

Is Higher Debt an (Almost) Free Lunch?”

By Kenneth Rogoff, Harvard University¹

Abstract

Faced with a global natural catastrophe, countries must spend to deal with the immediate crisis, and to reduce longer-term economic scarring. Sustained infrastructure and education spending can help counter headwinds to the long-term outlook. However, the fact that government borrowing rates are at extremely low levels does not imply that the very high debt, especially short-term borrowing, is a free lunch. Although real borrowing rates are on a gentle long-term declining trend, current levels are below trend. Massive underfunded old-age transfer and support programs are the most conspicuous form of hidden non-market “junior” debt, but as states cast ever-wider nets of implicit guarantees, they are far from the only ones. The fact that interest rates are below growth rates has long been the norm through advanced economies and emerging markets, but have not been a guarantee of safety. And it seems extremely likely that the rate of return on both public and private investment is comfortably above the growth rate, the world is probably not in an inefficient equilibrium where higher government debt is a free lunch.

¹ Economics Department, Harvard University, Cambridge MA 02140 USA. krogoff@harvard.edu This paper was prepared for the European Fiscal Board annual meeting on February 26, 2021. An earlier version, Rogoff (2021), was presented at the American Economic Association meetings in January 2021.

I. Introduction

The worldwide pandemic has already led a massive increase in government debt, especially in advanced economies.² In the face of an extraordinary natural catastrophe, the cost/benefit/risk calculus gave few choices. Disaster relief fiscal spending has helped cushion the immediate effects to reduce long-term economic scarring. Going forward, sustained spending on infrastructure, health and education will be needed to counter long-term headwinds to growth post-pandemic.

However, with massive deficits on the one hand, and the likelihood of very slow future growth on the other, debt to GDP ratios throughout the world soared in 2020 and are likely to continue to rise in 2021. As 2020 ends, gross public debt is already averaging over 125% of GDP in advanced economies, (62 percent in emerging markets and 49% in low-income developing economies). And, unfortunately, even though the macroeconomic outcomes as of this writing have been far better than most feared a year ago, the crisis is far from over.

There is little debate that whatever the ultimate costs of dealing with very high debt, including reduced flexibility in responding to future shocks, they are surely far less than the downside that has faced the world since 2020. Nevertheless, very high and rising debt is hardly a free lunch, as some now seem to be arguing. Countries that plan on running their economies in a “hot” wartime mode indefinitely are taking a material risk of being forced to into a period of difficult austerity in the future. Global real interest rates were likely well below long-term historical trend in early 2021, even if the long-term trend exhibits a gentle decline on the order of magnitude found by Schmelzing (2020). A gentle trend decline of 2.3 basis points per year

² IMF Fiscal Monitor, October 2020.

cannot explain the more than 300 basis point drop in the inflation-adjusted 10-year US Treasury bill rate that has taken place from before 2008 financial crisis.

Much of the basis for the view that debt is non-issue for advanced economies revolves around the observation that for most countries, the growth rate of the economy typically exceeds the interest rate on government debt (albeit this was certainly not the case in 2020).³ If a positive growth/interest differential can be counted on to hold indefinitely with high probability, then countries ought to be able to handle much larger debt/GDP ratios than the historical norm, As long as growth outstrips the interest rate on debt, then over time, debt to GDP levels will eventually stabilize or decline as long as the primary deficit to GDP ratio is capped at some level. If another crisis hits, so the logic goes, it does not matter because the borrowing rate will only go down and the government will be able to borrow even more.

We will argue that this view is pollyannish, even for advanced economies. First and foremost, not all adverse shocks make interest rates go down. The fact safe interest rates dropped in 2008 and 2020 is no guarantee for the future and of course, interest rates spike for the periphery of Europe. Even if a global conventional war is unlikely, the risk that other adverse shocks could lead to a sustained spike in government spending, for example climate and health shocks, could become much larger. It is sometimes claimed that the only shock that will raise the real interest rate r above the growth rate g is a major rise in productivity and trend growth. But what if the main locus of this shock to Asian growth, with Europe and the United States stagnating?

³ Domeij and Ellingsen (2018), Blanchard (2019), Furman and Summers (2020).

Second, recent research shows that growth interest differentials have been the norm over the past two centuries (e.g., Mauro and Zhou, 2020), but this has not always led to falling debt/GDP levels. Politicians have long learned how to spend more than the growth interest dividend, and negative $r - g$ differentials do not appear to imply a significantly lower risk of crisis. Third, policies to that aim to overly leverage the growth interest differential, as are widely be discussed, can often lead to higher interest rates, lower growth, or both. Indeed, countries with very high debt levels appear to enjoy (on average) shorter spells where the growth interest differential is positive. Fourth, as Rogoff (2020) emphasizes, conventional measures of “senior” marketable public debt miss the larger body of “junior debt” embedded in old age pensions and medical care.⁴ As such, market measures of risk to interest rates may miss the effects of high debt on risks to pensions and other “junior” debt.

To be clear, advanced economies face a very different risk/reward calculus to higher debt levels than do most poorer countries. Over the next few years, the risks of default in emerging market and developing economies will likely remain very high even as the pandemic recedes. There is every reason to expect an uneven global recovery, if only because advanced economy populations should be largely vaccinated by late 2021, but it would take another year to cover most emerging markets, and even longer for low income developing economies. Emerging markets are facing all the same health problems as advanced economies, and many are having to do so in the face of much tighter fiscal constraints, on top of a global recession; many came into the pandemic already carry high public and private external debt loads. The risk of a wave of

⁴ Although this junior debt does not carry quite the legal status of marketable general government debt, there are nevertheless strong political constraints on reducing these payments. The drastic pension reforms imposed by the Monti government (2011-2013) in Italy would have been difficult for a normal elected government and have indeed proven difficult for later governments to sustain.

emerging market and developing economy defaults in the aftermath of the pandemic is a very real one, albeit not the focus here.⁵

II. Debt and Deficit Sustainability Issues for Advanced Economies

For advanced economies, the problem of carry very high public debt is not sustainability, but loss of flexibility in responding to unforeseen shocks. Outright default, though certainly not unthinkable, is not a likely possibility. By and large, most advanced economies have “graduated” from outright sovereign default, using the terminology of Reinhart and Rogoff (2009).⁶ High debt to GDP levels, even over 125% of GDP, do not imply that default is around the corner for an advanced economy as they might for an emerging market. This is true even though the strong weight of empirical evidence – not to mention the experience of the last decade -- supports the claim that periods of every high debt are, on average, associated with lower growth.⁷ Historically, a central reason for this association is that countries with very high debt have been limited – or politically reluctant – to engage in as aggressive countercyclical fiscal policy as countries with much lower debt to GDP ratios.⁸ The argument some are making that this reluctance has evaporated due to low interest rates and populism, and so needn’t be a concern in the future, is politically naïve.⁹

⁵ (See Bulow, Reinhart, Rogoff and Trebesch, 2020).

