced economies, tax revenues are currently

Figure 2: Composition of government revenues in the United Kingdom, 1700 to 2016



Source: Bank of England, A millennium of macroeconomic data, V3.1, 2 March 2017

dominated by income taxes, which account for over 40% of total government revenues.[3] Value Added Tax (VAT) is the next most important source of revenues, accounting for around 15% of the total. Other significant sources of tax revenues in the UK are corporation tax (around 8% of total revenues), council tax (around 4%), business rates (around 3%)[4] and fuel duty (around 2%).[5]

Taking a long-term view, the composition of government revenues has changed dramatically in the last 300 years in the United Kingdom, as shown in Figure 2. Until the early 20th Century, tax revenues were low relative to the size of the economy, equalling around or less than 10 percent of national income, and were dominated by indirect taxes – in particular, sales taxes. Since the first World War, tax revenues became much larger in relation to the size of the economy (reaching between 30 and 40 percent of national income) and direct taxes – and in particular income tax – became dominant.

In other words, since World War I, there has been at the same time a large increase in the share of national income paid in taxes, and an equally dramatic compositional shift from indirect to direct taxes.

[3] This figure includes national insurance contributions, which are effectively a tax on earned incomes.

[4] In the UK, business rates are property taxes on non-residential buildings (shops, offices, pubs, warehouses, factories, etc.).

[5] These percentages were computed from figures published by the Office for Budget Responsibility in 'A brief guide to the UK public finances ', March 2025 version, available at https://obr.uk/docs/Brief_guide_March_2025.pdf.

4 The government budget and the economy

4.1 The Economy Affects the Budget

While some changes in government spending and taxation are the result of discretionary (ie, explicit and intentional) policy decisions, both public expenditure and taxation also 'mechanically' fluctuate in response to economic conditions.

First consider the revenue side. Higher economic activity tends to lead to higher tax revenues, even without the government making any change to tax rates. The mechanism is simple: for a given tax rate (or, more precisely, a given set of tax rates), higher economic activity means that these rates are applied to higher incomes, raising total tax revenues. Moreover, as long as income taxes are progressive (ie, higher tax rates apply to higher incomes), an increase in national income means that more people and firms move into a higher tax rate than into a lower one.

Now consider the expenditure side. Certain components of government spending, known as *automatic stabilizers*, automatically increase when GDP is lower (again, also in absence of any intentional policy change by the government). These automatic stabilizers include unemployment benefits and income support payments. In a recession, for example, more people lose their job and become eligible for unemployment benefits, and more people fall below the poverty line and become eligible for income support payments.

All this has a very important corollary: other things being equal, *the government budget deficit tends to increase during recessions and to decrease under strong economic growth*, even in absence of any intentional policy measure.

4.2 The Budget Affects the Economy

Although government spending and taxation are influenced by economic conditions, they also have an effect on the economy. Indeed, the whole point of fiscal policy is exactly to use the government budget to affect economic conditions.

To understand how the fiscal balance affects the economy, we can start by seeing the Gross Domestic Product (a measure of total national production, or, equivalently, of total national income) as the sum of its final uses.

Seen in this way, the composition of the economy's output (or income) is given by the following equation:

$$GDP = C + I + G + X - IM. \tag{1}$$

In this formula:

- GDP represents Gross Domestic Product: the market value of all goods and services produced in the country during the year.
- C represents private consumption: goods and services purchased by private households for their own consumption during the year
- I represents private investment: durable fixed assets purchased by private households (houses) and by businesses (machinery, equipment and structures).
- G represents government spending on goods and services, therefore excluding interest payments and transfers (note that now we are slightly changing the definition of G: in this formula we are excluding transfers from G, while in the equation in Section 3.1 we did include transfers in G)
- X represents exports: goods and services produced domestically but sold to foreigners
- IM represents imports: goods and services purchased from abroad by domestic agents.

Equation 1 allows us to lay out the main possible ways in which government fiscal policy (spending and taxation) can affect the level of economic activity.

First, and most obviously, the formula shows that government spending on goods and services (G) directly affects GDP. If the government increases its demand for goods and services, firms will meet this increased demand by increasing production (as long as they have the ability and the financial incentive to do so).

Moreover, both government spending G and taxation T have *indirect* effects operating through private consumption (C), investment (I), exports (X) and imports (IM).

