SUSTAINABLE FINANCE LAB

GAINING A FULLER PICTURE

Assets and liabilities in the euro area

In this paper

To gain a fuller picture of debt sustainability, this report investigates the assets and liabilities of governments, households and firms within the eurozone.

This fuller picture shows that EU countries differ vastly regarding the composition of their balance sheets, with significantly different shares of financial and fixed assets across the various sectors.

As such, this approach changes the way we look at debt sustainability and shows that the 60% fiscal debt norm of the EU's Stability and Growth Pact should never be used in isolation from other variables.

Roosa Timonen, Herman Beun, Sara Murawski & Rens van Tilburg

May 2024

WORKING PAPER

Colofon

Utrecht, May 2024.

The Sustainable Finance Lab (SFL) is an academic think tank whose members are mostly professors from different universities in the Netherlands. The aim of the SFL is a stable and robust financial sector that contributes to an economy that serves humanity without depleting its environment. To this end the SFL develops ideas and provides a platform to discuss them, thus bridging science and practice.

Working Paper

Sustainable Finance Lab publishes different types of publications. This is a Working Paper. In our working papers, SFL members, employees or associates work out ideas that have a more reflective and academic nature. These publications typically do not contain concrete (policy) proposals.

This paper is an update of the background paper *'More than just government debt: A static analysis of the net debt positions of euro countries'*, written by Maarten Hietland, Francis Weyzig and Rens van Tilburg in April 2014 (the paper was never published). Roosa Timonen did a great job in updating the report, building on the data collection of Calvin Vella. Herman Beun improved the methodology and Sara Murawski and Rens van Tilburg coordinated the finalization of the project.

SUMMARY

The discussion on debt sustainability often focuses exclusively on public debt levels, like the EU Stability and Growth Pact with its norms for exclusively government deficits and debt levels. The lesson of the eurocrisis was that for debt sustainability of an economy also private debt levels matter. As a result, since 2011 the Macro Economic Imbalance Procedure (MIP) also includes indicators for current account imbalances, excess private debt accumulation or the building up of housing bubbles.

To gain a fuller picture this report broadens the view yet one step further, by showing not only the debts (liabilities) both public and private, but also the development of the assets of governments, households and firms, as far as the data availability allows. The report investigates the period starting in 2014, because it is the first year of a period of uninterrupted aggregate GDP growth in the EU. The report shows movements in key indicators for the countries under review.

The fuller picture of this report shows that EU countries differ vastly regarding the composition of their balance sheets, with significantly different shares of financial and fixed assets across the various sectors. By doing so it creates a more complete picture of EU countries' overall financial positions. This is relevant for discussions on debt sustainability, especially in light of the on-going reform of the EU's fiscal rules, and the looming discussion on fiscal consolidation in the post-covid era while acknowledging the necessity of climate-related and other investments.

Government debt to GDP ratios over the period under consideration are decreasing or at least stabilising in most of the EU countries, France being the most notable exception. When looking at net financial government assets, most countries had (positive) growth over 2014-2019. However, in 2020 and 2021 almost all EU countries had negative values – or more precisely, an excess of liabilities. The movements in government net financial assets are stronger than in government debt,

supporting our hypothesis that an analysis of the sustainability of government debt should also consider movements on the financial asset side of the government balance sheet. Nordic countries have the highest levels of net government financial assets (as a percentage of GDP), whilst Southern European countries seem to have the lowest levels. Additionally, the positions of the most indebted countries deteriorated within the time analysed. In other words, the general picture of a European South that is more indebted than the North becomes even worse when assets are taken into account as well.

Households tend to have far higher financial assets than liabilities, with the highest net values in the Nordic countries and Italy. Firms on the other hand have negative net positions in all 27 EU states. It appears countries with more multinational companies, like Sweden, Denmark, Ireland and Cyprus, tend to have lower net firm financial asset positions. These tax regimes often mean that assets and liabilities held by the rest of the world have a stronger effect on these countries' economies. Looking at the rest of the world sector (explained in 2.4), we see that foreign financial assets and liabilities contribute to a relatively small share of GDP for most EU countries. However, the opposite holds for countries such as Ireland, Cyprus, and Luxembourg with corporate tax regimes that generally stimulate aggressive tax planning.

At the aggregate level of the economy it appears that among the most indebted countries, Greece has a weak position in terms of net financial assets. Italy, on the other hand, ranks relatively well in the top half of EU countries.

In order to also include non-financial assets in our analysis, we present data on net fixed assets, like buildings and machinery, but also intellectual property. Total net fixed assets come mainly from households and firms. The countries with the highest total net fixed assets are not the same as the ones with the highest total financial assets. Slovakia and Latvia rank highest for net fixed assets, but relatively low for financial assets. Greece ranks relatively weak with both net fixed assets and net financial assets, whereas Italy ranks stronger: above average for net fixed assets and average for net financial assets.

The Netherlands, Germany and Denmark rank relatively well on both accounts.

In conclusion, if we include more variables in our analysis of a country's financial position than only government debt our perspective of its debt sustainability often changes. While the general perspective that the situation in Europe's North is stronger than in the South still holds and the position of Greece is indeed weak in terms of both assets and liabilities, Italy does better in many respects. Countries like The Netherlands and the Nordic countries have very high household financial liabilities, whereas firm financial liabilities are the highest for Ireland and Luxemburg.

This report changes the way we look at debt sustainability and shows that the 60% fiscal debt norm of the EU's Stability and Growth Pact should never be used in isolation from other variables. International institutions and countries that base fiscal analyses, recommendations and policy on debt sustainability analyses (DSA's) should start from a more comprehensive understanding of debt sustainability. This will lead to different assessments about the health and stability of an economy, leading to new insights and discussions about fiscal policy and fiscal space.

CONTENT

1. INTRODUCTION

In the new EU economic governance framework, sound public finances, or debt sustainability, remain the main pillar of European fiscal policy (Council, 2024). Debt sustainability is referred to in terms of public debt in terms of GDP. Focusing on public debt in isolation from other financial and economic factors however provides a limited view of a country's economic health and stability and the desired or "optimal" debt level. The fear of financial markets' response to increased debt levels (which is contested) adds to the inclination of policy makers and politicians to focus one-sidedly on reducing deficits and debts to arbitrary limits (Finance Watch, 2023). This paper argues that the budgetary and financial situation of a country should be analysed from a broader perspective.

The composition of assets and liabilities (both public and private) in individual EU countries remains largely underexposed in the conversation about debt sustainability. Including these factors provides a more complete picture of a country's economic health and stability (and of the EMU as a whole). The balance sheets of EU countries vary largely, reflecting the need for country-specific rules. I n 2022, only 13 EU countries reached the target of a 60% debt-to-GDP ratio, whilst the other 14 member countries exceeded it. The fact that the average ratio for the EU is 86.4% (which increases to 94.2% when only looking at euro-area countries), reflects that this rule is outdated. In addition, euro area government deficits stood at 5.1% (above the target of 3%) in 2021 (Eurostat, 2022a).

Major investments are needed to tackle climate change and build and sustain resilient and social economies. The current stringent fiscal rules slow down the process so critical for the future well-being of our planet. Providing sufficient means for EU countries to make these necessary investments is key. Understanding debt sustainability in a more comprehensive way, moving away from the one-sided focus on public debt expressed as a percentage of GDP, can help to reflect on these financial commitments and needs more thoroughly.

The European Commission uses Debt Sustainability Analyses (DSA's) for each EU country as a reference for assessing public debt risks and indicating the fiscal space that countries have within the economic governance framework. DSA's starting from a more comprehensive understanding of debt sustainability would lead to different assessments about the health and stability of an economy, leading to new insights and discussions about fiscal policy and fiscal space.

Objective of the study

This study provides a fuller picture of the sustainability of government debt amongst European Union countries in 2021 (occasionally for 2020 or 2019 due to data availability). It does so by looking at government and private sector (households and firms) balance sheets. The report also shows movements in key indicators between 2014 (1st year of period of uninterrupted positive European Union aggregate GDP growth post-financial crisis) and 2019 (thus excluding the impact of the COVID-19 crisis on governments' balance sheets) for the select countries under review.

Readers should note that the sustainability of government debt is dependent on several factors that will not be discussed in this report, such as the growth of the underlying economy, the fiscal policy of the government, the political economy etc. Assessments of the individual debt sustainability of countries should therefore go further by also taking these factors into account. This analysis therefore certainly does not provide the last word on the debt sustainability of European Union countries. However, it does provide a more complete picture of EU countries' debt positions than just government debt does. Thus it shows how the DSA's that will play a larger role in the EU member states' budgetary policies can be further improved upon.

Methodology

This paper makes a statistical analysis of the 27 European Union countries, together with euro area and European Union aggregate movements, and Japan and USA as reference countries for certain indicators. Data was collected from Eurostat and IMF databases to construct graphs of relevant indicators of debt sustainability. This paper looks at the differences in debt, assets, and liabilities (general government, household, and firms) between the countries observed. This is done in absolute changes for the period of 2014-2019 to show developments in stable economic times and individually for 2021 (occasionally for 2020 and 2019) to provide the most recent figures. Government is used to represent the general government sector and firms refer to non-financial firms (further reasoning for these choices is provided later in this paper).

For each sector (government, household, firm and total economy) the assets and liabilities are deconstructed into subcategories for 2021. These subcategories are for

both financial and fixed instruments. For financial instruments, the most relevant instruments (that comprise almost all assets and liabilities) are comprised of:

1. Special Drawing Rights and Gold;
2. Currency & deposits;
3. Debt securities (mostly different types of bonds),;
4. Loans;
5. Equity & investment fund shares;
6. Insurance, pension, & standardized guarantee schemes (IPSGS);
7. Financial derivatives & employee stock options; and
8. Other accounts receivable/payable.

For fixed instruments, the most relevant subcategories are comprised of the net value of 5 sub-indicators:

1. Dwellings;
2. Other buildings and structures;
3. Machinery and equipment and weapons systems;
4. Cultivated biological resources; and
5. Intellectual property products.

Outliers are identified and when relevant, economic, and/or social reasons are discussed that may explain these outliers. Most indicators are expressed in terms of the percentage of GDP, to improve cross-country comparisons by decreasing the distorting effect of different-sized countries. However, this is true only insofar as GDP is an adequate indicator of the state of the underlying economies and does not in the meantime undergo large variations unrelated to those economies' actual earning capacities.

This consideration seems particularly relevant for the 35% GDP leap (in current prices) that occurred in Ireland in 2015 as a result of changes to its corporate tax structure that caused large international corporations to redirect internal capital flows. In order to get an idea of the size of this effect on the indicators investigated in this paper, we calculate the change of general government net financial assets over the 2014-2019 period in paragraph 2.1.4 both as a percentage of varying and of fixed (2014) GDP. Our findings suggest that Ireland is indeed the country where changes of GDP over the considered period had the strongest effect on the scaled indicators. A similar exercise could be done for the other indicators as well, but due to time constraints was considered outside the scope of this paper.

Guide to the rest of the paper

The rest of the paper is set up as followed. Section 2 gives an overview of the financial positions of the economies under review. Section 2.1 shows the financial positions of governments, analysing the debt, financial liabilities, assets, and net position of governments. Debt is only looked at in the government sector. Section 2.2 does the same for households, section 2.3 for firms, section 2.4 looks at the rest of the world sector and 2.5. shows the aggregate level of the economy. Section 3 looks at fixed assets on the government, household, firm and total economy levels. Section 4 concludes the report by summarizing the main findings.

2. AN ANALYSIS OF THE FINANCIAL POSITION OF THE ECONOMIES UNDER REVIEW

The financial position of governments

One of the most prominent and widely utilised indicators of the sustainability of government debt is the debt to Gross Domestic Product (GDP) ratio.

This indicator relates the stock of government debt to the productive capacity of the economy, which is arguably the main determinant of the ability of governments to raise revenues to meet debt obligations. The indicator is of a static and (typically) backwards-looking nature since the stock of debt is related to output in one year (typically current or previous). However, future debt obligations will primarily be serviced based on revenues generated from the future output, and subject to future government fiscal balances. Long-term projections on these variables are however inherently volatile, as they are subject to a variety of factors, such as future movements in the global economy and government fiscal policy. Thus, while the debt-to-GDP ratio should not be interpreted as a comprehensive conclusion on the sustainability of government debts, it is still a useful indicator to provide a snapshot of the size of public debt relative to the economy's earning capacity, at a fixed point in time.

Government debt is typically reported at two levels: 'general government' and 'central government'. General government represents a broader level, including central government, together with different government sectors, such as the federal government where applicable, together with local government, select government agencies/institutions, and other government sectors such as social security funds. Specifically, the institutional units included in the general government sector (in line with regulation on national accounts (ESA2010)) are the following:

a. general government units which exist through a legal process to have judicial authority over other units in the economic territory, and administer and finance a group of activities, principally providing non-market goods and services, intended for the benefit of the community.

b. a corporation or quasi-corporation which is a government unit if its output is mainly non-market, and a government unit controls it.

c. non-profit institutions recognised as independent legal entities which are non-market producers and are controlled by the general government; and

d. autonomous pension funds, where there is a legal obligation to contribute, and where the general government manages the funds with respect to the settlement and approval of contributions and benefits.

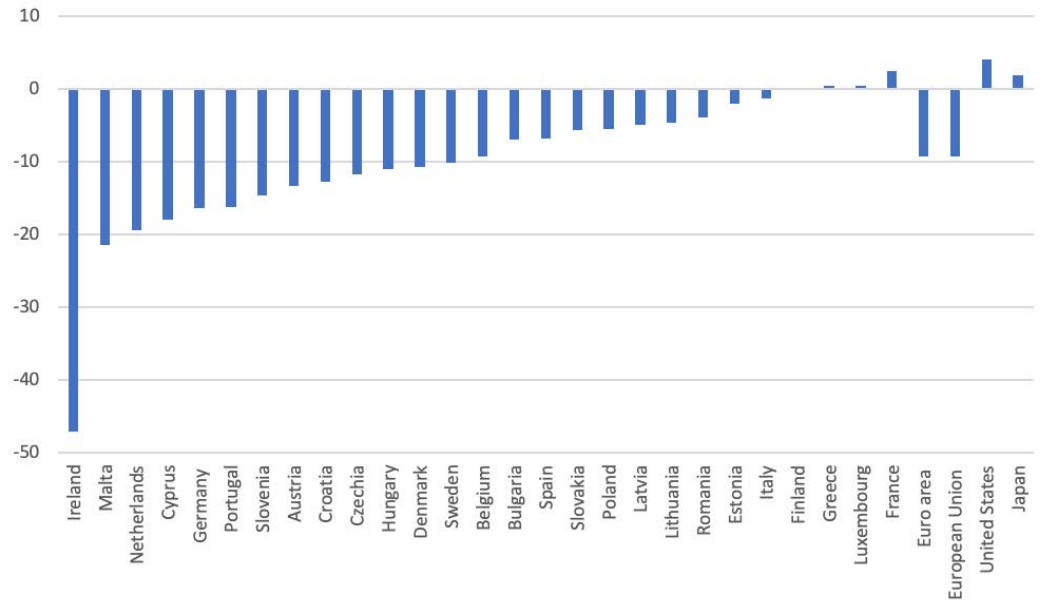
Throughout the rest of the report (unless otherwise indicated), the government should be interpreted as referring to the general government (and hence government debt should be interpreted as general government debt), thus providing a more accurate and broader analysis of public debt obligations. Furthermore, we have decided to exclude any analysis of central government debt on a stand-alone basis, since such data is inherently subject to individual country policies such as government structure, making comparisons amongst countries prone to inconsistency. The debt of non-central government organisations is (typically) guaranteed by the central government, and thus general government debt (as opposed to central government debt) is inherently a more accurate and comparable indicator of the debt obligations of governments.

General government debt

Figure 1 outlines the absolute change (in percentage points (pp)) in the general government debt to GDP ratio between 2014 (1st year of the period of uninterrupted positive European Union aggregate GDP growth post-financial crisis) and 2019 (thus excluding the impact of the COVID-19 crisis on governments' balance sheets) for the select countries under review.

Most European Union countries registered a decrease in their debt-to-GDP ratio throughout the period of sustained economic growth (on an aggregate level). Ireland was the strongest performer, registering an absolute decrease of 47.1 pp. Its growth in GDP is largely due to the high inflow of foreign investments and its status as a tax haven. Malta also experienced strong growth during this period. Conversely, Greece (0.4 pp), Luxembourg (0.4 pp) and France (2.5 pp) all saw their debt-to-GDP ratio increase over the same period. As will be seen in the next figure, Greece was able to reverse this trend during and in the aftermath of the pandemic.