⁶ See also, Qian, Reinhart, and Rogoff (2011), and Reinhart, Reinhart, and Rogoff (2012).

⁷ See Reinhart and Rogoff (2010), Reinhart, Reinhart and Rogoff (2012); see also the surveys in Abbas, Pienkowski and Rogoff, 2019.

⁸ See, for example, Romer and Romer (2019).

⁹ For emerging markets and developing economies, it is an entirely different story. State capacity is considerably more circumscribed, it is much more difficult to spread the pain of adjustment if pressed by rises in market interest rates. As such these countries face much lower the thresholds of debt to GDP before running into difficulties. The situation is especially acute in the many cases where default has been serial and market credibility can evaporate particularly quickly at surprisingly low debt GDP ratios; Reinhart, Rogoff and Savastano (2003) refer to this phenomenon as “debt intolerance.

Figure 1 illustrates the sharp rise in advanced economy debt over the first year of the pandemic; Nevertheless, as long as massive pandemic responses prove transitory, then as long as it is only transitory, the real risks to longer-term effect on debt sustainability relates to providing economic security in an aging society. According October 2020 projections by the Congressional Budget office; US debt to GDP is anticipated to reach 190 percent by the middle of the century, and these do not even include the recurrent massive fiscal packages passed since then. With the baby boom generation going into retirement over the next fifteen years, underfunded social security and old age medical support are expected to require large transfers from the government account to stay afloat.¹⁰

Figure 2 gives a broader perspective, considering off-balance sheet support that in many cases was much larger than direct support. As the long history of financial crises as shown, even if such guarantees are “free” most of the time, they nevertheless incur material risk.

III. Very High Debt, Slower Growth and Fragility

Of course, there are vast gradations between the United States at the center of the global financial system, and periphery advanced countries at the periphery advanced economies such as those in Southern Europe. The global hegemon has extraordinary capacity to borrow, and the United States has exercised this privilege vigorously. As Figure 3 shows, US public borrowing in global debt markets is roughly equal to the combined borrowing of all the other advanced economies, even when Japan (by far the second largest borrower) is included. A similar figure

¹⁰ Even allowing for the fact the CBO projections do not include the additional 900 billion stimulus passed in January 2021, or further likely stimulus packages in 2021, the effect of the pandemic is much smaller than the effect of aging. Indeed, in the outward years, the rise in debt/GDP is muted by the downward pressure the pandemic has placed on interest rates, and the projected debt/GDP ratio for 2050 is only slightly higher than in the pre-pandemic forecast the CBO made in January 2021.

would hold for corporate borrowing. In the wake of two extreme negative shocks, the United States nevertheless still has huge fiscal space. However, Farhi and Maggiori (2018) show both in theory and in practice, there can be a tendency for the reserve currency issuer to overextend borrowing into territory that can become susceptible to confidence shocks, or simply a generalized rise in global interest rates, say due to sustained fast growth and financial market development in Asia in the coming decade. If Europe's next generation fund helps catalyze a growth in Euro debt, that too could undermine demand for dollars.

Nevertheless, the need for eventual adjustments is not likely to come anytime soon if real interest rates remain at today's remarkable low levels. Furman and Summers (2020) have forcefully argued that rates are as likely to go down as up, and that governments should stop paying attention to debt/GDP as a vulnerability altogether and instead just focus on the size of interest payments. They have an important point, but the maturity of debt makes an enormous difference for the risk of rapid adjustment. If borrowing is relatively short duration (as it is for the United States), sustained upward shocks to interest rates can create pressures that might test a highly divided political system to respond to. Figure 4 uses the inflation-indexed ten-year US Treasury bond from 2003 to the present to gain perspective on this issue. Although many commentators point to slow-moving variables such as demographics and productivity growth to explain the 21st century decline in real rates, the figure suggests that almost all the decline this century happened in the aftermath of the twin shocks of the 2008 financial crisis and the 2020 pandemic.

It is important to remember that, historically, adverse shocks can on occasion push interest rates up, not down, especially shocks that create large fiscal stress. Figure 5, based on the seminal work of Schmelzing (2020), shows the downward trend in the "safe asset" real

interest rate over eight centuries; a global real interest rate yields a similar picture. But it is a very gradual decline. Over the full sample, the average fall in real interest rates is 1.67 basis points per annum: 2.29 basis point post 1820. The real interest decline over the 12 years has been more than 200 basis points, an order of magnitude greater than the trend decline. And shocks can indeed happen in both directions; medium term fluctuations can be quite large. Given that the average maturity of public debt in advanced countries is about six years, there is some time for adjustment to a general rise in interest rates. However, at very high debt levels, the adjustment could still be quite painful, particularly if political turmoil leaves doubt in markets as to how quickly adjustment is coming.¹¹ Also, the official average maturity measure is in overstatement from the perspective of the consolidated government balance sheet. Thanks to trillions of dollars of central bank purchases of government debt in the quantitative easing era, the average maturity of consolidated government debt is considerably less than six years. Under the extreme QE policy of modern monetary theory (e.g., Kelton 2020), the central bank is charged with buying up a very large fraction of government debt. This may indeed reduce the near-term interest burden (though in a country with negative rates like Germany zero interest money would raise the burden!), but it also means that the debt must be rolled over very quickly if interest rates rise, making adjustment more difficult.¹²

IV. $R - G < 0$

What about the argument, popularized by Blanchard (2019), that as long as interest rates are less than growth rates, a very large and prolonged spree of deficits is not an issue, and need even result in higher taxes. Even if it is necessary to pay for the odd mega-crisis every decade or

¹¹ IMF Fiscal Monitor (October 2020).