Higher government spending G increases people's and firms' incomes, potentially raising private consumption C and investment I. This triggers a Keynesian *multiplier effect*: more government purchases means more money in the pockets of firms and workers, who go ahead spending part of this extra income, which in turn raises the incomes of other firms and workers, who will also spend more, in a virtuous cycle that leads to higher production and income (and therefore more demand for workers, and lower unemployment) in the economy. The multiplier effect can mean that one pound of increased government spending leads to an increase in GDP by more than one pound. However, in some cases, higher government spending might also displace resources from private consumption and investment, at least in part. This can happen when the economy is already operating at full capacity – already fully utilizing all the available labor and capital – so that the only way to meet an increased

demand from the government is to redirect resources from production for private uses to production for the government.[6]

Higher taxation reduces income available for private consumption and investment, so it generally reduces economic activity.

More government spending, or lower taxes, also tend to increase imports. If people have higher incomes and increase their demand for goods and services, part of this increased demand will fall on domestically produced goods and services, but some part will also fall on goods and services produced abroad. Through effects on exchange rates, fiscal policy can affect imports and exports also in other complicated ways, that we will not discuss for now but might discuss when relevant during the module.

We can draw the following takeaway from this discussion: *Generally speaking, an increase in government spending boosts GDP and reduces unemployment, while an increase in taxation lowers GDP and increases unemployment.*

It is conventional to call a decrease in the government deficit (which can be achieved through lower spending or higher taxes or a combination of both) a *fiscal contraction* (or *fiscal consolidation*, or sometimes *austerity*). Instead, *fiscal expansion* refers to an increase in the deficit (higher spending or lower taxes or a combination of both).

Fiscal expansion is generally expected to boost economic activity and reduce unemployment. However, depending on the circumstances, it might also have undesirable side effects: by raising demand for goods and services it might create inflation; by raising demand for imports it might produce a trade deficit where imports outpace exports; moreover, as government spending outstrips revenues, fiscal expansion can increase public debt.

Fiscal multipliers are often used to quantify and summarize the economic impact of fiscal policy changes. By estimating fiscal multipliers, we try to answer the questions: By how much will a fiscal expansion boost GDP? And by how much will a fiscal contraction decrease GDP? Specifically, the *spending multiplier* indicates how much GDP increases if government spending increases by £1, while the tax multiplier shows how much GDP decreases if taxation increases by £1.

Generally, *fiscal multipliers are higher when the economy is working below capacity and unemployment is high.* When the economy is depressed and not using all the available resources (including the available labour), an increase in government demand can be fully met without subtracting any resources from production for private consumption and investment, and without necessarily pushing prices and wages up by a lot. This results in a high multiplier:

[6]This happened for example during the two world wars: government demand for military equipment was huge and the only way to meet it was to reconvert industrial plants from civilian production to military production.

fiscal stimulus can substantially increase economic activity. Conversely, if the economy is already close to full capacity, already fully utilizing all the available labor and equipment, government demand ends up competing for scarce resources with private demand, resulting in increased prices and displacement of private production. Under these full-employment conditions, the multiplier is low: there is not much margin for fiscal expansion to raise activity, since the economy was already producing the maximum (or close to the maximum) possible output.

This has an important corollary: it means that fiscal expansion is most powerful (and contraction most harmful) when the economy is weak or depressed. It suggests that policy-makers should generally use the government deficit as a *shock absorber*, letting it increase in bad times, and reducing it in good times.

5 Public Debt

More often than not, the government runs a deficit. Deficits are financed by borrowing from the public, which leads to the accumulation of public debt. Budget deficits add to the public debt (measured in current pounds), while budget surpluses reduce it. Deficits (or surpluses) are therefore the *flows* that add (or subtract) from the *stock* of public debt.[7]

A common fallacy is to think about public debt as if it was analogous to the debt of a private firm or household. In many important respects, it is very different. First, unlike a household, the government does not need to repay its debt in full. If you take out a mortgage from a bank, at some point in the not-hugely-distant future you will have to repay it in full. This is not true for the government: the government can always renew its debt by issuing government bonds. Moreover, what matters for economic analysis is not the absolute level of public debt measured in pounds, but rather the debt-to-GDP ratio: public debt divided by Gross Domestic Product (and usually expressed as a percentage). It makes sense to evaluate the size of the public debt in relation to the potential for raising revenues, rather than in current pounds, and the potential yearly revenues of a government are proportional to national production and income.

The important corollary of this discussion is that, generally speaking, *public debt is considered sustainable if the debt-to-GDP ratio remains stable or decreases over time.*

[7] In macroeconomics, a flow is a stream of payments over a period of time, while a stock is a magnitude that can be measured at a single point in time.

5.1 The Dynamics of Public Debt

While budget deficits lead to increases in public debt measured in pounds, the debt-to-GDP ratio depends on additional factors beyond the fiscal balance. To be more precise, the evolution of the debt-to-GDP ratio over time is affected by the primary deficit $(G - T)$, the interest rate (i), the real economic growth rate (g)[8], and the inflation rate (π).