Figure 1. General government debt as a percentage of GDP - absolute change (percentage points) (2014-2019)

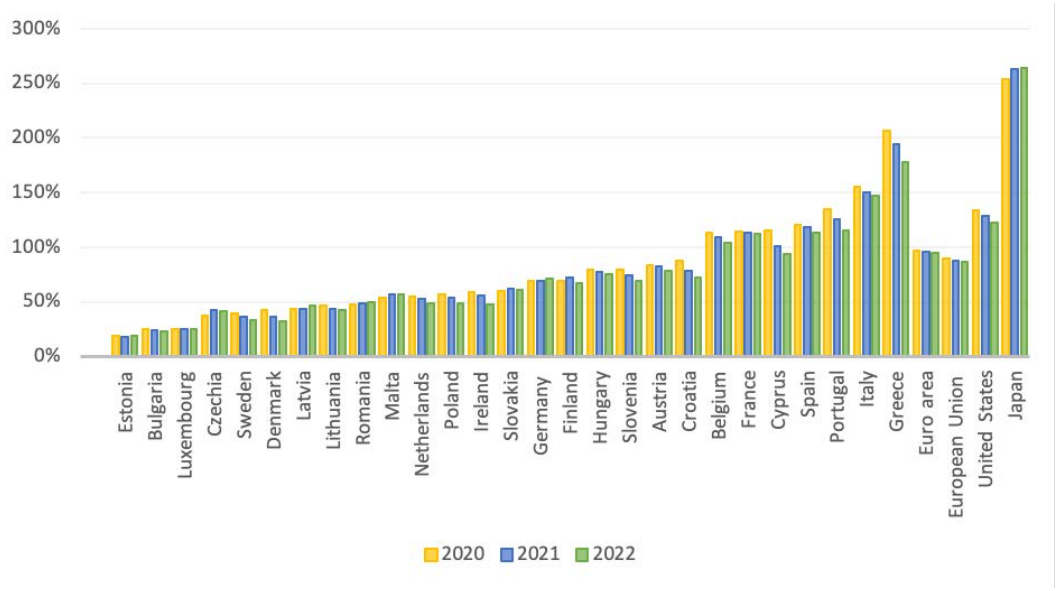


Source: Authors' estimates, based on data accessed from 1. Eurostat: European Union countries, euro area and European Union average; 2. IMF: United States and Japan.

The aggregate general government debt to GDP ratios of the 19 euro area and 27 European Union countries decreased by 9.3% (for both groups of countries) between 2014 and 2019. In terms of reference countries, both the United States and Japan saw their debt-to-GDP ratio increase over the same period by 4.0 pp and 1.9 pp respectively. This trend reversed for the United States during and after the pandemic (as can be seen in the following figures).

Figure 2 outlines general government debt as a percentage of GDP for the select countries under review for the years of 2020, 2021 and 2022.
Throughout the three years observed, the European Union countries with the lowest general government debt to GDP ratio are Estonia (19.0% in 2020), Bulgaria (24.7% in 2020) and Luxembourg (24.8% in 2020). Conversely, in all three years, Belgium (112.8%), France (114.6%), Cyprus (115.0%), Spain (120.0%), Portugal (135.2%) Italy (155.3%) and Greece (206.3%) all have a debt to GDP ratio above 100%. In 2021 and 2022 these ratios slightly decreased for most of the countries observed, possibly reflecting recovery from the pandemic. Overall, Greece's debt-to-GDP ratio experienced the largest drop in the EU (-28.7% since 2020). This may be due to the rapid and strict lockdown measures implemented. All these factors may reflect the high GDP growth as Greece recovers from the pandemic, which seemingly has outweighed its increase in debt. Italy's (- 8.1%) and Portugal's (-20.5%) values also decreased significantly.

Figure 2. General government debt as a percentage of GDP (2020-2022)



Source: 1. Eurostat: European Union countries, euro area and European Union average; 2. IMF: Unites States and Japan.

At an aggregate level, the 19 euro area countries have a debt-to-GDP ratio of 97.2%, which falls to 90.0% when considering the rest of the countries (8) in the European Union. These ratios slightly decreased through the time observed. In the euro-area debt to GDP is projected to experience a stable and mild decline in the next 5 years (until 2027) (Statista, 2022).

In terms of reference countries, the United States and Japan both registered relatively high levels of debt to GDP, at 133.9% and 254.1% respectively. Japan was one of the exceptions with a significant increase of 9.8% over the three years, whilst the United States' ratio dropped by 11.8%. This reflects that out of all countries observed, Japan's debt-to-GDP ratio increased the most and Greece's ratio decreased the most.

Bruegel found that public indebtedness did not play a role in the economic losses resulting from the pandemic, likely due to the ECB's pandemic emergency purchase programme (PEPP)[1]. They did find that the strictness of lockdown measures (30-50%), the deficient quality of governance (35-35%) and the significance of tourism (15-25%) all contributed to more economic losses (Sapir, 2020).

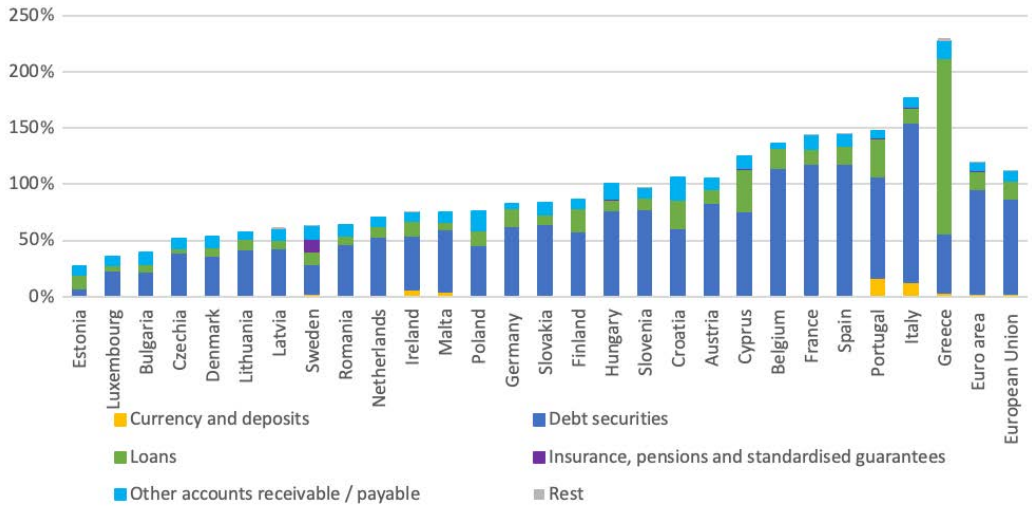
[1] PEPP was a temporary asset purchase programme of private and public assets conducted by the ECB. The total envelope amounted to €1,850 billion. (ECB, 2023)

General government financial liabilities

The financial liabilities on balance sheets are not limited to debt and can include other forms of liabilities. Furthermore, governments also hold financial assets on their balance sheets, which can be utilised to service debt obligations (either through their liquidation or potentially from the revenue streams they generate). A broader assessment of the sustainability of governments' debt positions should consider these financial assets and liabilities and their resulting net positions. The higher the assets in comparison to liabilities may reflect the better capability of the country to pay back its debt. Therefore, it is good to compare the size of both to get an understanding of the economy.

Figure 3 outlines general government financial liabilities as a percentage of GDP for the select countries under review in 2021.

Figure 3. General government financial liabilities as a percentage of GDP (2021)



Source: 1. Eurostat

In 2021 the European Union country with the lowest level of general government financial liabilities as a percentage of GDP in 2020 was Estonia (27.1%), followed by Luxembourg and Bulgaria. While the country with the highest level was Greece (232.5%). Italy ranked second highest, followed by Portugal and then France. At an aggregate level, the 19 euro area countries have a financial liability to GDP ratio that stood at 119.8 which fell to 111.9% in 2021 when taking into account the 27 countries forming part of the European Union.

In terms of reference countries, Japan was once again notable for the magnitude of financial liabilities on its government's balance sheet relative to its GDP (241.6%), with the United States also registering a relatively high ratio (126.2%).

The most prominent financial instrument that comprises most government financial liabilities is debt securities. The only countries where this instrument is not the largest are Greece and Estonia, where loans are by far the largest liability.

When comparing the position of countries in terms of debt and financial liabilities, Estonia remains the least indebted country, while Greece remains the highest indebted country, after Japan. However, the magnitude of 'debt' as a percentage of GDP naturally increases when considering all forms of financial liabilities (and not just debt), not necessarily by the same scale for all countries.

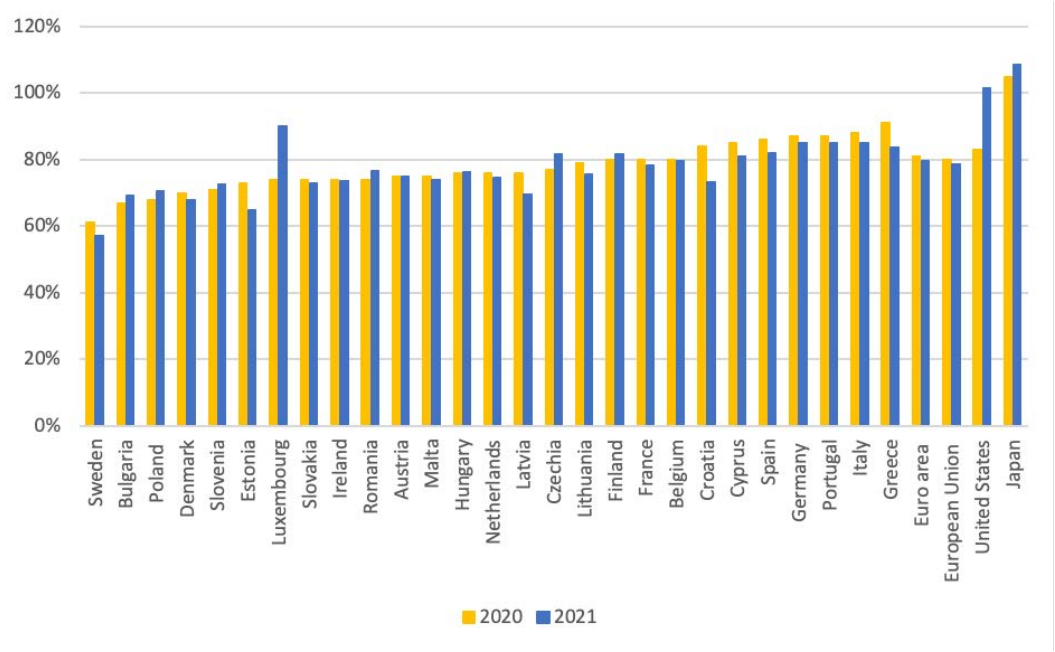
We thus chose to extend our analysis by comparing the size of the debt to total financial liabilities in 2020 and 2021. This shows the extent to which a country's total financial liabilities consist of debt. A low value would reflect that other factors besides general government debt make up the liabilities. Therefore, for these countries with low values, solely looking at debt to GDP could underestimate the amount of liabilities the country has, possibly overestimating their ability to repay their debts.

Figure 4 outlines general government debt as a percentage of total financial liabilities for the select countries under review in 2020 and 2021.

As is visible in the graphs above, general government debt as a percentage of total financial liabilities in 2020 and 2021 is strikingly homogenous in European Union countries. An exception seems to be the large jump for Luxembourg in 2021. Government debt accounts for most of the total financial liabilities of a country. The countries with the highest debt-to-financial liability ratio in 2020 were Greece (90.7%) and Italy (87.9%). In 2021 the top two countries with the highest ratios changed to Luxembourg (90.1%) and Germany (85.1%), whilst Greece dropped to 83.6% and Italy dropped to 84.9%).

Conversely, in 2020 and 2021 Sweden (61.3% in 2020 and 56.9% in 2021) was the country with the lowest ratio, indicating the highest level of financial liabilities relative to debt, primarily explained by a liability related to insurance, pensions and standardised guarantees of 10.8% of GDP. Sweden is the only country with notable liabilities related to insurance, pensions, and standardized guarantees, at 10.8% of GDP. In 2020, Bulgaria (67%) had the second highest relative debt, whilst in 2021 Estonia (64.9%) had the second-highest debt. On average, European Union countries had a debt-to-financial liability ratio of 77.6%.

Figure 4. General government debt as a percentage of total financial liabilities (2020-2021)



Source: Authors' estimates, based on data accessed from 1. Eurostat: European Union countries, euro area and European Union average; 2. IMF: United States and Japan.

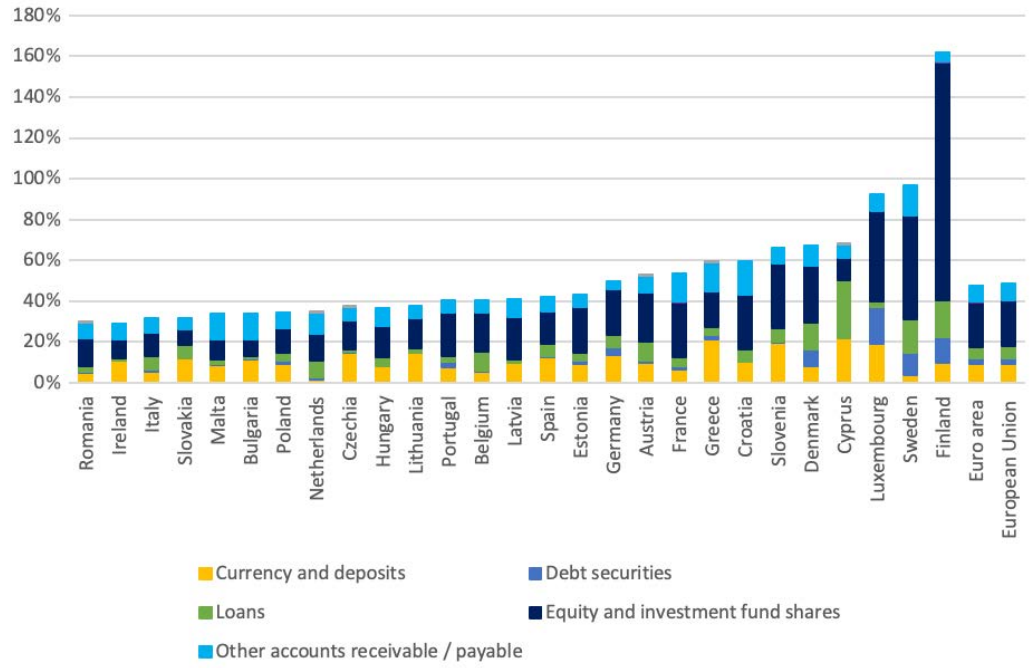
In terms of reference countries, in 2020 the US had a debt-to-financial liability ratio of 82.6%, while Japan had a ratio of 104.5%. By 2021, the ratio for the US significantly increased to 101.5%, probably reflecting a significant increase in debt due to dealing with the pandemic. Whilst for Japan, the ratio had a more moderate increase to 108.6%. Japan is an exceptional case of above 100% seems to be due to a statistical error in data reporting, however, both data on debt to GDP and financial liabilities to GDP were extracted from the same source (i.e., IMF).

General government financial assets

Above we have compared government debt and liabilities to GDP, as these are important indicators of debt size and sustainability. However, a government not only has a certain debt but also has financial assets against it. The more financial assets a government has, the lower the net debt will be and the more positive this is for the sustainability of its debt position.

Figure 5 below outlines general government financial assets as a percentage of GDP for the select countries under review for 2021.

Figure 5. General government financial assets as a percentage of GDP (2021)



Source: 1. Eurostat

In 2021, Romania (28.7%) is the country with the lowest value and Finland (164.4%) is the country with by far the highest level of government financial assets as a percentage of GDP. This is 67.6% above Sweden (96.8%), which has the second-highest relative assets. Finland's extensive employment pension scheme (being partially funded by the government) comprises most of the government's financial assets (Statistics Finland, 2022). Most countries' government financial assets are predominantly comprised of equity and investment fund shares. Finland's share is higher than most, and they seem to have a very low share of currency and deposits. This construction of assets is very similar to the other Nordic countries. Another similarity in Nordic countries (+ Luxembourg) is the larger share of debt securities in their assets, whilst this instrument is not significant in any other countries. Cyprus seems to be the biggest exception of countries observed, as currency and deposits and loans comprise most of their government assets. The Netherlands has the lowest relative share of currency and deposits.

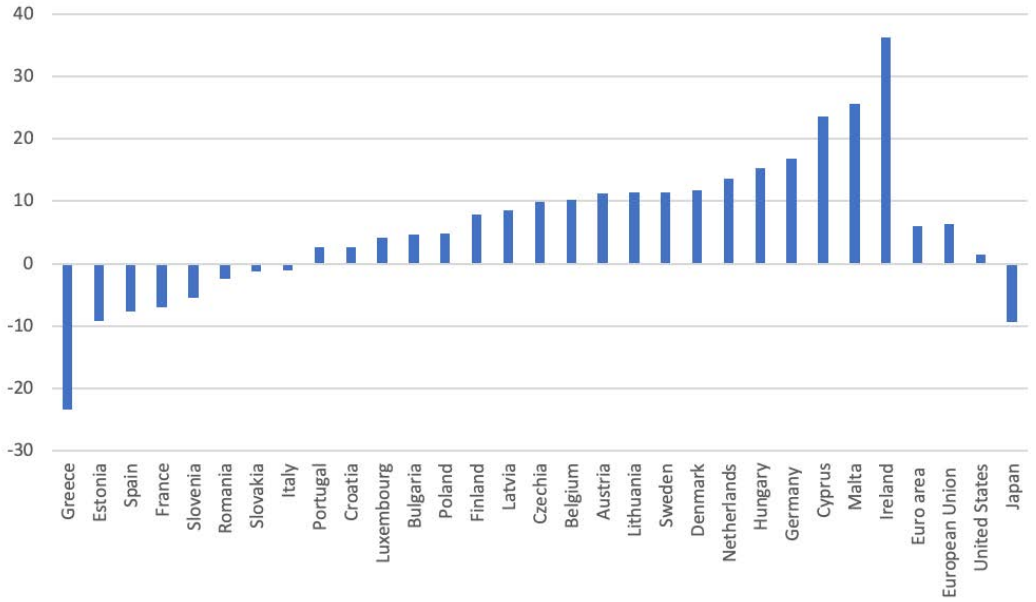
At an aggregate level, the 19 euro area countries have a financial asset-to-GDP ratio of 47.3% in 2021, which increases to 48.4% when taking into account the 27 countries forming part of the European Union.