¹² Of course, it is possible simply to allow inflation instead, but the effect would be quite dramatic in a sustained higher rate environment.

so, eventually growth will whittle down the down the weight of debt even if the interest due is perpetually rolled over, and there is no fiscal adjustment. Of course, what this argument obscures is that medium-term growth trends can be difficult to predict, and historically medium-term real interest rate have also been difficult to predict.

As we have already noted, having a situation of negative $r - g$ (real interest rate minus real growth) is hardly new. Table 1 draws on Mauro and Zhou (2020). It shows that, in fact, having that negative interest/growth differentials have been more extremely common than not over the past two centuries. Mauro and Zhou also show that a negative value of $r - g$ for a country does not seem to significantly reduce the probability that a shock might hit requiring significant sudden adjustment. Relatedly, as Lian, Presbitero and Wiriadinata (2020) have shown, the length of negative $r - g$ episodes – on which the free lunch argument relies – tend to be shorter the higher initial debt level. This empirical observation is consistent with the theoretical work of Reis (2021), who observes that even though the real interest on government debt may be less than the growth rate, the real return on private investment appears to be significantly higher than the growth rate. (In which case the global economy is not in an inefficient equilibrium ala Diamond (1965), where the private sector is investing too much in maintaining a high capital stock, and government debt that crowds out investment is actually Pareto improving.) Instead, Reiss examines a number of widely discussed policies aimed at exploiting the $r - g$ dividend. He finds suggests that in most cases such policies, for example a large-scale tax and transfer scheme to reduce inequality, will often either raise r , lower g , or both.

There is little debate that high return infrastructure or education investments would be helpful even after the economy recovers from the pandemic, and even if interest rates return to trend mean. There has been widespread agreement among economists on this point for the past

twelve years, certainly including myself.¹³ Yes, as figure 6 shows, infrastructure spending has been falling significantly during the 21st century across advanced economies, even as emerging markets such as China, Brazil and Russia continue to spend heavily. One explanation, famously advanced by Gramlich (1994), is that the returns to infrastructure in advanced economies are necessarily lower because all the high return projects have already been implemented, so that the largest infrastructure needs are for maintenance and repair. This is a topic beyond the scope of this paper, but I would venture that in fact there are still very high return projects the government can undertake ranging from providing universal internet service, to hardening systems against cyber-attack, to investing in new technologies that can transform education for all ages.

Is the multiplier higher in low growth low interest rate economies, as long as $r - g$ is negative? Not necessarily. Honda and Miyamoto (2020) study 17 advanced economies between the years 1985 and 2017. They find that multipliers in aging economies are significantly less than in non-aging economies, indeed slightly negative in the short run. If demographics is a major reason for slowing growth, this seems like a natural corollary. If, for example, there are going to be less workers, then the returns to normal infrastructure projects that enhance productivity are naturally less.¹⁴

Lastly, as I have already emphasized, official market-based public debt only gives a very limited picture of a country's broader risks and vulnerabilities. Private debt has exploded since advanced economy debt levels last hit similar peaks at the end of World War II, and

¹³ See Rogoff "The Infrastructure Spending Challenge", Project Syndicate December 7, 2020, and links therein.

¹⁴ Multipliers are probably quite high in emerging markets where growth is much higher than in advanced economies (see Jorgenson (2021) in this issue), but this is not necessarily true for highly indebted emerging market economies. Figure 7, taken from a 2019 world bank study that builds on Iltzetki and Mendoza (2013), illustrates a typical finding in the literature. At very high debt levels, the risks of fragility outweigh the normal multiplier effects, and the fiscal multiplier can be negative.

governments cannot realistically allow these to go into mass default, as the experience of the pandemic underscored. Reinhart and Rogoff (2009) note that in many fiscal crises, it is the “hidden debts” that come onto the books as a crisis unfolds, that are often the most problematic. Remarkably, thanks to huge government support, bankruptcies have actually fallen during the pandemic (figure 7). If growth falters, perhaps because of virus mutations or difficulties with vaccine rollouts, dealing with bankruptcies is going to be extremely challenging, all the more so in an environment where many industries and businesses are going to have to restructure after the pandemic, both because of the rise of remote work, and lingering problems with the virus.

Finally, modern governments face a vast array of other obligations that have a competing claims on government resources and need to be considered alongside debt when assessing fragility and sustainability. Figure 8 shows the staggering high level of public pension payment across OECD economies, updated to 2018. For Italy, even with its 2011 reform, public pensions account for over 15% of GDP, far more than the cost of interest payments even if rates on Italy’s public debt were to double overnight. Arguably, part of why investors are so convinced that market-based public debt “safe” is precisely the vast “junior” debt layered below it. (In the future, this assumption will likely be tested.) If so, then higher market-based debts might simply transfer risk to “junior” debt.

V. Conclusions

The high levels of government deficits during the pandemic, over 18% of GDP in the first year for the US alone, were well justified in a wartime like situation. With many problems still ahead as of this writing, continued large-scale deficits are still needed. As the economy emerges, even over the long run, debt finance to support long neglected high-return maintenance and investment in infrastructure and education, and green investment, may raise debt to GDP ratios