Economists have derived an (approximate) mathematical formula that expresses the formal relationship between government debt dynamics and its determinants. This equation expresses the change in the debt-to-GDP ratio over time as a function of the primary deficit, the interest rate, the economic growth rate and the inflation rate. The equation is as follows:

$$\frac{Debt_t}{GDP_t} - \frac{Debt_{t-1}}{GDP_{t-1}} = (i - g - \pi)\frac{Debt_{t-1}}{GDP_{t-1}} + \frac{G_t - T_t}{GDP_t} \tag{2}$$

I don't expect students in this module to learn this formula by heart, nor to be able to derive it. If you can't event start to read the formula, that's totally fine (although I would like you to at least give it a try). However, the formula can be useful to illustrate the determinants of the evolution over time of the debt-to-GDP ratio.

On the left side, we have the change in the debt-to-GDP ratio over time: The difference in debt-to-GDP between time t and time $t - 1$. On the right side, we have a function of its determinants.

The formula confirms that, other things being equal, a higher deficit (G - T) leads to a higher increase in debt-to-GDP over time. A higher primary deficit $(G - T)$, meaning that government spending exceeds tax revenues before interest payments, directly raises the debt stock measured in current pounds and therefore increases the numerator in the debt-to-GDP ratio.

A higher interest rate (i) increases debt-to-GDP because the government must service its existing debt; a higher interest rate means higher interest spending by the government, and therefore a higher deficit. By contrast, a higher real growth rate (g) expands the size of the economy, increasing the *denominator* of the debt-to-GDP ratio, thus reducing the ratio itself. Finally, higher inflation (π) reduces the real value of outstanding debt expressed in current pounds. Like real growth, also inflation increases the denominator in the debt-to-GDP ratio. As prices and nominal GDP (ie, GDP measured in current pounds) rise, the debt-to-GDP ratio falls.

An important implication of Equation 2 is that *the public debt-to-GDP ratio tends to*

[8]The *real* (as opposed to nominal) growth rate is a measure of the percentage change in the volume of production, ignoring changes in prices. The *nominal* growth rate, instead, is the change in GDP measured in current pounds and it increases both if the volume of production increases and if the level of prices increases. The nominal growth rate equals the real growth rate plus the rate of inflation.

increase during recessions and to fall under sustained economic growth.

Equation 2 also yields another less intuitive but not less important insight, one we probably wouldn't be able to infer without the formula: *When the sum of real growth and inflation exceeds the nominal interest rate ($g + \pi > i$), the debt-to-GDP ratio can decrease or remain stable even if the government runs a deficit.* Somewhat counter-intuitively, a budget deficit does not necessarily imply an increase in the debt-to-GDP ratio.

We can also note that in Equation 2, the $(i - g - \pi)$ term is multiplied by the pre-existing debt-to-GDP ratio $\frac{Debt_{t-1}}{GDP_{t-1}}$. In other words, the higher the level of pre-existing debt, the more important is the role of the $(i - g - \pi)$ term in influencing debt dynamics (relative to the role of the primary budget deficit).

As we will see during this module, these insights are not just of theoretical interest, but very important in practice. In the 1945-1973 period, the UK was able to sharply reduce its debt-to-GDP ratio while running budget deficits most of the years, thanks to a growth rate of nominal GDP significantly higher than the interest rate.[9] As the initial level of accumulated debt in 1945 was extremely high, the role of the $(i - g - \pi)$ component was particularly powerful.

Figure 3 displays the historical evolution of the public debt-to-GDP ratio in the United Kingdom since 1700 CE. It is clear from the Figure that the debt-to-GDP ratio increases during wars, epidemics, and recessions. This is true virtually in all countries in all modern historical periods.

Moreover, we can see that today's public debt level of approximately 100% of GDP is historically pretty high, but not unprecedented at all. For example, public debt has been much higher (as a share of GDP) during the Napoleonic Wars, during the Great Depression, and after World War II. Moreover, given historical patterns, the recent rise in public debt is exactly what one would expect after the occurrence of a major recession (the one of 2008-09) followed by a major epidemics (Covid-19).

We can also see that the period we will study in this module - 1945 to today - is characterized by two main phases from the perspective of public debt: A period of steep decline between 1945 and 2007, when public debt declined from almost 250% of GDP in 1946-47 to around 35% of GDP in 2007; and then a new increasing trend after 2008, leading to today's public debt level of around 100% of GDP.

[9] The growth rate of nominal GDP is equal to the sum of the real growth rate and inflation. In other words, the nominal growth rate is $g + \pi$.

Figure 3: UK Government debt (% of GDP), 1700-2020