General government net financial assets

We extend the analysis of movements in debt positions throughout the recent period of sustained economic growth in the European Union (2014-2019) to governments' net financial position over the same period. The net general

government financial assets as a percentage of GDP can be found by deducting financial liabilities from financial assets. This value reflects whether a country has more financial assets or liabilities. Figure 6 below outlines the absolute change (in pp) in the general government net financial assets to GDP ratio between 2014 and 2019 for the select countries under review.

Figure 6. General government net financial assets as a percentage of GDP – absolute change (percentage points) (2014-2019)



Source: Authors' estimates, based on data accessed from 1. Eurostat: European Union countries, euro area and European Union average; 2. IMF: United States and Japan.

It seems that the most indebted countries' positions deteriorated within the time analysed. Expressed like this, in net financial assets as a percentage of (varying) GDP, Greece registered the weakest performance, with its general government net financial assets to GDP ratio decreasing by 23.4 pp when comparing 2019 to 2014 levels. Furthermore, Estonia (-9.1 pp), Spain (-7.6 pp), France (-7.0 pp), Slovenia (-5.5 pp), Romania (-2.4 pp), Slovakia (-1.2 pp) and Italy (-1.1 pp) also registered a deterioration in their net financial asset position. Conversely, Ireland registered the strongest performance, with an increase of 36.3 pp, largely due to foreign investments and multinational corporations setting up in Ireland. In addition, Ireland was hit very hard during the 2008 crisis with long-lasting effects, which may reflect the rapid increase in net financial assets as the economy grew and recovered.

The aggregate general government net financial assets to GDP ratios of the 19 euro area and 27 European Union countries increased by 6.1 pp and 6.4 pp respectively, between 2014 and 2019. While positive, these figures arguably represent a mild improvement over the 5 years of sustained economic growth. Furthermore, these improvements have been reversed (and more) by the increase in debt experienced by governments worldwide related to the COVID-19 crisis.

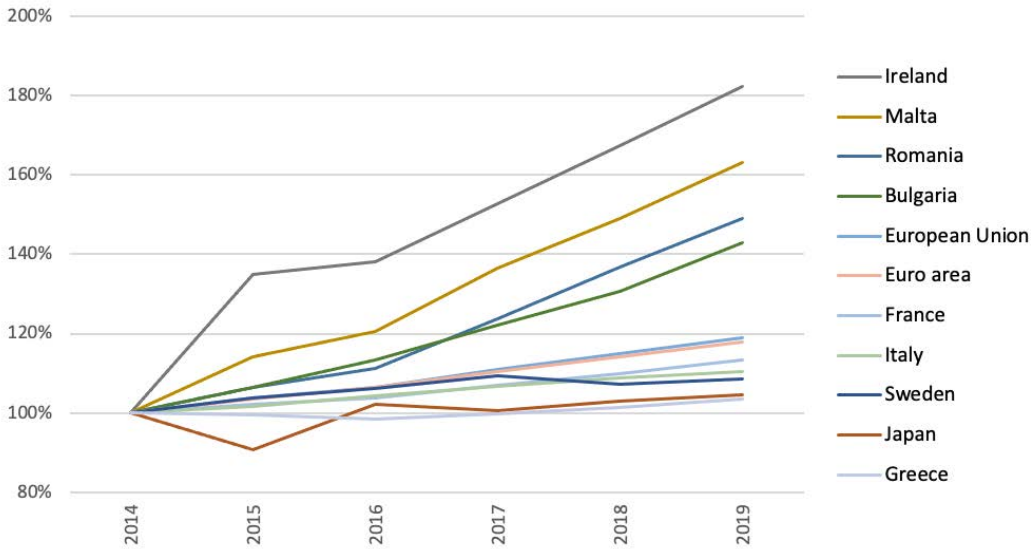
In terms of reference countries, the United States registered an improvement of 1.4 pp over the reference period (2014-2019), while Japan experienced a deterioration of -9.3 pp.

When comparing individual country movements (increases/decreases) in net financial assets as a percentage of GDP with movements in debt to GDP over the same period, it is clear that both in terms of positive and negative performances, the movements are significantly more amplified, reinforcing our argument that an analysis of the sustainability of government debt should also take into account movements on the financial asset side of the government balance sheet.

Influence of variable GDP

The fact that the scaling factor GDP itself varies over time may have a distorting effect on our interpretation of the development of general government net financial assets over the 2014-2019 time period. Ireland's GDP in current prices, for instance, made a substantial 35% leap up between 2014 and 2015, as can be seen in Figure 7. This was the result of changes to the country's domestic corporate tax system that caused a redirection of financial flows of several large multinational corporations. The most relevant of these are the on-shoring of intellectual property products and of the ownership of the large aircraft fleets of resident leasing companies. Such transfers of property do not have a net effect on GDP, because they imply an investment (which adds to GDP) that is equal to an import (which is subtracted from GDP). But once acquired, depreciation of these assets needs to be included in GDP, which was a main cause of the GDP hike in 2015. Another large contribution comes from profits of multinational corporations that had to be included in the Irish GDP after they moved their domiciliation to Ireland (see e.g. Irish Fiscal Advisory Council, 2023 and Honohan, 2021).

Figure 7. GDP for selected countries (relative to GDP in 2014, current prices, 2014=100%), 2014-2019. The EU countries with strongest and with weakest GDP growth are shown, and Japan for reference purposes.

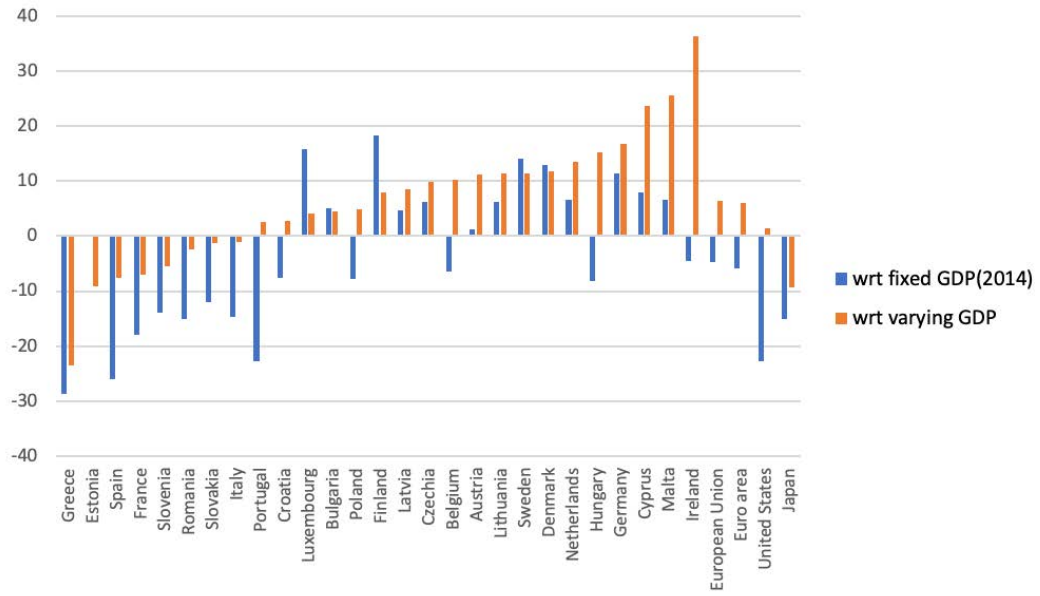


Source: Authors' estimates, based on data accessed from 1. Eurostat: European Union countries, euro area and European Union average; 2. IMF: United States and Japan.

Figure 8 below shows what happens to figure 6 if we eliminate the influence of the fluctuating GDP by keeping it constant at its 2014 value. The orange bars show general government net financial assets as a percentage of GDP in the traditional way, as in figure 6. The blue bars shows the result if we divide general government net financial assets by the fixed value of the 2014 GDP of these countries. In this way the changes we see are purely caused by changes in the net financial assets, because the variation of GDP over time has been eliminated.

It becomes clear that for Ireland, for example, the significant improvement of its net financial assets to GDP ratio during these years was caused by a rise of GDP and not by an increase of its financial asset position in absolute terms. As indicated in paragraph 2.1, a substantial rise of Irish GDP occurred in 2015 as a result of changes to its domestic corporate tax system.

Figure 8. General government net financial assets as a percentage of varying (orange) and fixed (blue, 2014 value) GDP – absolute change (percentage points) (2014-2019).

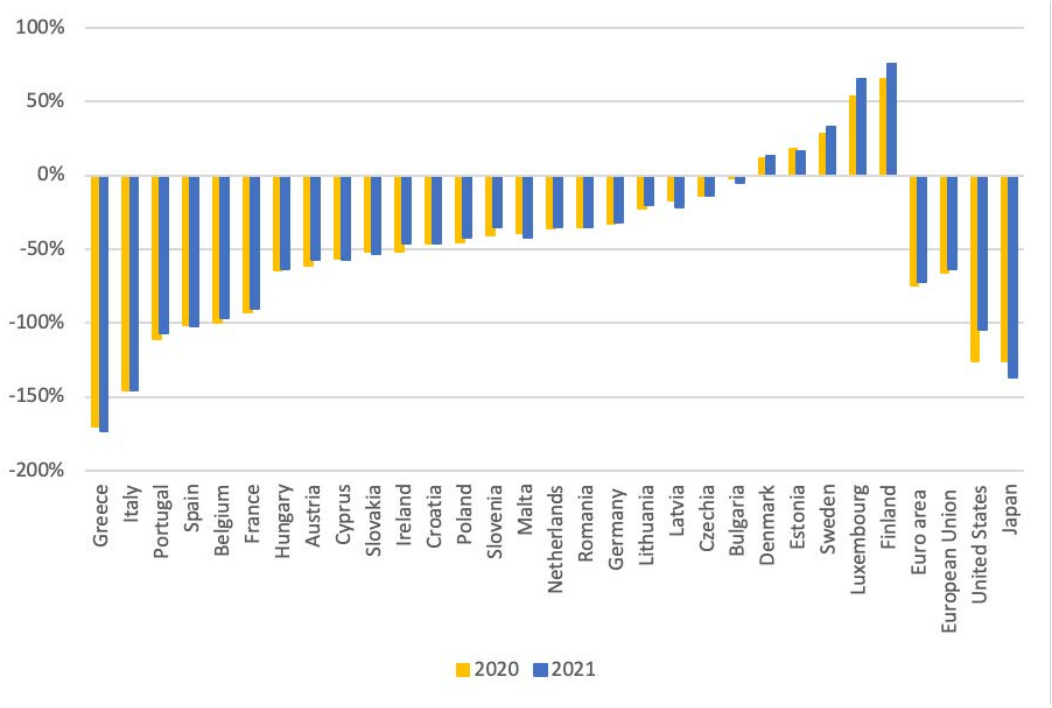


Source: Authors' estimates, based on data accessed from 1. Eurostat: European Union countries, euro area and European Union average; 2. IMF: United States and Japan.

The difference between the two methods is by far the greatest for Ireland (40.8 percentages points). The numbers two and three, Portugal and Hungary, follow with 25.3 and 23.5 percentage points respectively, and are much closer to the other EU countries. Ireland is in fact the best known example of a country for which GDP is an inadequate measure of economic performance due to the worldwide capital flows attracted by its corporate tax structure. The findings of figures Figure 7Figure 8 do suggest that Ireland is indeed the country for which this effect is strongest. Confirmation of this idea would require further investigation of the other indicators and a deep dive into the other EU countries under consideration, but due to time constraints this was considered outside the scope of this paper. We will therefore continue to use (varying) GDP as a scaling factor for the accounts collected in this paper.

Figure 9 below outlines net general government financial assets as a percentage of GDP for the select countries under review for 2020 and 2021.

Figure 9. General government net financial assets as a percentage of GDP (2020-2021)



Source: Authors' estimates, based on data accessed from 1. Eurostat: European Union countries, euro area and European Union average; 2. IMF: United States and Japan.

Most European Union countries hold more financial liabilities than financial assets on their balance sheets, with Italy (-145.6% in 2021) and Greece (-173.3% in 2021) having the largest negative positions. Conversely, the European Union countries with a positive net financial asset position as a percentage of GDP in 2020 were Denmark (13.4% in 2021), Estonia (15.9% in 2021), Sweden (33.1% in 2021), Luxembourg (65% in 2021) and Finland (75.6% in 2021). There is an overall trend of Nordic countries having high levels of net financial assets (as a percentage of GDP), whilst Southern European countries seem to have the lowest levels, reflecting their high debt.

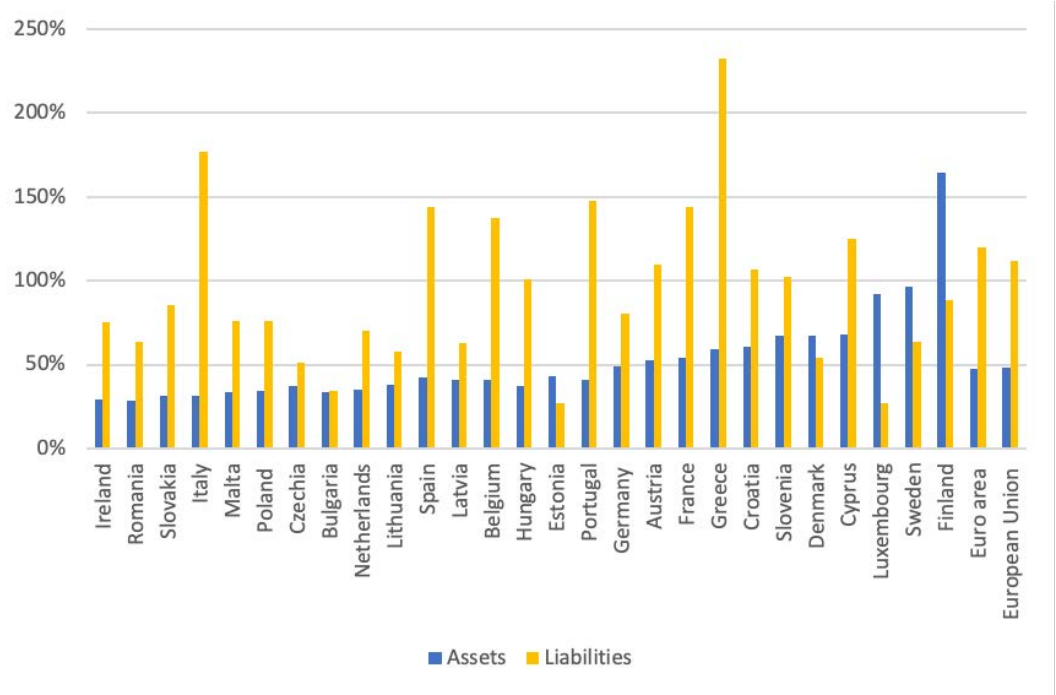
At an aggregate level, the 19 euro area countries have a net financial asset to GDP ratio of -72.5% in 2021, which improves to -63.5% when taking into account the 27 countries forming part of the European Union.
In terms of reference countries, Japan (-136.6% in 2021) and the United States (-104.9% in 2021) were both notable for the sizeable differences between the financial liabilities and financial assets held on their government's balance sheets (as a percentage of GDP). The sharp increase for the United States may be explained by their significant quantitative easing done to aid with the pandemic recovery.

Conclusion on the government sector

The change of government debt to GDP ratios looks hopeful, as they are consistently decreasing in almost all EU countries. When looking at net financial assets most countries had (positive) growth over 2014-2019, however, in recent years almost all EU countries had negative values (an excess of liabilities). In general, there seems to be an overall trend of Nordic countries having high levels of net financial government assets (as a percentage of GDP), whilst Southern European countries seem to have the lowest levels, possibly reflecting their high government debt. The most indebted countries' positions deteriorated within the time analysed when looking at the net financial assets. Looking at liabilities, Greece seems to have the weakest position with an abundance comprising most of their loans, whilst Italy had a stronger position with a stronger role of debt securities.

Figure 10 below shows the government's financial assets and liabilities (as a percentage of GDP) to provide a more clear comparison of the two (the figure is organised in order of smallest to largest value according to financial assets).

Figure 10. Government financial assets and liabilities as a percentage of GDP (2021)



Source: Eurostat

Government assets are more equally divided across EU countries, whilst liabilities are far more dispersed. Nordic countries seem to have the highest levels of assets with relatively low liabilities, whilst many Eastern European countries have the

lowest level of assets with higher levels of liabilities. The countries with clearly higher liabilities to assets are Italy, Spain, Belgium, Portugal, France, and Greece. The few countries with assets above liabilities are Finland, Sweden, Luxembourg, Denmark, and Estonia.