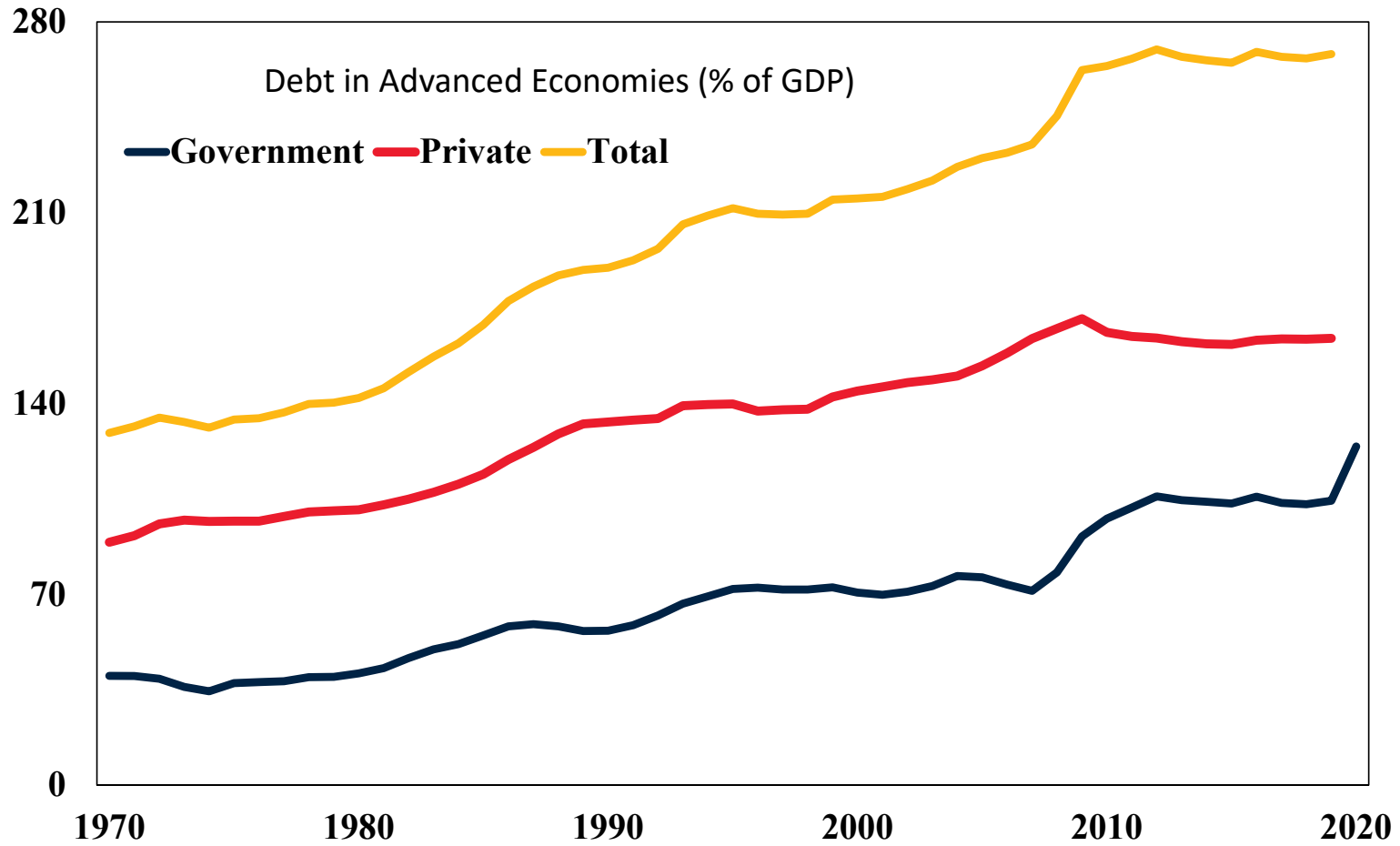
in the short run, but will lower them in the long run. Nevertheless, one should be cautious of putting advanced economies on permanent war-time fiscal footing, banking on low interest rates lasting indefinitely, especially if borrowing is tilted towards shorter maturities. It was fortunate that advanced economies could use debt as aggressively as they did in the pandemic, but that capacity should not be taken for granted.

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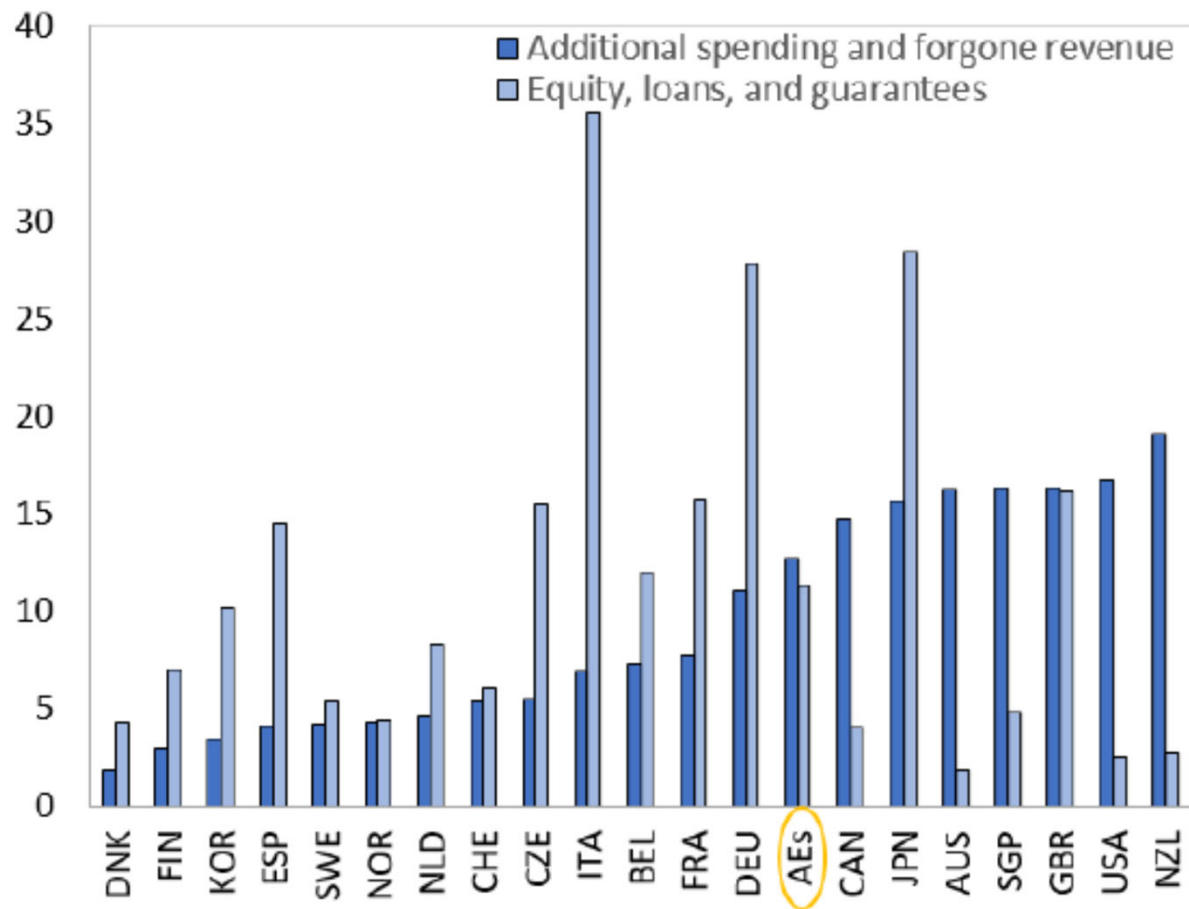
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Figure 1: Pandemic Debt a sharp temporary increase Debt/GDP, but is it a trend break?



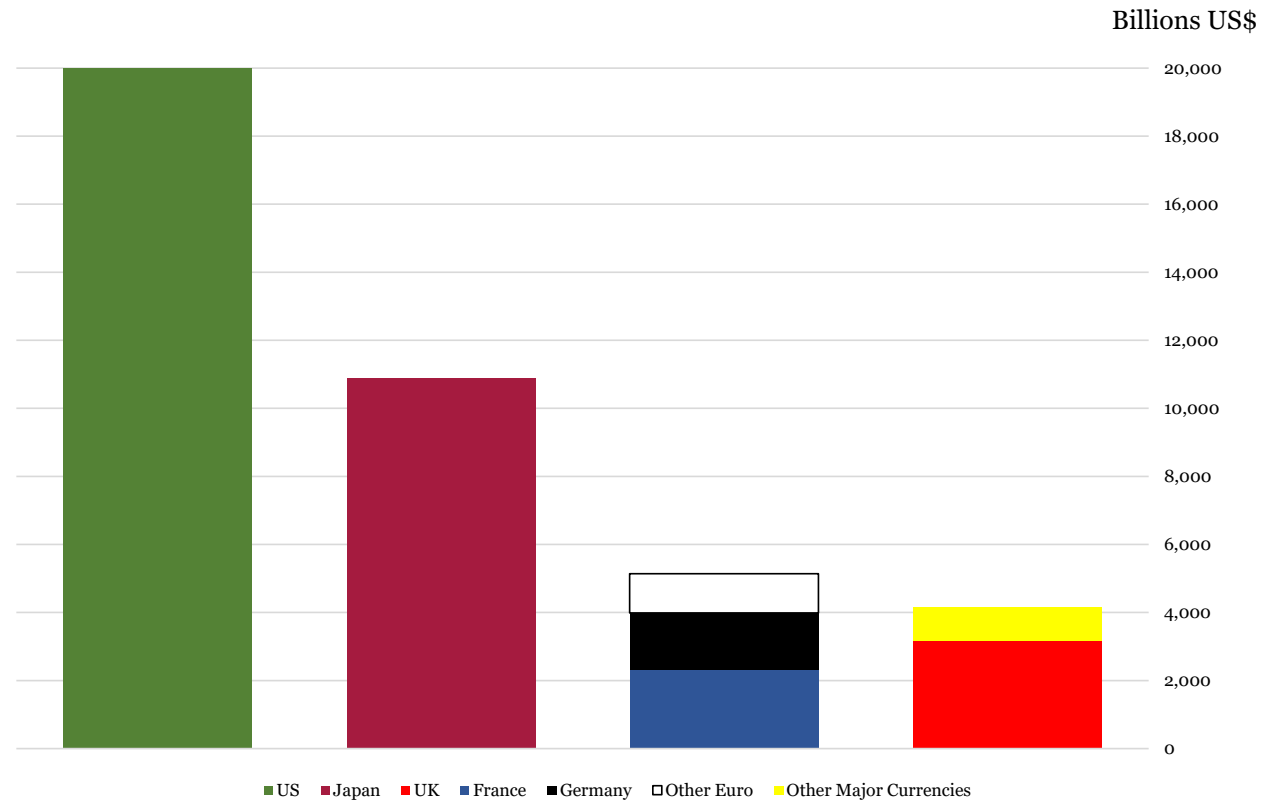
Data source: Kose (2020), The World Bank

Figure 2: Discretionary Fiscal Support During the COVID-19 Pandemic



Source: International Monetary Fund Fiscal Monitor Update January 2021

Figure 3: US Exceptionalism: Outstanding Debt Securities



Early warnings from EMs

August 2020 or latest data available. Converted at market rates of August 2020. Other Eurozone are high-grade Euro denominated debt (Austria, Belgium, Finland, Netherlands). Other major currencies are Australia, Canada, Sweden, Switzerland, and UK.

Source: Iltzetski, Reinhart and Rogoff, *Brookings Papers on Economic Activity*, November 2020.