The financial position of households

The sustainability of government debt is primarily dependent on the underlying economy, often discussed in terms of its productive capacity (typically GDP). This is because governments raise revenues primarily via taxation of other economic sectors (households and firms) incomes.

However, the indebtedness of these sectors also influences the ability of governments to raise revenues via taxation. Thus, throughout this sub-section, we analyse the financial position of households, by looking at their financial liabilities, financial assets, and net financial position (assets minus liabilities) as a percentage of GDP. We compare the net financial position of households in 2014 (1st year of the period of uninterrupted positive European Union aggregate GDP growth post-financial crisis) and 2019 (thus excluding the impact of the COVID-19 crisis on households' balance sheets). In addition, we look at 2021 including the analysis of the relevant subcategories of assets and liabilities.

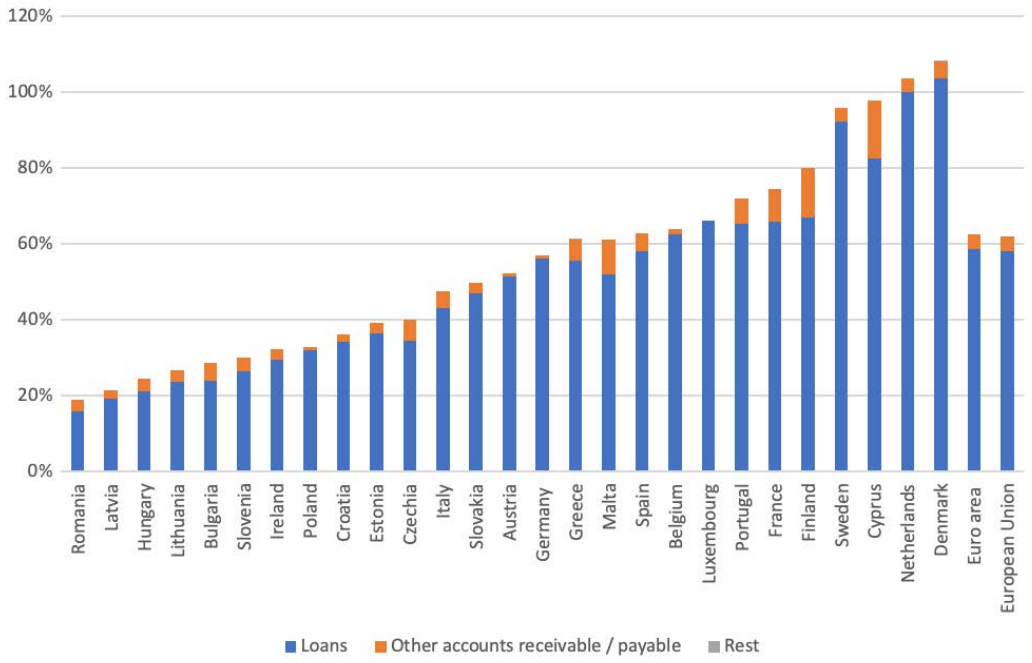
The inclusion of the indebtedness of households in our analysis also helps to (loosely) address the differences in the structure of government balance sheets discussed previously. Specifically, we are referring to divergences in the welfare system of governments, where governments with large public pension systems are likely to have a greater amount of financial instruments (both assets and liabilities) on their balance sheet. Conversely, in countries with higher prominence of private pension systems, such financial assets and liabilities are primarily held on the balance sheets of households.

Throughout this sub-section of this report, we limit our analysis to European Union countries, and euro area and European Union aggregates (as available from the Eurostat database). We do so as data for reference countries was not available.

Household financial liabilities

The household financial liabilities in the EU mainly consist of mortgages and other loans, with loans accounting for 93.5% of the total liabilities (Eurostat, 2022b). Figure 11 below outlines household financial liabilities as a percentage of GDP for the select countries under review.

Figure 11. Household financial liabilities as a percentage of GDP (2021)



Source: Eurostat.

Household financial liabilities are constructed almost entirely by loans. Other accounts receivable is the only other significant instrument. Other instruments (i.e., the 6 others mentioned previously) either have a 0% share or less than 1%, therefore, they are not seen in the figure. Compared to government financial liabilities, the primary instrument is far more homogenous for households across EU countries.

The European Union country with the lowest level of household financial liabilities as a percentage of GDP was Romania (18.8%), while the country with the highest level was Denmark (109.1%). The Netherlands, Cyprus and Sweden have notably high values as well. A general conclusion to make is that Western and especially Nordic European countries have higher amounts of household liabilities than Eastern European countries. There may be a correlation between high levels of household debt and social welfare systems that spend on aiding the elderly, the young, education and labour market policies (Comelli, 2021). In many Nordic countries, most household debt is due to buying homes and the debt is predominantly within wealthy households (Danmarks Nationalbank, 2018).

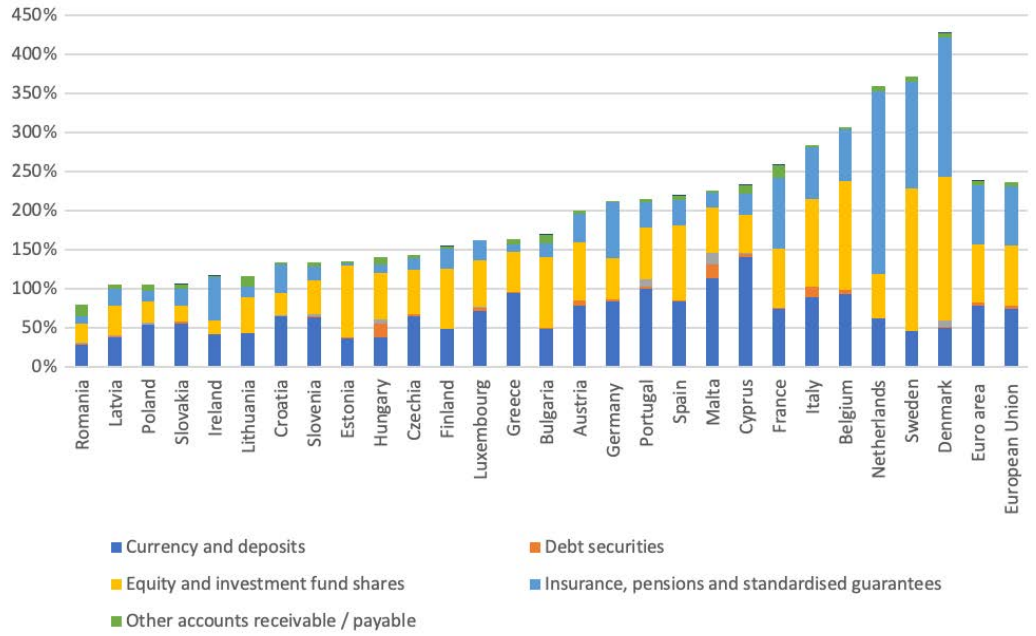
Household financial assets

In 2021, most EU households' financial assets are equity and investment fund shares, currency and deposits and assets (held with pension funds, and life

insurance companies). In 14 EU countries currency and deposits are the largest instrument, in 10 the largest was equity and investments and for three countries the largest instrument was insurance and pensions (The Netherlands (64.9 %), Ireland (46.0 %) and France (34.6 %). (Eurostat, 2022b)

Figure 12 below outlines household financial assets as a percentage of GDP for the select countries under review for 2021.

Figure 12. Household financial assets by category as a percentage of GDP (2021)



Source: Eurostat.

All EU countries have above 100% household financial assets as a share of GDP, except for Romania with 81.9%. The country with the highest level was Denmark (434.1%). As can be seen, most of the countries that have the highest household assets also have the highest household liabilities. The same is true for the ones with the lowest values. However, there are expectations. These include Italy which has a significantly higher level of household assets in comparison to liabilities.

Compared to household liabilities, there is slightly more heterogeneity in the key instruments. The three main asset types across all countries are currency and deposits, equity and investment funds and insurance, pension and standardised guaranteed. Some countries also have a slight share of other accounts receivable/ payable. The proportions of these asset types also vary more than for liabilities. The countries with the highest household assets have a relatively smaller share of

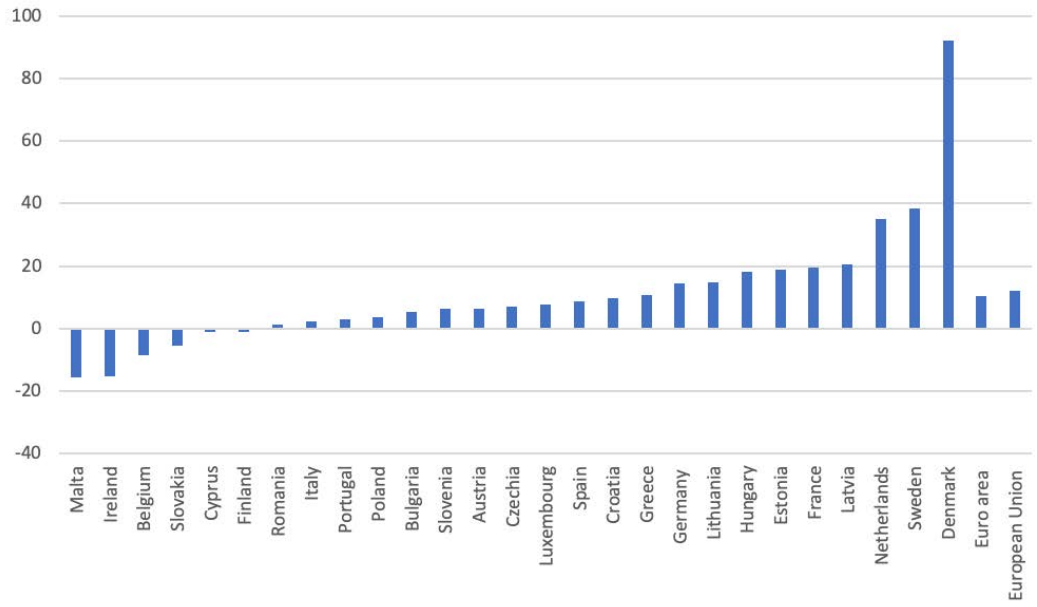
currency and deposits, and a higher share of insurance. The Netherlands has an exceptionally high share of insurance, pensions, and standardised guarantees assets. This is explained by most pensions and insurance being privatized, which means the assets fall in the hands of households, instead of governments. Many Eastern European countries have almost no share of insurance assets, whilst they have higher shares of other accounts receivable/payable.

At an aggregate level, the 19 euro area countries have a household financial asset to GDP ratio of 244.5%, which falls marginally to 241.2% when taking into account the 27 countries forming part of the European Union.

Household net financial assets

Figure 13 below outlines the absolute change (in pp) in the household net financial assets to GDP ratio between 2014 and 2019 for the select countries under review.

Figure 13. Household net financial assets as a percentage of GDP – absolute change (percentage points) (2014-2019)



Source: Authors' estimates, based on data accessed from Eurostat.

The graph above shows that households in most European Union countries have seen their net financial asset position improve throughout the recent period of economic stability in Europe. Households in Denmark registered the highest level at 92.2 pp (as a percentage of GDP), followed by Sweden (38.5 pp) and the Netherlands (35.1 pp). Denmark has exceptionally high household net financial assets, due to high (often mandatory), and increasing pension savings and a

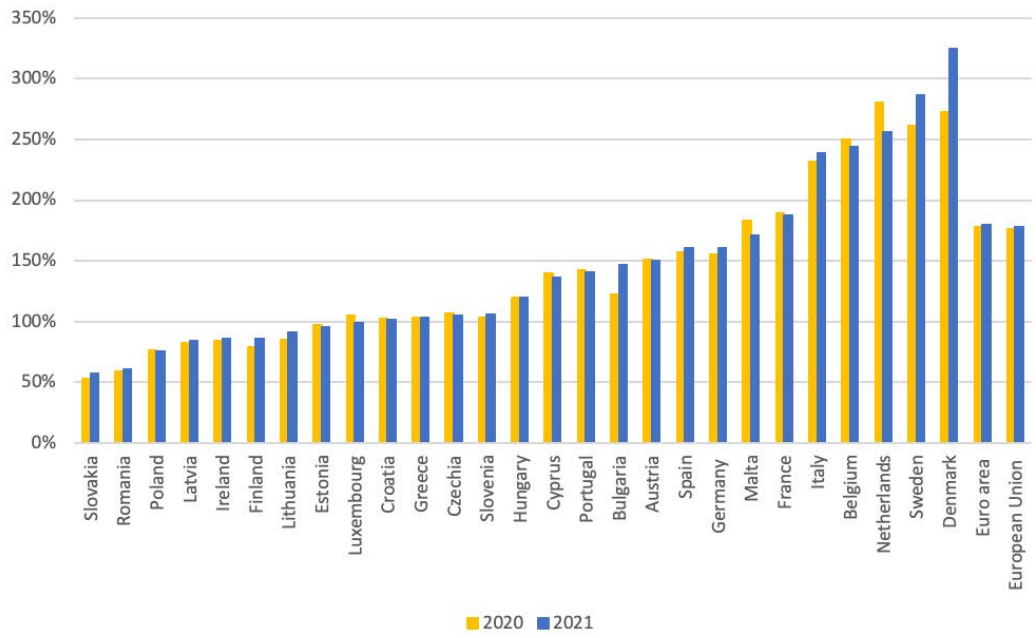
unique low-cost flexible mortgage system (Danske Bank, 2018). Households in Malta and Ireland registered the weakest performance, seeing their net financial asset position deteriorate by -15.5 pp and -15.1 pp respectively. Interestingly, Ireland has the highest growth of government net financial assets and the lowest growth of household net financial assets. This may reflect that the economic growth experienced has not benefited the household as much as it has benefited the government and companies.

The aggregate household net financial assets to GDP ratios of the 19 euro area and 27 European Union countries increased by 10.5 pp and 12.2 pp respectively, between 2014 and 2019. This is a positive trend, representing a strengthening of the resilience of households' balance sheets at an aggregate level in the European Union over the 5 years.

In 2021, five countries accounted for 72.3% of EU household financial assets and 71% of liabilities - Germany (assets 22.4% & liabilities 22.7%), France (assets 18.7% & liabilities 20.7%) Italy (assets 14.6% & liabilities 9.4%) the Netherlands and Spain (Eurostat, 2022b).

Figure 14 below outlines household net financial assets as a percentage of GDP for the select countries under review for 2020 and 2021.

Figure 14. Household net financial assets as a percentage of GDP (2020-2021)



Source: Authors' estimates, based on data accessed from Eurostat.

In all EU countries, household financial assets were higher than liabilities. The European Union country with the lowest level of household net financial assets as a percentage of GDP in 2020 was Slovakia (53.0% in 2020 and 57.1% in 2021), while the country with the highest level was the Netherlands (280.4% in 2020). In 2021, Denmark (325%) and Sweden (286%) overtook the Netherlands (256.5%) as countries with the highest values. One reason for the high values of the Netherlands, Denmark, and Sweden, is that it is relatively easy for households to take on loans and mortgages. Therefore, much of their liabilities are covered by the assets of owning a home or a car for example. In addition, these countries have extensive pension systems, which makes households less fearful of taking on debt at a younger age.

The Scandinavian countries and the Netherlands have the highest household net financial assets. These countries also have the highest levels of household financial liabilities; however, it is evident that they are offset by the high levels of financial assets. Italy is an exception with relatively high household assets in comparison to low household liabilities. Italy also has one of the lowest government net financial assets to GDP and one of the highest debts to GDP ratios, reflecting that Italy's large debt is at the hands of the government. This shows why it is good to look at other aspects of national debt than solely government debt to GDP.

At an aggregate level, the 19 euro area countries have a household net financial asset to GDP ratio of 178.4% in 2020 and 179.5% in 2021, which falls marginally to 175.6% in 2020 and to 178.3% in 2021 when taking into account the 27 countries forming part of the European Union.

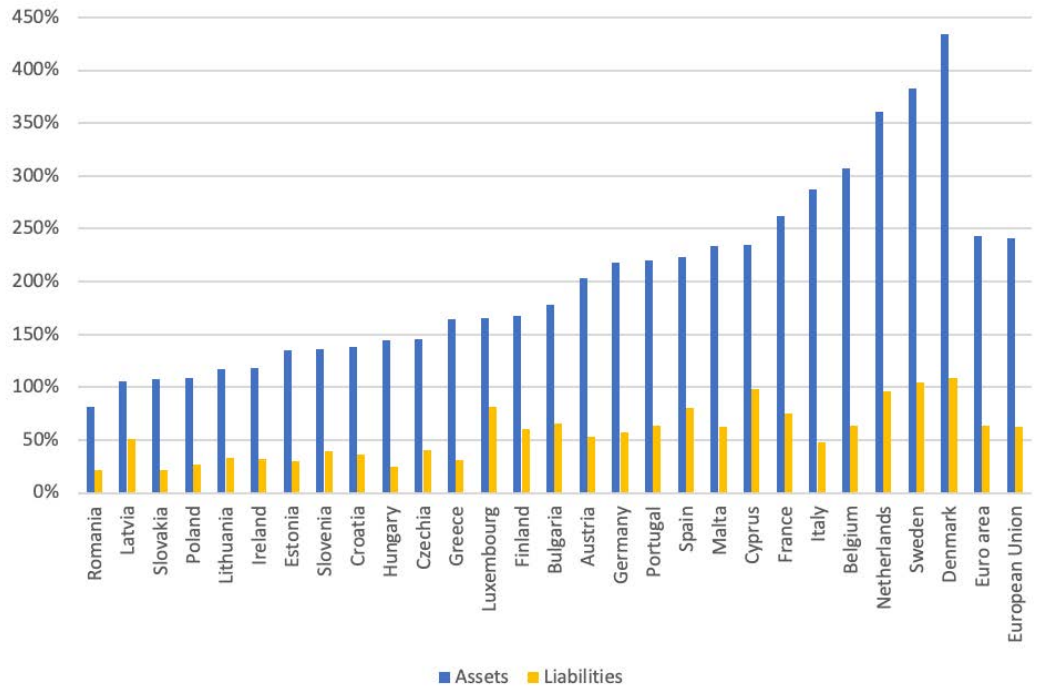
Conclusion on the household sector

Figure 15 below outlines household financial assets and liabilities as a percentage of GDP for the select countries under review for 2020 and 2021.

In general, households have far higher financial assets than liabilities. The best-positioned countries are Denmark, Sweden, and the Netherlands. In addition, Italy also has a strong position with one of the highest values of household net assets. Eastern European countries have the weakest household positions. Ireland also has one of the lowest levels of household assets. Finland, having the highest level of government net assets, ranks below the EU average when looking at households.

Across all countries observed the same instruments made up all assets and all liabilities. Most household liabilities are loans, whilst most assets are currency and deposits, equity and investment funds and insurance, pension, and standardised guarantees. Throughout the time observed, it seems that households' positions are strengthening in the EU.

Figure 15. Household financial assets and liabilities as a percentage of GDP (2021)



Source: Eurostat

The financial position of firms

As we have outlined previously, the sustainability of government debt is primarily dependent on the underlying economy, and thus the economic performance of sectors external to the government, primarily firms and households. This is because governments primarily raise revenues by taxing households and firms, and thus we also include an analysis of the financial position of firms. Firms represent non-financial corporations, with data on financial corporations presented separately in the Eurostat database. We do not provide a stand-alone analysis of financial corporations, since they typically represent a small share of the total economy (in terms of productive capacity). Furthermore, this sector typically acts as a counterpart to movements in the other 3 sectors, holding the financial assets which appear as financial liabilities on the balance sheets of the other 3 sectors (and vice versa).

High firm financial positions do not necessarily mean higher benefits for households and/or the economy. For example, Ireland has the highest net financial firm assets of all countries analysed, yet they have the lowest household financial assets and government financial assets. Many countries with firms with strong financial positions, such as the Netherlands and Ireland, are comprised of letterbox

firms. These firms can be moved relatively easily from country to country; therefore, it is good to question how relevant analysing these firms' financial positions is for debt sustainability analysis. However, strong firm positions in industrial countries such as Germany and Italy may have more value for their firms (as they are not predominantly letterbox companies), possibly providing more opportunities for governments to make use of them.

Throughout this sub-section, we analyse the financial position of non-financial firms, by looking at their financial liabilities, financial assets, and net financial position as a percentage of GDP. We also compare the net financial position of firms from 2014 to 2019. In addition, we look at 2021 and the relevant subcategories of assets and liabilities.

Similar to the previous sub-section, throughout this sub-section of this report, we limit our analysis to European Union countries, and euro area and European Union aggregates (as available from the Eurostat database). We do so as data for reference countries was not available.

Firm financial liabilities

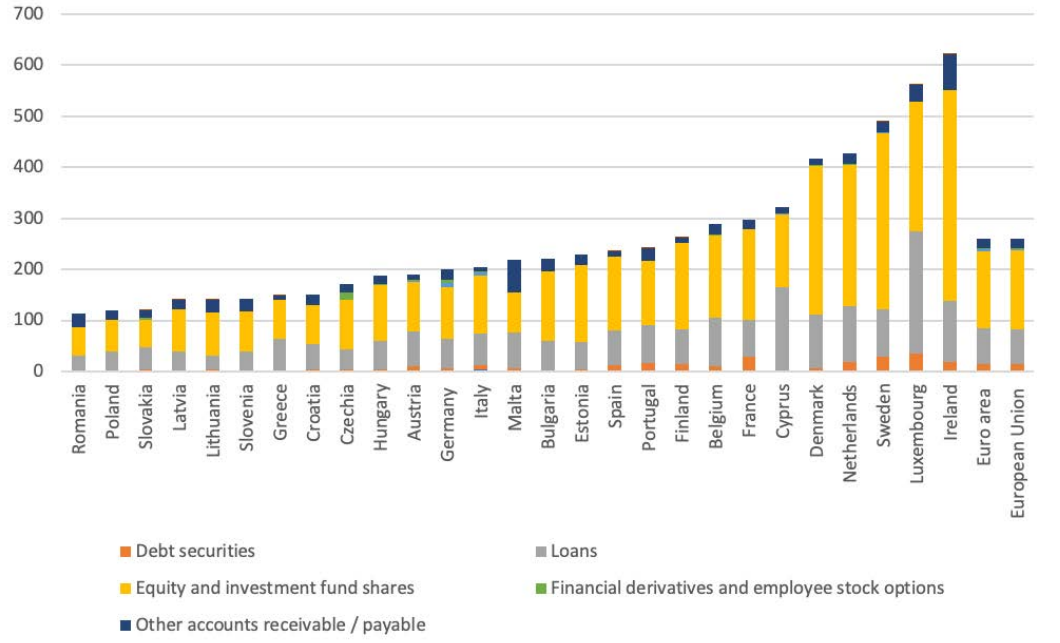
In 2021, five EU countries made up 64.6% of liabilities (of non-financial firms). These countries were Germany, France, the Netherlands, Ireland, and Italy. The largest share of liabilities were equity and investment fund shares (59%) and loans (26.7%). Other instruments were accounts receivable/payable (7.2%), debt securities (5.1%) and currency and deposits (0.2%). (Eurostat, 2022c).

Figure 16 below outlines firm financial liabilities as a percentage of GDP for the select countries under review for 2021.

In all EU countries, firm financial liabilities were greater than GDP. The European Union country with the lowest level of firm financial liabilities was Romania (114.1%). Many Eastern European countries have low firm financial liabilities. Ireland (620.5%) had the highest level of liabilities. The highest-ranking countries, (Ireland, Sweden, the Netherlands, and Luxembourg) are known to house many multinational companies.

At an aggregate level, the 19 euro area countries have a firm financial liability to GDP ratio of 259.9% in 2021, which increases marginally to 261.1% in 2021 when taking into account the 27 countries forming part of the European Union.

Figure 16. Firm financial liabilities by category as a percentage of GDP (2021)



Source: Eurostat.

The subcategories of liabilities are relatively homogenous across EU countries. The largest liability instrument is loans, followed by equity and investment fund shares and other accounts receivable/payable. In around half of the countries, debt securities held a small share of financial liabilities. Compared to the other countries with high liabilities, Luxembourg has a relatively higher share of loans.

Firm financial assets

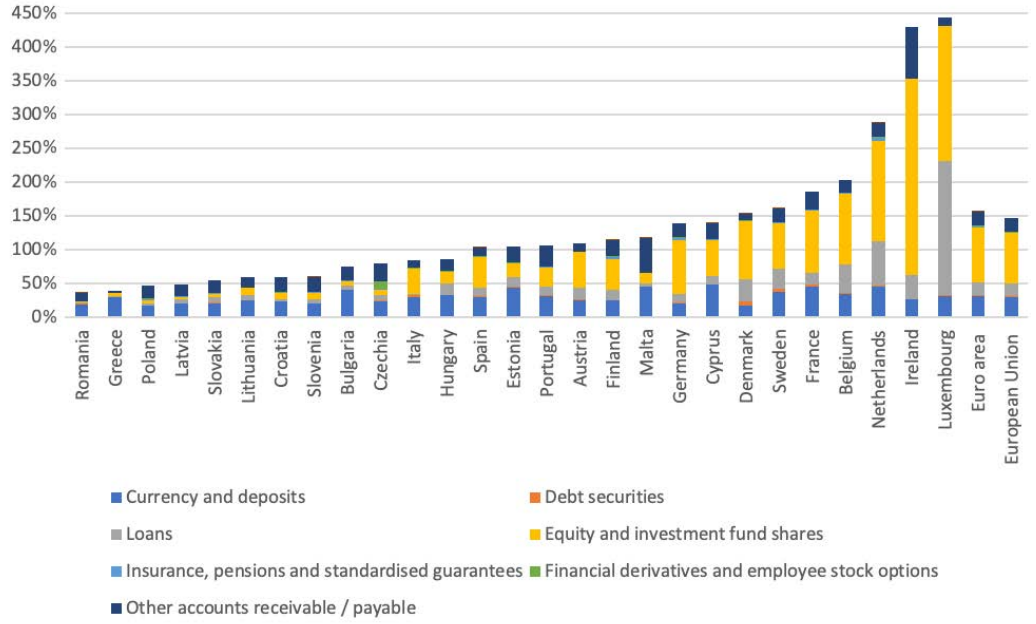
In 2021, five countries made up 72.1% of financial assets. These are the same countries that made up most liabilities – Germany (23.3%), France (21.7%), the Netherlands, (11.5%) Ireland (8.6%) and Italy (7%).

In 13 EU countries, equity and investment fund shares were the largest financial asset category. In five countries this category comprised over half of all financial assets (Ireland (67.5 %), Germany (58.4 %), Denmark (56.5 %), Belgium (51.9 %) and the Netherlands (51.6 %).

Currency and deposits were the largest categories in 10 EU countries. In three countries they contributed to over half of all financial assets (Greece (75.0 %), Romania (53.9 %) and Bulgaria (53.7 %); this was also the case in Turkey (54.7 %). In Czechia, Malta, Poland, and Slovenia the largest category was other accounts receivable/payable. (Eurostat, 2022c)

Figure 17 below outlines firm financial assets as a percentage of GDP for the select countries under review in 2021.

Figure 17. Firm financial assets as a percentage of GDP (2021)



Source: Eurostat.

The European Union country with the lowest level of firm financial assets as a percentage of GDP in 2020 was Romania (35.7%), while the country with the highest level was Luxembourg (443.5%). The same countries that hold the highest values for firm liabilities also have the highest firm assets. The same goes for the countries with the lowest ones.

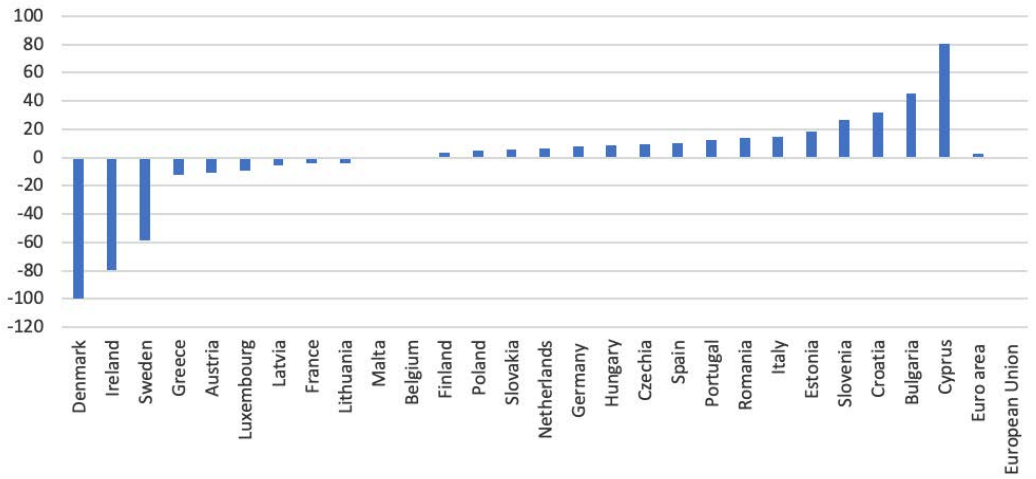
For the countries with higher firm assets, the majority is comprised of equity and investment fund shares. An exception to this is Luxembourg where loans have the same share as equity and investment fund shares. All countries have around the same share of currency and deposits, however, that instrument contributes to a larger share of assets in the countries with lower assets. Other accounts receivable/payable hold similar shares in all countries, with Malta and Ireland holding larger shares than most.

At an aggregate level, the 19 euro area countries have a firm financial asset-to-GDP ratio of 156.3%, which falls to 147.3% when taking into account the 27 countries forming part of the European Union.

Firm net financial assets

Figure 18 below outlines the absolute change (in pp) in the firm net financial assets to GDP ratio between 2014 and 2019 for the select countries under review.

Figure 18. Firm net financial assets as a percentage of GDP – absolute change (percentage points) (2014-2019)



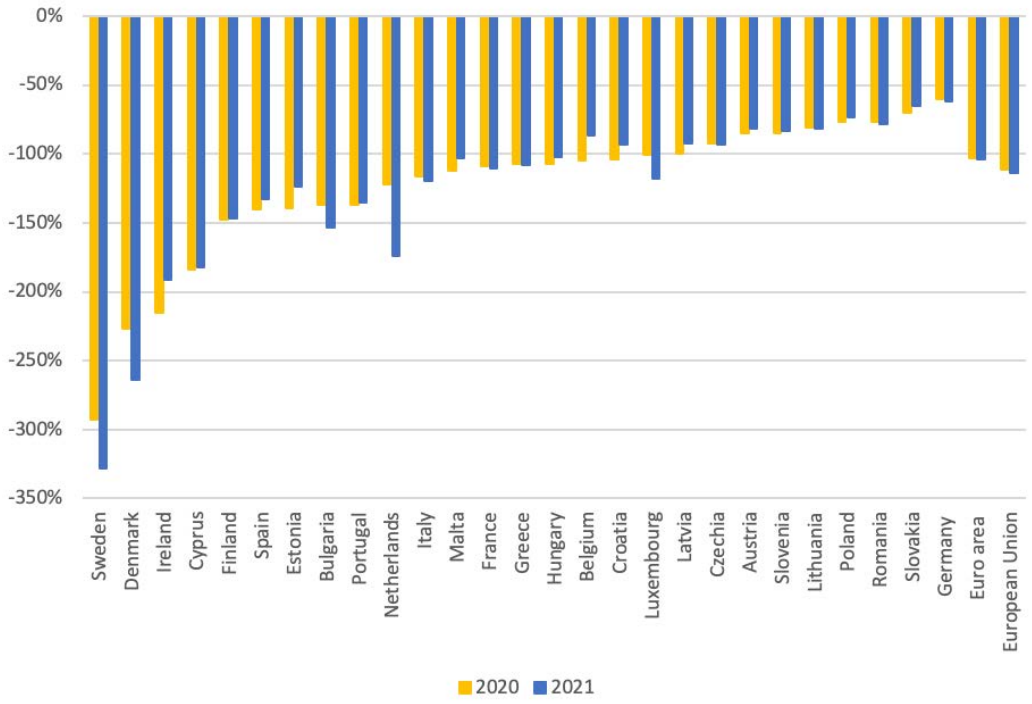
Source: Authors' estimates, based on data accessed from: Eurostat.

The graph above shows that firms in European Union countries have registered a mixed performance in terms of their net financial asset position as a percentage of GDP throughout the period of economic stability in the European Union *(2014-2019)*. Denmark registered the weakest performance, with its firm net financial assets to GDP ratio decreasing by -99.6 pp when comparing 2019 to 2014 levels, followed by Ireland (-79.2 pp) and Sweden (-58.6 pp).

Conversely, firms in Cyprus registered the strongest performance, with an increase of 80.3 pp. Other Eastern European Countries had the highest (positive) growth. The aggregate firm net financial assets to GDP ratios of the 19 euro area countries improved by 2.5 pp between 2014 and 2019. Conversely, when accounting for the 27 European Union countries, the same ratio for the same period decreased by 1.3 pp.

Figure 17 below outlines firm net financial assets as a percentage of GDP for the select countries for 2020 and 2021.

Figure 19. Firm net financial assets as a percentage of GDP (2020-2021)



Source: Authors' estimates, based on data accessed from Eurostat.

All countries analysed reposted negative net financial assets in 2020 and 2021. This may be explained by several factors. Most of the firms' liabilities are financial, predominantly in the form of debt from financial markets. However, not all firm's assets are financial, as fixed assets comprise a significant portion of total assets. In addition, oftentimes companies prefer to not have an abundance of financial assets laying idle on their balance sheets, instead they reinvest their financial assets for the future. Therefore, a negative firm net financial asset value does not reflect that the company is necessarily in bad condition.