FIGURE 4

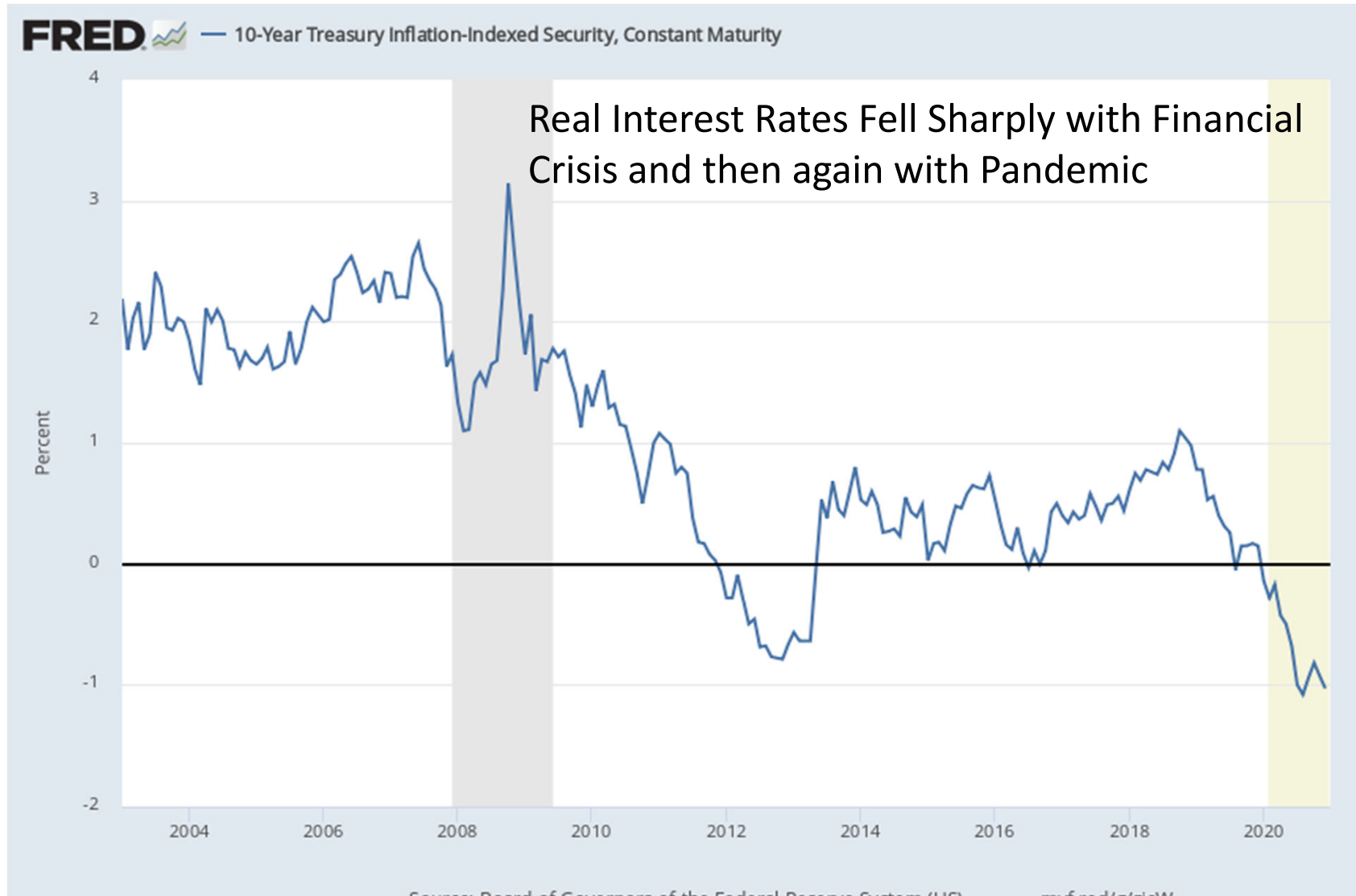