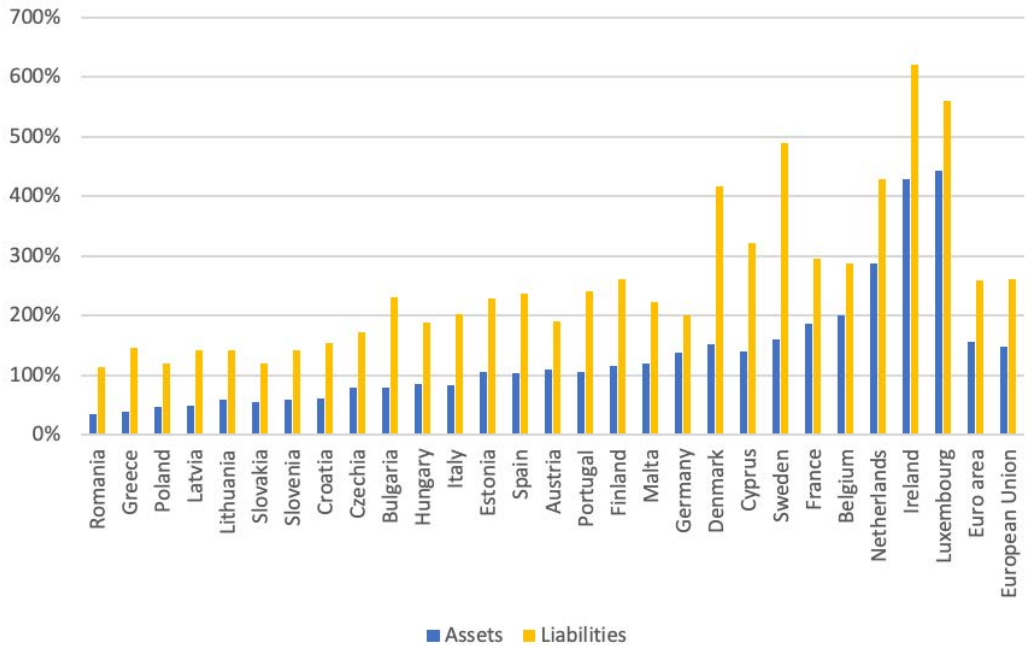
The European Union country with the lowest level of firm net financial assets as a percentage of GDP was Sweden (-293.0% in 2020 and -328.5% in 2021), while the country with the highest level (albeit a negative position (i.e., a net liability position)) was Germany (-59.7% in 2020 and -61.9% in 2021). This may be explained as Sweden is a country with very strong firms, whilst their GDP is lower than some other large countries such as Germany. Therefore, Germany's higher ratio may be due to its large GDP size.

At an aggregate level, the 19 euro area countries have a firm net financial asset to GDP ratio of -102.6% in 2020 and -103.6% in 2021, which falls to -111.2% in 2020 and to -113.89% in 2021 when taking into account the 27 countries forming part of the European Union.

Conclusion on the firm sector

Figure 20 below outlines firm financial assets and liabilities as a percentage of GDP for the select countries for 2021.

Figure 20. Firm financial assets and liabilities as a percentage of GDP (2021)



Source: Eurostat

All countries analysed have higher firm financial liabilities than assets. Germany seems to have the smallest gap between the two. Scandinavian countries and Ireland seem to rank the worst with the lowest net assets. Eastern European Countries had the highest (positive) growth from 2014-2019 out of all EU countries. It seems that countries with the most foreign, multinational companies have the highest excess of liabilities over assets. To investigate this further, the next section will shortly assess the impact of foreign actors.

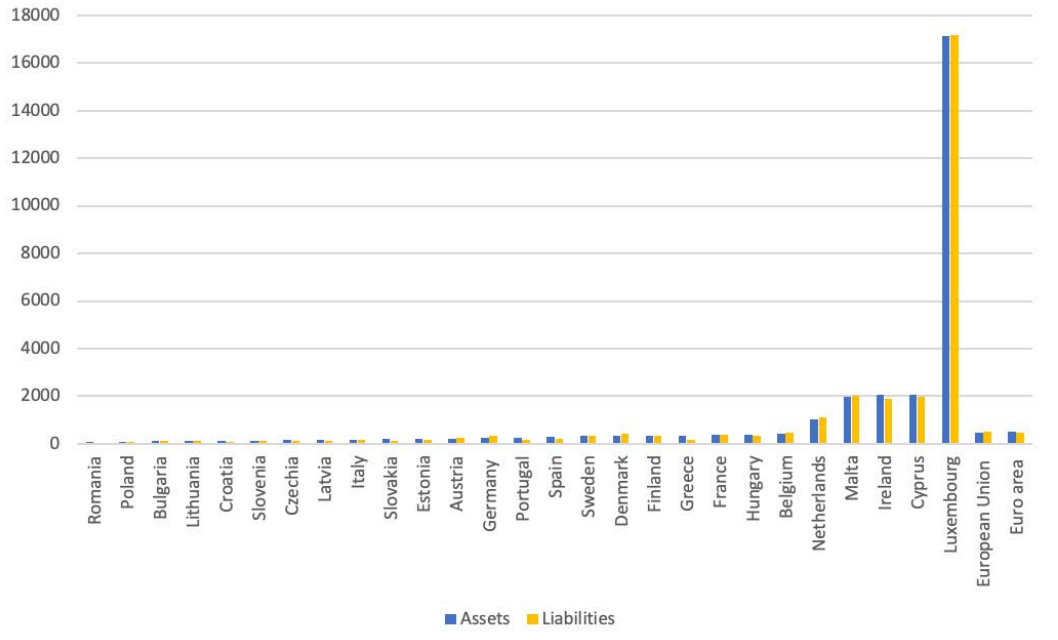
The financial position of the rest of the world

Thus far in this paper the assets and liabilities of the general government, households and firms have been analysed. In general, these three sectors comprise most of the total economy. However, there are some exceptions to this, most

prominently for countries considered 'tax havens' such as Luxembourg, the Netherlands, and Ireland (among others). For these countries, the impact of foreign actors comprise a significant part of the total economy. The sector that encompasses these foreign aspects is commonly referred to as the 'Rest of the world'. Eurostat defines the rest of the world sector as the following*: "- it consists of non-resident units insofar as they are engaged in transactions with resident institutional units, or have other economic links with resident units. Its accounts provide an overall view of the economic relationships linking the national economy with the rest of the world."* (Eurostat, 2022d). It refers to all countries outside the EU-27. As the purpose of this paper is to analyse the domestic economies, this sector will not be analysed in depth.

Figure 21 below outlines the rest of the world sector's financial assets and liabilities as a percentage of GDP for the select countries for 2021.

Figure 21. Rest of the world financial assets and liabilities as a percentage of GDP (2021)



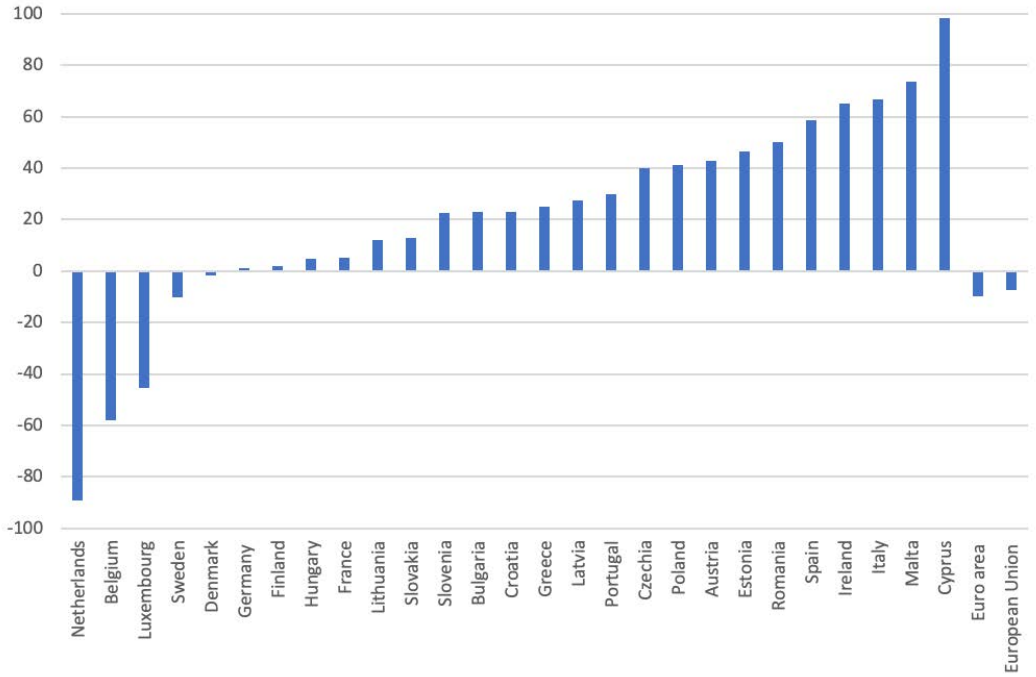
Source: Eurostat

Luxembourg is an outlier, as this sector's assets and liabilities both amount to nearly 18,000% of its GDP. Whilst the second runner-up is Malta and Cyprus with around 2,000% of their GDP. There are 5 countries with the rest of the world assets and liabilities above 1,000 times their GDP, these are Luxembourg, Cyprus, Ireland, Malta, and the Netherlands, all of which can be considered (to a bigger or smaller extent) to be tax havens. These countries have far higher values than the EU

average. Foreign financial assets and liabilities contribute to a relatively small share of GDP for most EU countries.

Figure 22 below outlines the rest of the world's net financial assets as a percentage of GDP for the select countries for 2021.

Figure 22. Rest of the world net financial assets as a percentage of GDP (2021)



Source: Eurostat

When looking at net assets, the ranking varies as Luxembourg reports a negative value. Therefore, it is important to look at net assets in addition to both assets and liabilities. The Netherlands reports the lowest net financial assets out of all EU countries, followed by Belgium, Luxembourg, and Sweden. Most EU countries have a positive value of net financial assets. However, this is the opposite for tax havens (including countries like Belgium and Sweden which have traits of tax havens). This is something that could/should be taken into consideration when looking at the financial status of EU countries and their debts.

The financial position at an aggregate level of the economy

We began this section of the report by providing an analysis of the financial elements within general government balance sheets, to assess the debt sustainability of said governments. We also outlined how the servicing of government debt is primarily dependent on tax revenues generated from the

productive capacity of the underlying economy (and hence the productive capacity of underlying sectors, primarily households and firms). We stated how the ability of governments to raise revenues from the taxation of these sectors is also dependent on the financial position of said sectors, and we, therefore, provided an analysis of the financial position of households and firms. In addition, we looked at the impact the rest of the world has on EU countries' balance sheets.

We conclude the analysis of financial assets and liabilities by showing the positions of different countries at an aggregate level, i.e., summing the positions of the general government, households, and firms. This analysis consolidates movements at an individual sector level, and we, therefore, focus on the net financial position, together with the change in this position between 2014 and 2019. In addition, we look at total assets and liabilities and their subcategories for 2021. Readers should interpret figures at an aggregate level with caution, as any policy recommendations made should be based on a more detailed analysis which considers individual sector positions.

Similar to the previous sub-sections (households and firms), throughout this sub-section of this report, we limit our analysis to European Union countries, and euro area and European Union aggregates (as available from the Eurostat database). We do so as data for reference countries was not available.

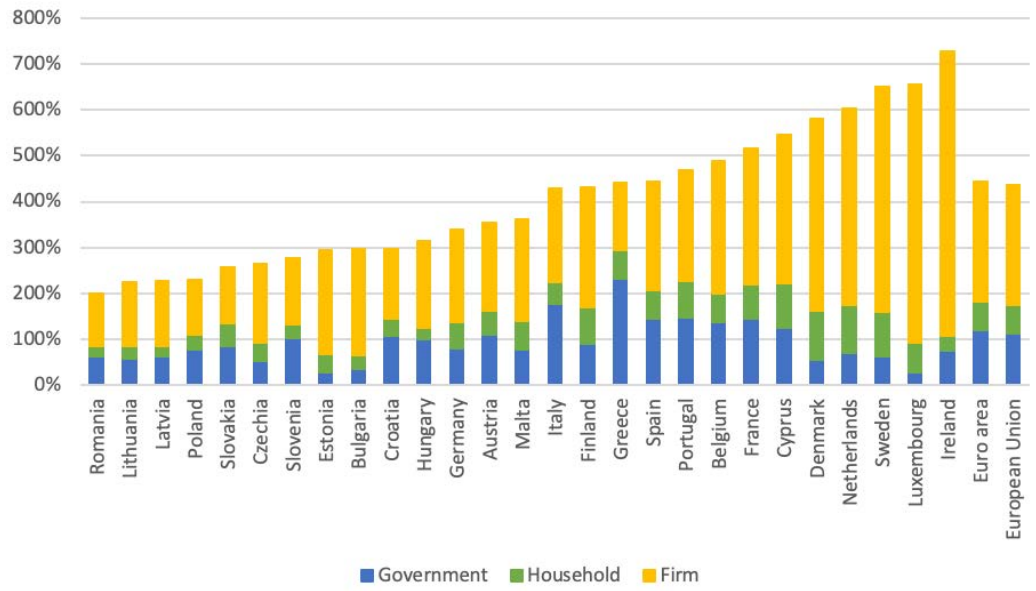
Total economy financial liabilities

Figure 23 below outlines total economy financial liabilities as a percentage of GDP for the select countries for 2021.

The figure above shows what the total financial liabilities are comprised of when looking at government, household, and firm sectors. We consider these three sectors to make up the total economy, as the rest of the world sector is not as relevant to the purpose of this paper.

As can be seen, for almost all countries firms hold the most financial liabilities. Ireland has the highest share of firm liabilities, followed by Luxembourg. The Netherlands and the Nordic countries seem to have the highest share of household liabilities. Greece has the lowest share of firm financial liabilities and the highest share of government liabilities, reflecting its high government debt. Italy has the second highest government debt.

Figure 23. Total economy financial liabilities (government + household + firm) as a percentage of GDP (2021)



Source: Authors estimates, based on data accessed from Eurostat.

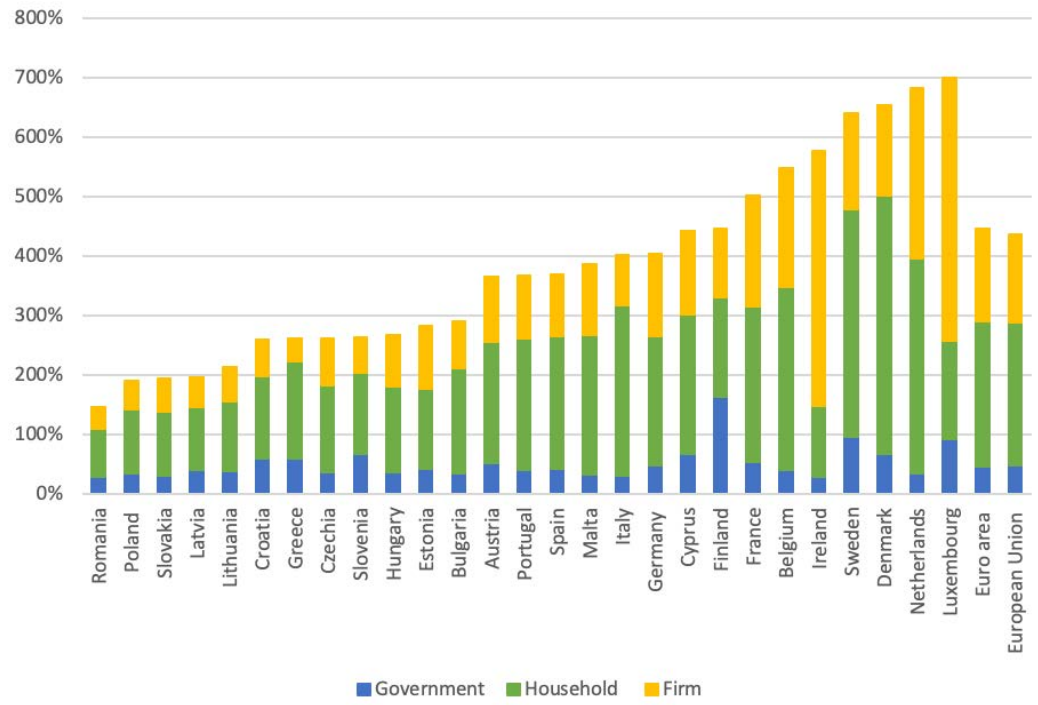
Total economy financial assets

Figure 24 below outlines total economy financial assets as a percentage of GDP for the select countries for 2021.

Total economy financial assets, when looking at the countries with the highest and lowest values, look similar on the EU level as liabilities. However, the composition of total financial assets differs significantly. Most assets come from households, followed by firms. Government financial assets hold the lowest share.

Luxembourg and Ireland have the highest shares of firm assets comprising their total assets. Finland is exceptional as they have an almost even share of government, household and firm assets comprising their total assets. Finland also has the highest amount of government assets. Italy has an above-average share of household assets.

Figure 24. Total economy financial assets (government + household + firm) as a percentage of GDP (2021)



Source: Authors' estimates, based on data accessed from Eurostat.