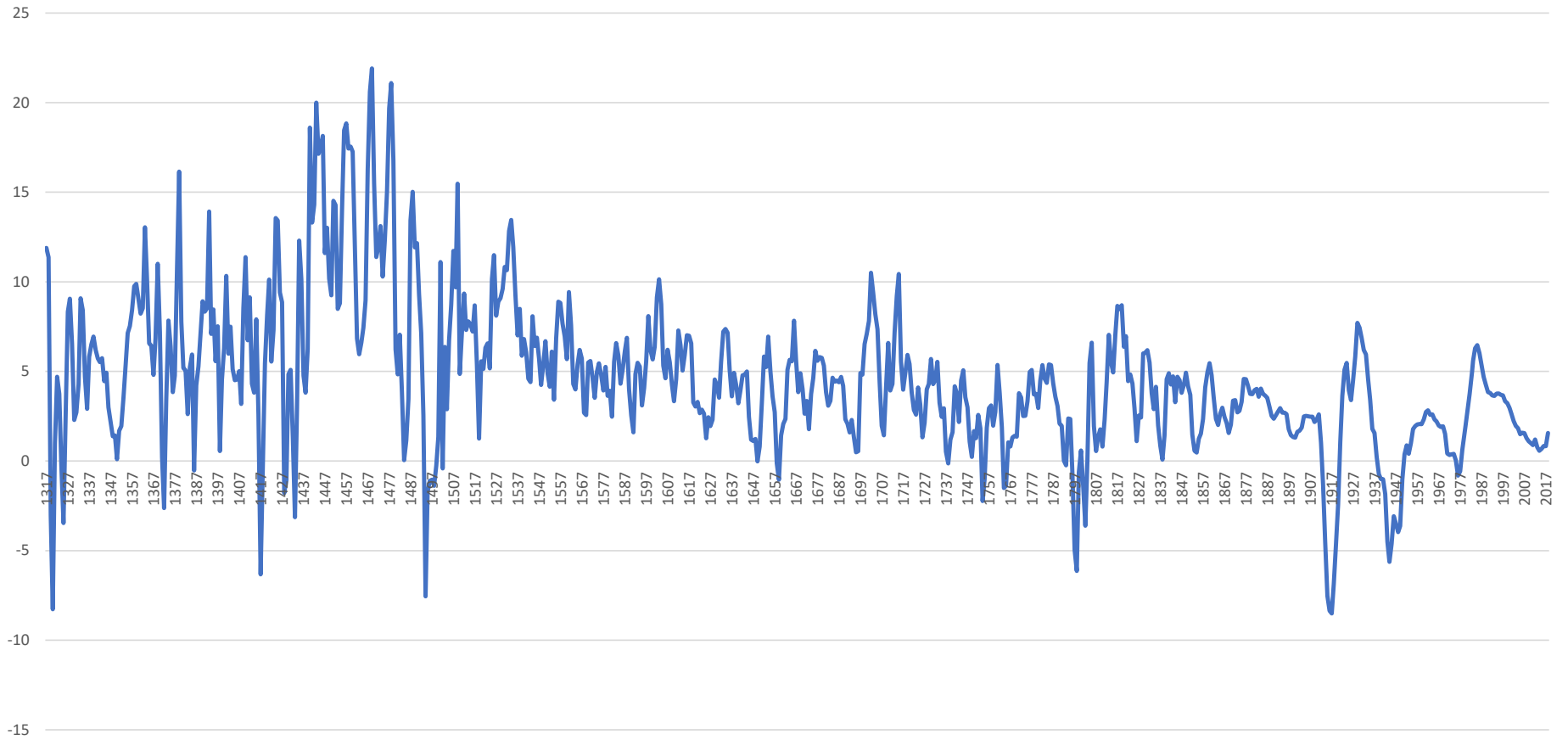
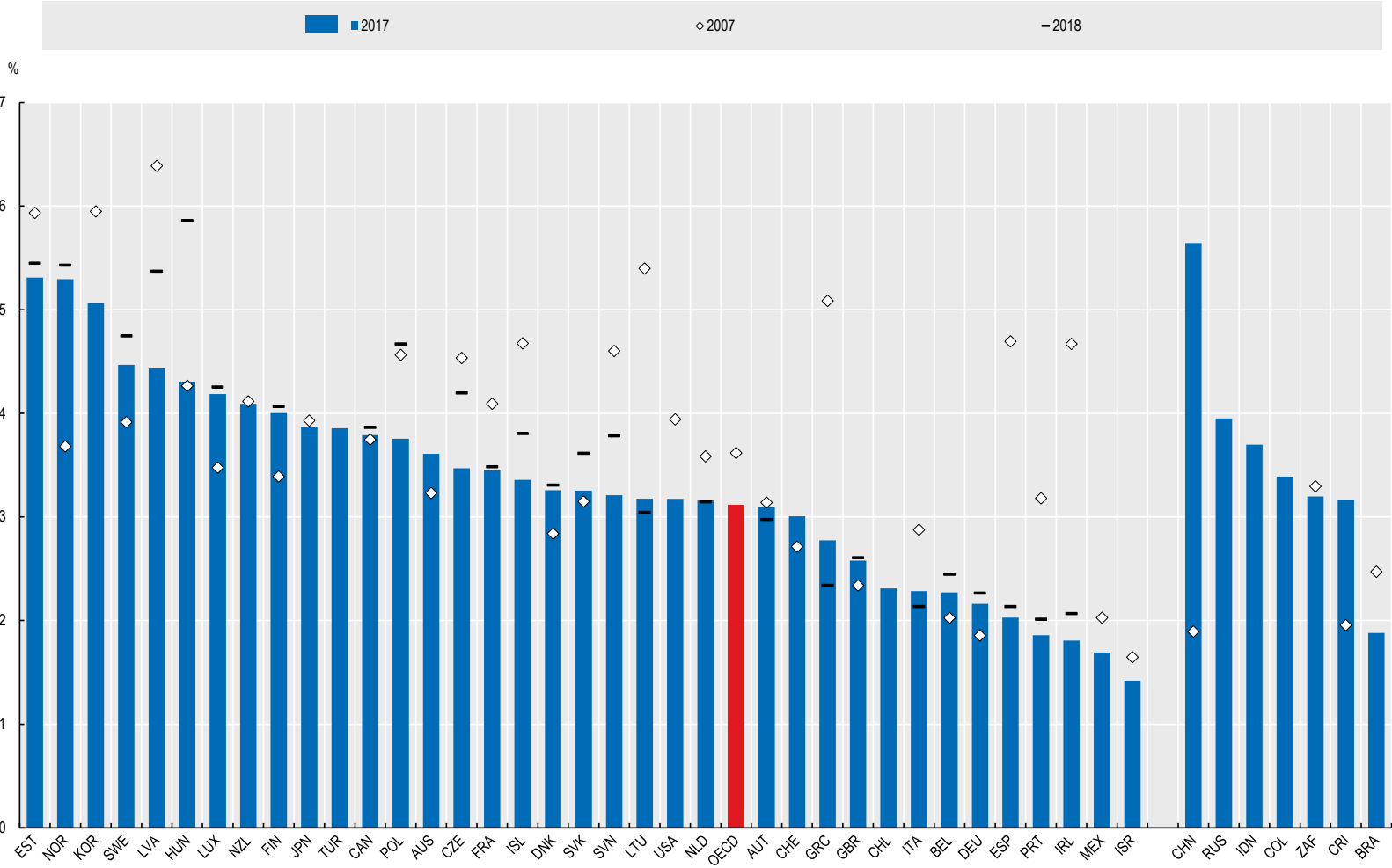


Figure 5: Real Rate on Safe Asset over Eight Centuries



Source: Schmelzing, 2020

Figure 6 Government Investment as a share of GDP in 2007, 2017, and 2018



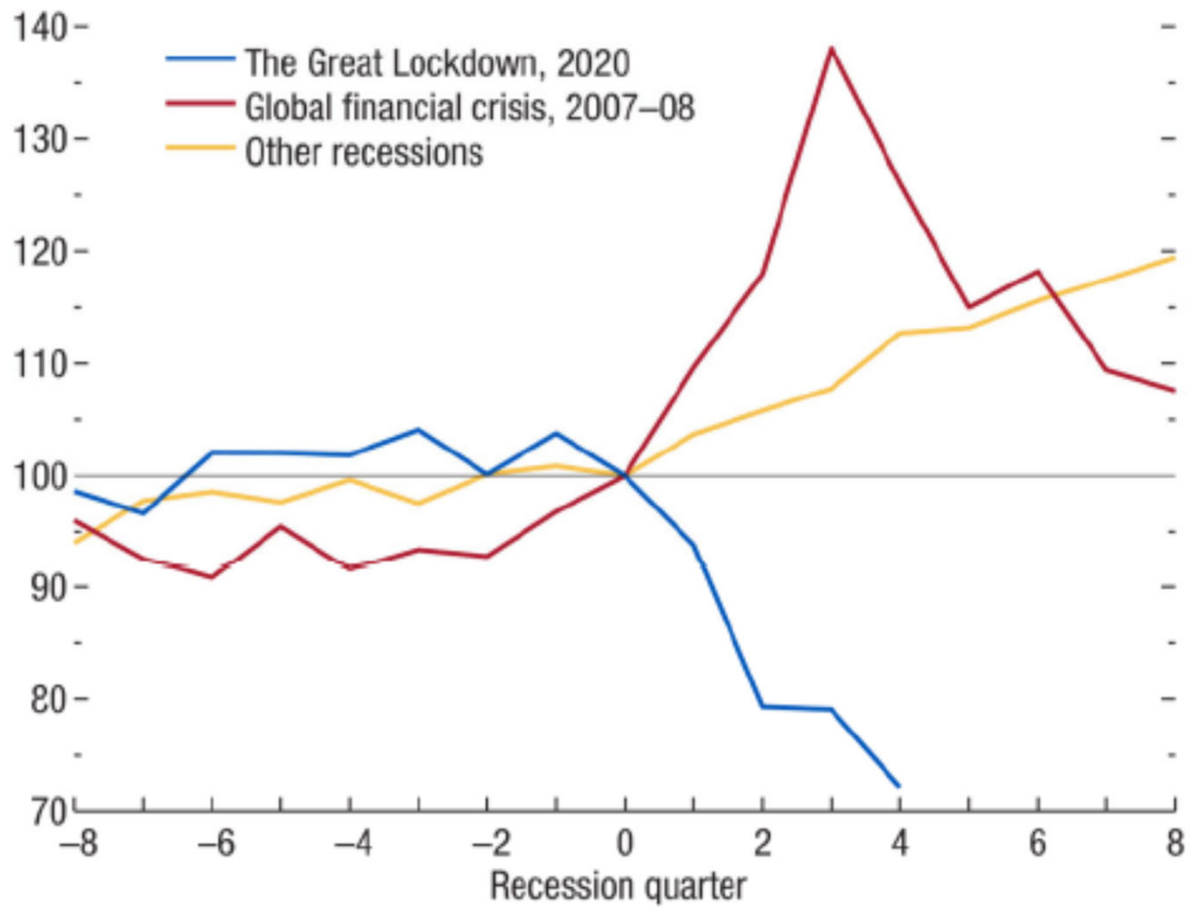
Source: OECD, 2021

Table 1: Negative $r - g$ the norm over two centuries

ADVANCED ECONOMY AVERAGE	61% of all country/years $r-g < 0$
United States	62%
Denmark	45%
Japan	69%
Israel	71%
EMERGING ECONOMY AVERAGE	75% of all country/years $r-g < 0$
China	100%
India	62%
Chile	70%
Russian Federation	84%

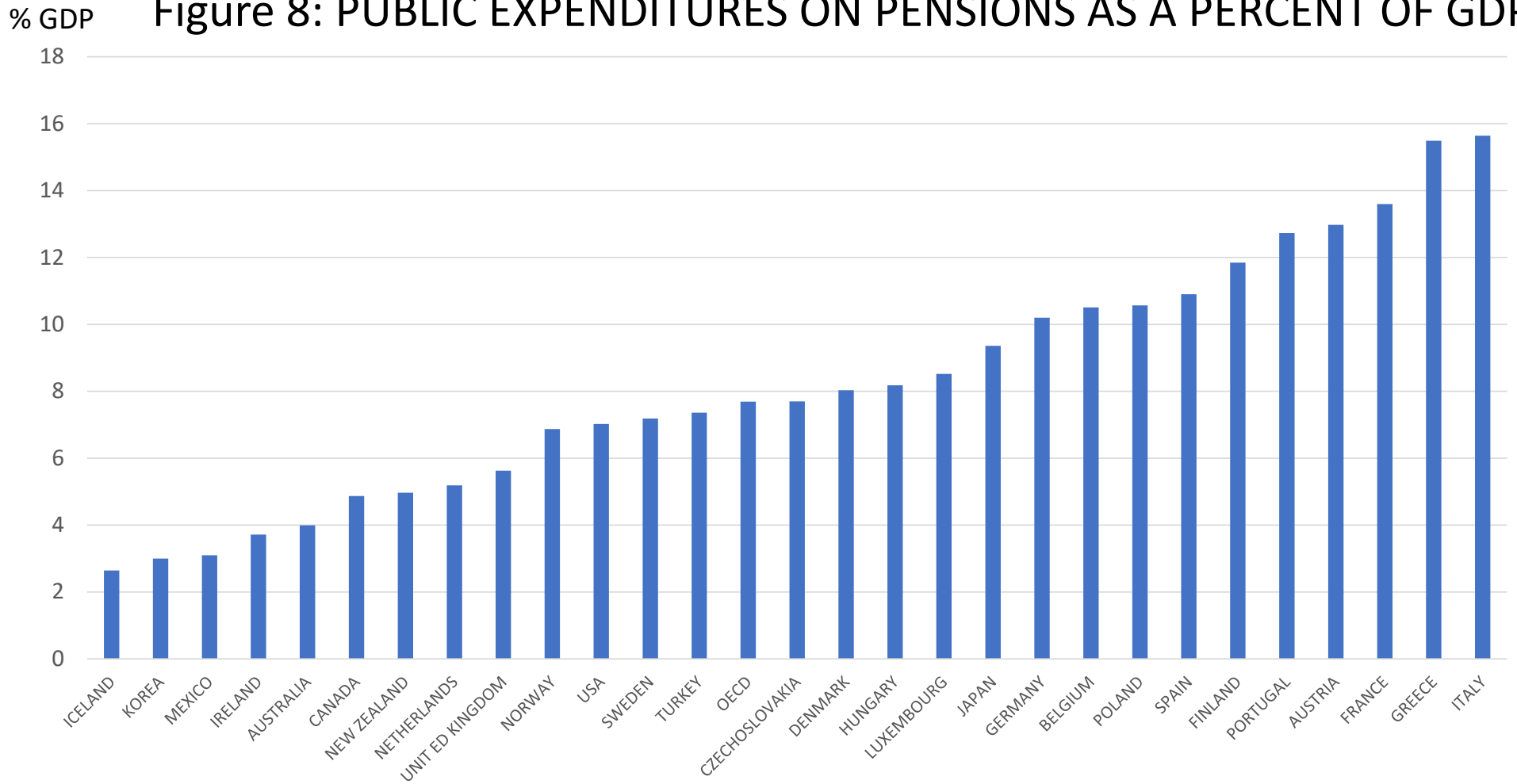
Data source: Mauro and Zhou, IMF (2020)

Figure 7: Bankruptcies Across 13 Advanced Economies, 1990-2020 (last pre-recession quarter = 100)



Source: IMF World Economic Outlook January 2021 update

Figure 8: PUBLIC EXPENDITURES ON PENSIONS AS A PERCENT OF GDP



Source OECD (2018, or most recent year available) <https://data.oecd.org/socialexp/pension-spending.htm>