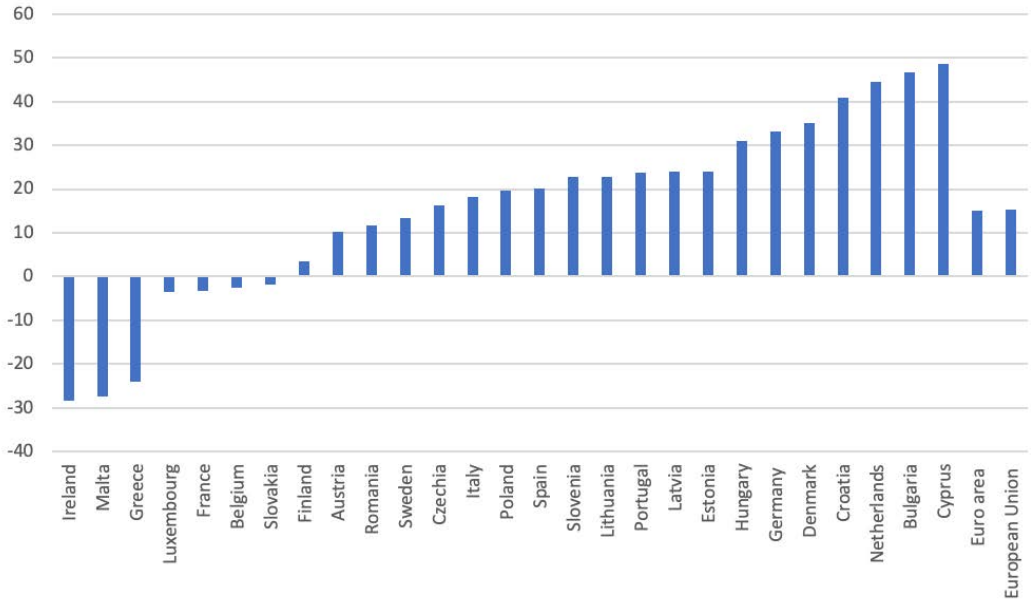
Total economy net financial assets

Figure 25 below outlines the absolute change (pp) in the net financial assets to GDP ratio between 2014 and 2019 for the whole economy in the select countries under review.

The graph above shows that European Union countries have registered a mixed performance in terms of movements in their net financial position at an aggregate level of the total economy over the recent period of economic stability in the union (2014-2019).

Ireland registered the weakest performance, with its net financial assets to GDP ratio at an aggregate level decreasing by 28.4 pp when comparing 2019 to 2014 levels, followed by Malta (-27.3 pp) and Greece (-24.1 pp). Conversely, Cyprus registered the strongest performance, with an increase of 48.7 pp, followed by Bulgaria (47.7 pp) and the Netherlands (44.6 pp).

Figure 25. Total economy net financial assets as a percentage of GDP – absolute change (percentage points) (2014-2019)



Source: Authors' estimates, based on data accessed from Eurostat.

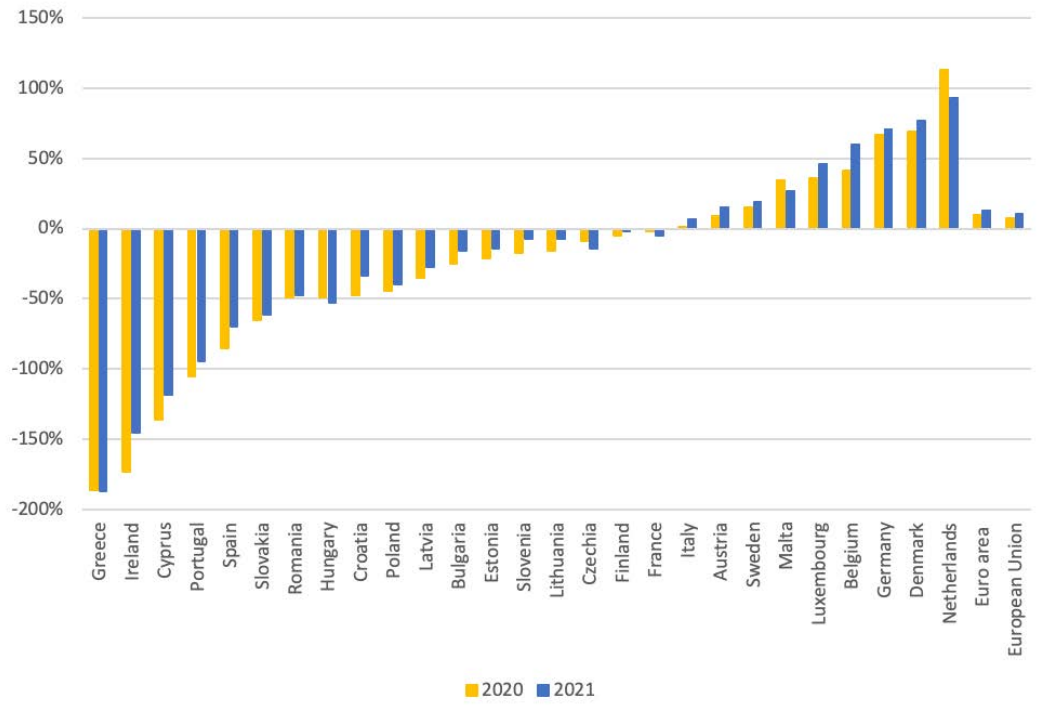
The aggregate net financial assets to GDP ratios at an aggregate level of the total economy of the 19 euro area and 27 European Union countries increased by 15.1 pp and 15.3 pp respectively, between 2014 and 2019. This is a positive trend, representing an improvement in the resilience of balance sheets throughout the European Union (at an aggregate level) over the 5 years.

Figure 26 below outlines net financial assets as a percentage of GDP for the whole economy (at an aggregate level) of the select countries under review for 2020 and 2021.

It seems that for most of the countries observed, their total economy net financial assets increased from 2020 to 2021. Some exceptions to this were most significantly the Netherlands (-20%) and to a lesser extent Malta (-7.5%) and Hungary (-4.1%).

The European Union country with the lowest level of aggregate net financial assets as a percentage of GDP in 2020 was Greece (-186.3% in 2020 and -186-9% in 2021), while the country with the highest level was the Netherlands (113.0% in 2020 and 93% in 2021). Ireland has the second-highest negative net financial assets as a percentage of GDP, additionally experiencing a decrease of 27% between the two years.

Figure 26. Total economy net financial assets as a percentage of GDP (2020-2021)



Source: Authors' estimates, based on data accessed from Eurostat.

At an aggregate level, the 19 euro area countries have an aggregate net financial asset to GDP ratio of 10% in 2020 which increased to -13.1% in 2021. For all EU countries, the value stood at 7.1% in 2020 which increased to -10.2% in 2021.

Conclusion on the total economy

Most of the total economy's financial liabilities come from firms, followed by governments and finally by households. Households hold the highest share of financial assets, followed by firms and lastly by governments.

It seems that out of the most indebted countries, when looking at total economy net assets, Greece has the weakest position. Italy, on the other hand, ranks relatively well in the top half of the EU when looking at total net assets. Despite Ireland ranking highest with firm net assets, the country ranks second worst after Greece. This may reflect that despite its strong firm sector, Ireland has weaker debt sustainability than most EU countries. The Netherlands ranks the highest followed by Denmark. Although the Netherlands has very similar firm positions to Ireland (with very high firm liabilities), it seems that other sectors compensate for this with high assets.

3. AN ANALYSIS OF THE FIXED ASSET POSITION OF THE ECONOMIES UNDER REVIEW

The financial position (assets, liabilities, and net position) of the different sectors of the economy (governments, households, non-financial corporations, rest of the world and the total economy) was analysed throughout the previous section of this report. However, countries also hold non-financial assets (liabilities)[2]. These non-financial assets are a relevant factor in the analysis of debt sustainability, as they can be utilised to service debt, either through any potential income they generate or through the funds raised from their liquidation. However, readers should note that these assets typically form a core part of the everyday activities of these sectors, be it government or firms' office buildings, to household dwellings, and thus while their liquidation is possible, it can be challenging from an operational and political point of view, and counter-productive in the long term if these assets are highly productive.

Eurostat publishes data on non-financial assets in nominal values. Significant issues exist with the headline figures in terms of incomplete data sets, while cross-country comparisons should be treated with caution due to the possibility of inconsistent treatment of underlying indicators amongst different countries. For example, some countries include the underlying value of land, while others don't, which distorts the analysis.

Based on this, the most recent and relevant complete data set available consisted of the indicator titled total fixed assets (net) for 2019[3]. Data is used for 2019, as more recent data is too incomplete to make sufficient cross-country comparisons. Total fixed assets comprise the net value of 5 sub-indicators:

[2] However, non-financial liabilities are rare, often of a negligible level, and no data was available on them.
[3] Non-financial assets comprise total fixed assets, which were covered in the analysis, together with inventories, valuables, and non-produced non-financial assets *(such as land, natural resources, and goodwill),* which were not covered in the analysis due to data limitations.

1. Dwellings;
2. Other buildings and structures;
3. Machinery and equipment and weapons systems;
4. Cultivated biological resources; and
5. Intellectual property products.

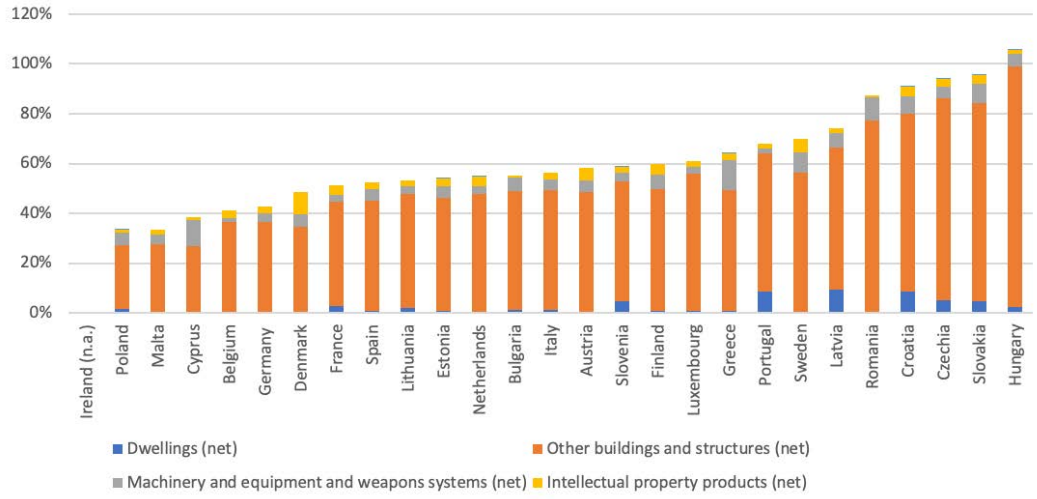
Cultivated biological resources hold a smaller share when compared to the other 4 asset types, therefore, they are not visible in the figures below. The subcategories of fixed assets displayed in the figures amount to the total amount of fixed assets, and in the case that the variables shown don't amount exactly to the total value a bar is shown for 'Rest', to represent the categories not displayed.

Total fixed assets exclude the underlying value of land, reducing the possibility of inconsistent cross-country comparisons. The data was transformed into a percentage of GDP (divided by nominal GDP in 2019), and similar to the previous section of the report, presented separately for the general government, households, firms, and at an aggregate level of the economy. Data for Ireland is not available.

General government net fixed assets

Figure 27 below outlines general government net fixed assets as a percentage of GDP in 2019 for the select countries under review.

Figure 27. Government net fixed assets as a percentage of GDP (2019)



Source: Authors' estimates, based on data accessed from Eurostat.

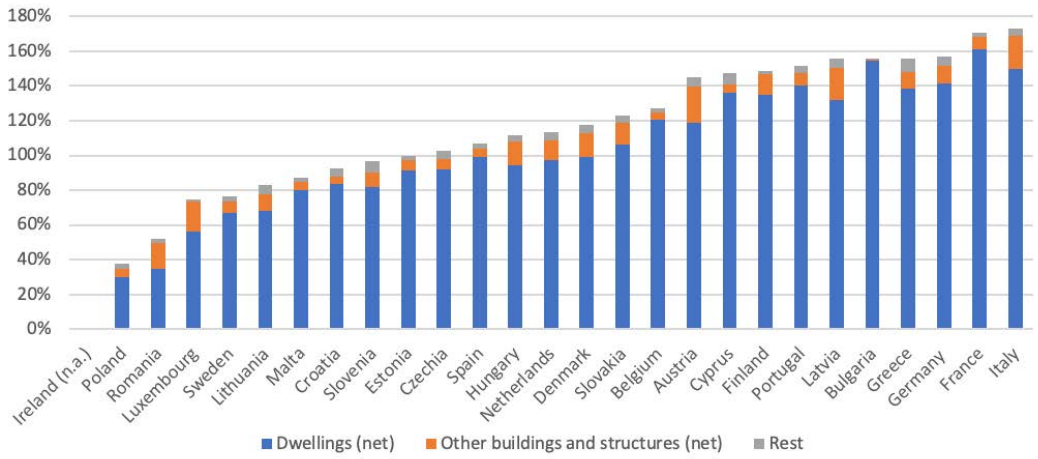
The European Union country with the lowest level of general government net fixed assets as a percentage of GDP in 2019 was Malta (31.3%), while the country with the highest level was Hungary (105.5%). Most government net fixed assets are comprised of buildings and structures. The other three categories of fixed assets hold a relatively small share.

An interesting point to note here is that the countries that have high net fixed assets are the ones with low net financial assets, such as Hungary and Romania. Additionally, many countries that have low net fixed assets have high net financial assets, like Germany and Denmark.

Household net fixed assets

Figure 28 below outlines household net fixed assets as a percentage of GDP in 2019 for the select countries under review.

Figure 28. Household net fixed assets as a percentage of GDP (2019)



Source: Authors' estimates, based on data accessed from Eurostat.

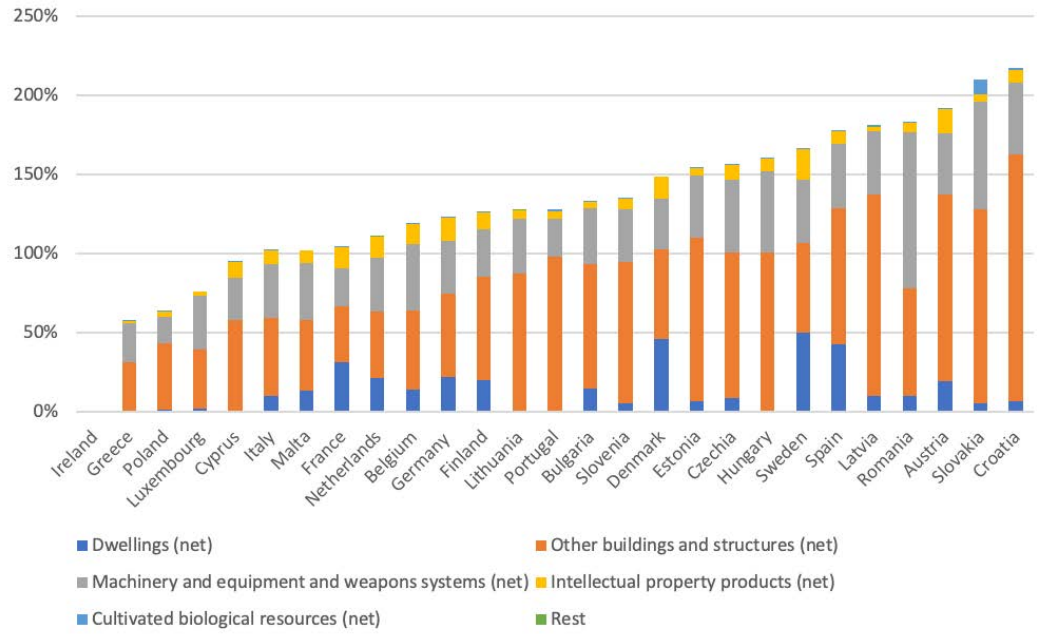
The European Union country with the lowest level of household net fixed assets as a percentage of GDP in 2019 was Poland (37.7%), while the country with the highest level was Italy (173.3%). Most household assets are dwellings. The only other significant, to a far lesser extent, fixed asset is other buildings and structures.

In general, the countries that had the highest household net fixed assets are not the same ones which had the highest financial assets (Denmark, Sweden, and the Netherlands). Sweden has the fourth lowest level of household net fixed assets.

Firm net fixed assets

Figure 29 below outlines firm (non-financial corporations) net fixed assets as a percentage of GDP in 2019 for the select countries under review.

Figure 29. Firm net fixed assets as a percentage of GDP (2019)



Source: Authors' estimates, based on data accessed from Eurostat.

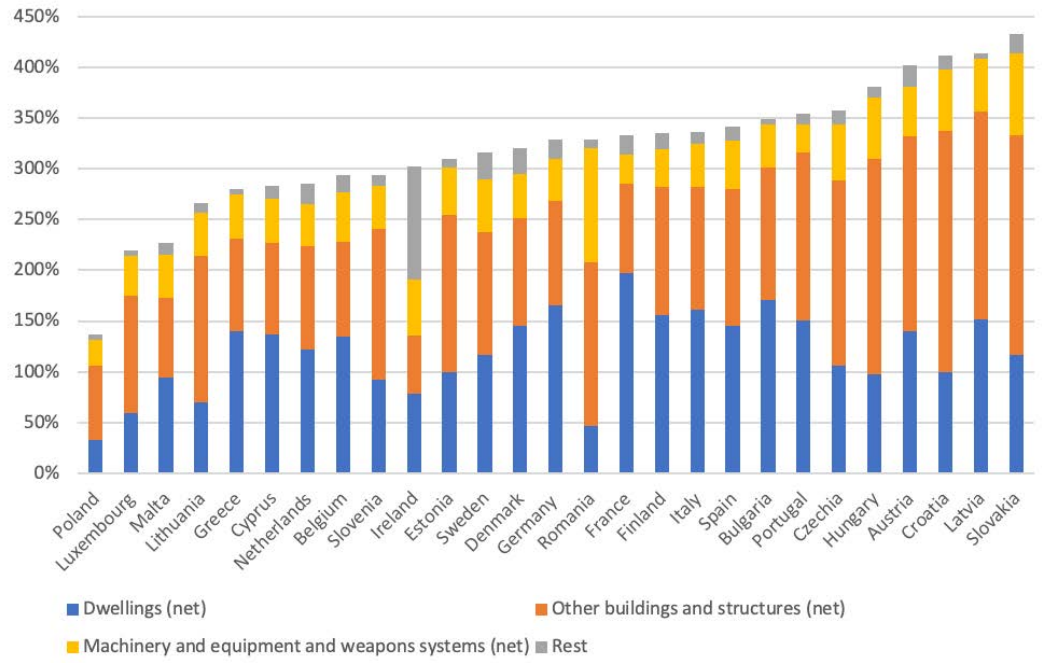
The European Union country with the lowest level of firm net fixed assets as a percentage of GDP in 2019 was Greece (57.8%), while the country with the highest level was Croatia (211.3%). The firm's next fixed assets are mainly comprised of buildings and structures, followed by machinery, equipment, and weapons systems. Dwellings are the third largest category of fixed assets.

Here the results are relatively mixed between different regions in Europe. However, it seems that many of the countries with the highest levels of firm net fixed assets are Eastern European. Countries that had the highest firm financial assets are the ones that have relatively low firm fixed assets, such as Luxembourg.

Total economy net fixed assets

Figure 30 below outlines net fixed assets as a percentage of GDP in 2019 at an aggregate level of the economy for the select countries under review.

Figure 30. Total economy net fixed assets as a percentage of GDP (2019)



Source: Authors' estimates, based on data accessed from Eurostat.

The figure above includes the rest of the world sector whilst the figure below shows the sum of government, household, and firm sectors. The inclusion of the rest of the world does not make a difference, as most fixed assets are held domestically.

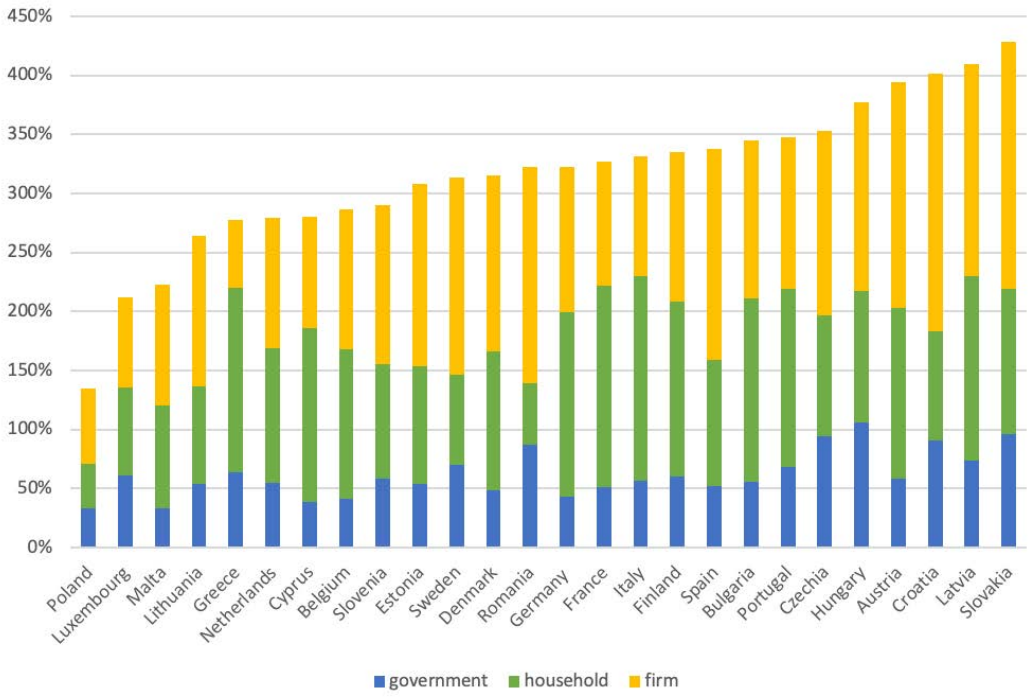
The European Union country with the lowest level of net fixed assets as a percentage of GDP in 2019 at an aggregate level was Poland (136.5%), while the country with the highest level was Croatia (443.9%). The largest subcategories of net assets were dwellings and other buildings, followed by machinery, equipment, and weapons systems. Eastern European countries have the highest total net fixed assets.

Figure 31 below outlines net fixed assets as a percentage of GDP in 2019 for the total economy (government + household + firm) for the select countries under review.

The figure above shows the total fixed assets when summing government, household, and firm sectors. The proportion of net fixed assets is similar across the countries observed when looking at the 3 sectors included. Households and firms hold most of the fixed assets while governments hold significantly less.

Romania has relatively low household fixed assets, while Greece and Italy have relatively high shares. Romania and Hungary have high shares of government fixed assets. Croatia and Spain have high shares of firm fixed assets.

Figure 31. Total economy net fixed assets (government + household + firm) as a percentage of GDP (2019)



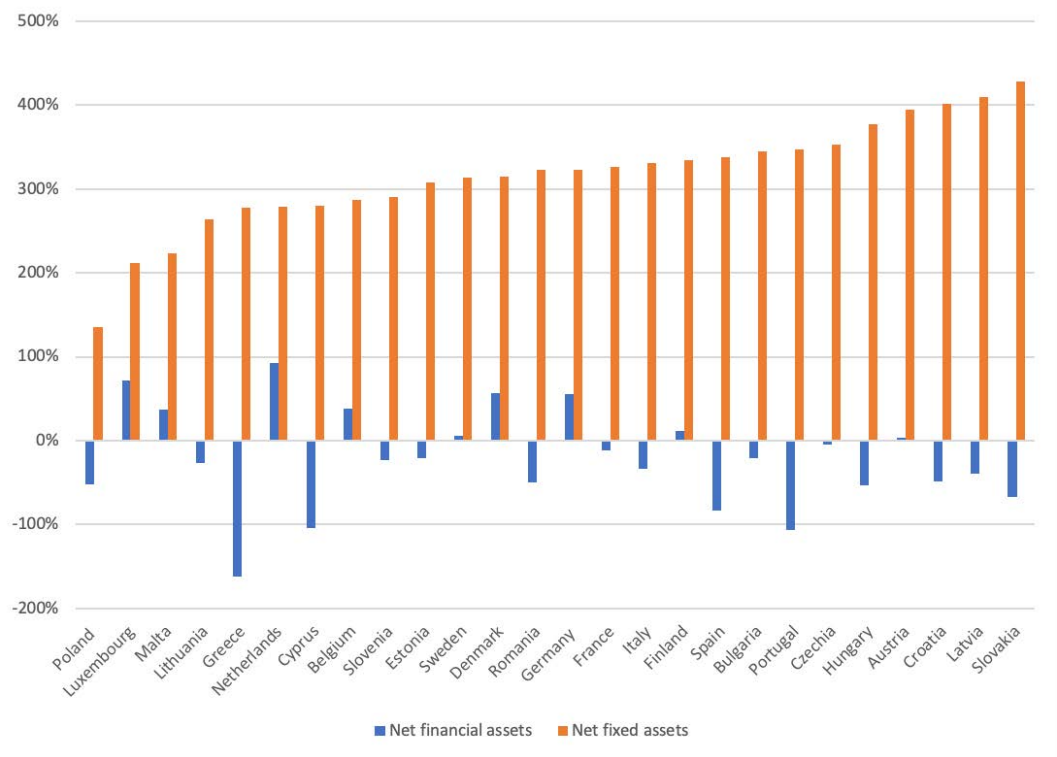
Source: Authors' estimates, based on data accessed from Eurostat.

Conclusion on fixed assets

Figure 32 below shows the total economy (general government + household + firm) net fixed and net financial assets in 2019.

The figure above shows that across the EU, countries have much higher net fixed assets than financial assets. As can be seen, all countries have positive net fixed assets, whilst the same cannot be said for net financial assets. Net fixed assets are much more homogenous across the countries observed than financial assets.

Figure 32: Total economy (government + household + firm) net fixed and net financial assets (2019)



Source: Authors' estimates, based on data accessed from Eurostat.

The countries with the highest total net fixed assets have been not the same as the ones with the highest total financial assets. Slovakia and Latvia have the highest total net fixed assets, but relatively low financial assets. Poland ranks relatively weakly in both areas in comparison to the other EU countries. The Netherlands has a good position as both fixed and financial assets are relatively high. The same holds (to a lesser extent) for Luxembourg, Germany, and Denmark. Out of the heavily indebted countries, Greece ranks relatively weakly with below-average net fixed assets and the lowest financial assets. Italy ranks stronger with above-average fixed assets and the relatively average value of net financial assets.

4. CONCLUSION

This study provided a broad high-level snapshot of the sustainability of government debt amongst European Union countries in recent years. An assessment of the sustainability of individual country debt positions would require a deeper analysis, considering certain factors such as the growth of the underlying economy, the fiscal policy of the government, the political economy etc.
The change of government debt to GDP ratios since around 2015 looks hopeful, as they are decreasing or at least stabilising in most of the EU countries (France being the most notable exception). When looking at net financial assets, most countries had (positive) growth over 2014-2019, however, in recent years almost all EU countries had negative values (more precisely, an excess of liabilities).

From our analysis, government debt (as a percentage of GDP) varies significantly in magnitude amongst European Union countries. Most European Union countries registered a decrease in their government debt-to-GDP ratio throughout the period of sustained economic growth for the Union (2014-2019). From 2020 onwards, this decrease has continued, and EU economies seem to be on the road to recovery from the pandemic.

When extending the analysis from movements (increases/decreases) in government debt to movements in net financial assets, both in terms of positive and negative performances, the movements are significantly more amplified. This supports our hypothesis/conclusion that an analysis of the sustainability of government debt should also consider movements on the financial asset side of the government balance sheet. When looking at net financial government assets most countries had (positive) growth over 2014-2019. In recent years however almost all EU countries experienced negative (but slightly growing) values.

Nordic countries have the highest levels of net government financial assets (as a percentage of GDP), whilst Southern European countries seem to have the lowest levels. Additionally, the positions of the most indebted countries deteriorated within the time analysed.

The effect which GDP variations over time may have on its usefulness as a scaling factor for the indicators in this paper was analysed by calculating the change of general government net financial assets from 2014 to 2019 relative to both current GDP and to the GDP in 2014. It was found that the effect of GDP variation was in fact very strong for Ireland, and also much stronger than for other countries. To what extent GDP variation influences the ratios in the other countries under consideration would require further investigation for which time was lacking. However it seems reasonable to assume that Ireland is the country where the variation in time of GDP has the strongest effect on the scaled indicators, whereas this is less the case for the other countries. Throughout this paper we have continued to use current GDP as a scaling factor for the indicators under investigation.

Our analysis showed that the position in terms of net financial assets can differentiate amongst sectors of the economy, and we thus presented data also for households, firms, and shortly for the rest of the world sector. When looking at households, we found that all countries have far higher financial assets than liabilities. Nordic countries and Italy have the highest net values. Looking at firm financial positions, all the 27 countries analysed had negative net positions. It seems that countries with the most multinational companies have the lowest net firm financial asset positions. From looking at the rest of the world sector, we can see that foreign financial assets and liabilities contribute to a relatively small share of GDP for most EU countries. However, the opposite holds for tax havens such as Ireland, Cyprus, and Luxembourg.

We showed data on financial assets on the aggregate level of the economy. It seems that out of the most indebted countries, when looking at net financial assets, Greece has a weak position. Italy, on the other hand, ranks relatively well in the top half of EU countries. In general, households contributed to most of the total economy's financial assets and had the smallest share of financial liabilities. Firms contributed the most to financial liabilities.

We also present data on net fixed assets for these sectors. Total net fixed assets come mainly from households and firms. The countries with the highest total net fixed assets are not the same as the ones with the highest total financial assets. Slovakia and Latvia have the highest total net fixed assets, but relatively low financial assets. Luxembourg ranks low with the second smallest value of fixed assets and high when looking at financial assets. The Netherlands, Germany and

Denmark all have relatively good positions as they have positive net financial assets and around average net fixed assets. Out of the heavily indebted countries, Greece ranks relatively weak with below-average net fixed assets and the lowest net financial assets. Italy ranks stronger with above-average net fixed assets and a relatively average value of net financial assets.

This report has shone light on some of the different factors that should be involved in the discussion of debt sustainability. EU countries differ vastly regarding the composition of their balance sheets, with the shares of financial and fixed assets across the different sectors ranging significantly. Looking at the time analysed, EU economies seem to be on the path to recovery from covid. We should use this momentum to prioritize the sustainable transition while understanding and assessing debt sustainability from a broader perspective as utilized in this report. International institutions and countries that base fiscal analyses, recommendations and policy on DSA's should start from a more comprehensive understanding of debt sustainability. The latter will lead to different assessments about the health and stability of an economy, leading to new insights and discussions about fiscal policy and fiscal space.

REFERENCES

Comelli, M. (2021). *Why Northern Europe is so indebted*. The Loop: European Consortium for Political Research (ECPR) Political Science Blog. https://theloop.ecpr.eu/why-northern-europe-is-so-indebted/

Council of the EU. (2024). *Economic governance review: Council adopts reform of fiscal rules.* https://www.consilium.europa.eu/en/press/press-releases/2024/04/29/economic-governance-review-council-adopts-reform-of-fiscal-rules/

Danmarks NationalBank. (2018). *Household wealth and debt*. Danmarks NationalBank. https://www.nationalbanken.dk/en/publications/themes/Pages/Household-wealth-and-debt.aspx

Danske Bank. (2018). *Danish households are resilient despite record debt levels*. Insights – 28.11.2018. https://danskebank.com/news-and-insights/news-archive/insights/2018/28112018

ECB. (2023). *Pandemic emergency purchase programme (PEPP)*. ECB. https://www.ecb.europa.eu/mopo/implement/pepp/html/index.en.html#:~:text=The%20ECB's%20pandemic%20emergency%20purchase,(COVID%2D19)%20outbreak.

European Commission. (2022). *Creation of an economic governance framework adapted to future challenges*. European Commission press release. (09-11-2022). https://ec.europa.eu/commission/presscorner/detail/es/ip_22_6562

Eurostat. (2022a). *Provision of deficit and debt data for 2021*. Eurostat Euroindicators. (22-04-2022). https://ec.europa.eu/eurostat/documents/2995521/14497748/2-22042022-AP-EN.pdf

Eurostat. (2022b). *Households – statistics on financial assets and liabilities.* Eurostat. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Households_-_statistics_on_financial_assets_and_liabilities#:~:text=Across%20the%20European%20Union%20(EU,insurance%20companies%20and%20pension%20funds.

Eurostat. (2022c). *Non-financial corporations – statistics on financial assets and liabilities*. Eurostat. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Non-financial_corporations_-_statistics_on_financial_assets_and_liabilities&oldid=582145

Eurostat. (2022d). *Financial flows and stocks (nasa_10_f).* Eurostat. https://ec.europa.eu/eurostat/cache/metadata/en/nasa_10_f_esms.htm

Honohan, P. (2021). *Is Ireland really the most prosperous country in Europe?* Central Bank of Ireland. Economic Letter, Vol. 2021, No. 1. https://www.centralbank.ie/docs/default-source/publications/economic-letters/vol-2021-no-1-is-ireland-really-the-most-prosperous-country-in-europe.pdf

Suttor-Sorel, L. (2023). *The debts we need: Reinforcing Debt Sustainability with Future-Oriented Fiscal Rules*. Finance Watch. https://www.finance-watch.org/publication/report-the-debts-we-need-reinforcing-debt-sustainability-with-future-oriented-fiscal-rules

Irish Fiscal Advisory Council. (2023). *Demystifying Ireland's national income: a bottom-up analysis of GNI* and productivity.* (June 2023). https://www.fiscalcouncil.ie/wp-content/uploads/2023/06/Demystifying-Irelands-national-income-a-bottom-up-analysis-of-GNIstar-and-productivity-202306final.pdf

Sapir, A. (2020). *Why has COVID-19 hit different European Union economies so differently?* Bruegel. https://www.bruegel.org/policy-brief/why-has-covid-19-hit-different-european-union-economies-so-differently

Statista. (2022). *National debt of the European Union and the euro area in relation to the gross domestic product (GDP) from 2017 to 2027*. https://www.statista.com/statistics/253616/national-debt-of-the-eu-and-the-euro-area-in-relation-to-the-gdp/

Statistics Finland. (2022). *General government net financial assets fell in the first quarter of 2022*. https://www.stat.fi/en/publication/cktx1g3eo03n50b50e2k1thzj

This is a Sustainable Finance Lab publication
www.sustainablefinancelab.nl