

The Curious Case of the National Fund

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Abstract

Changing attitudes to government debt influenced a recent High Court judgement on the National Fund, a British charity set up in 1928 with donations left to accumulate until they grew sufficient to repay in full the National Debt of the United Kingdom. Based on a belief that the Fund would never become large enough, in 2018 the Attorney General applied under *cy-près* jurisdiction to allow the charity to repay only part of the National Debt. The argument was that changing attitudes to debt have rendered the charity's aim impracticable, even though it was at the time it was set up.

1 Introduction

What to do about the National Debt is an increasingly important issue in aging economies recovering from the Great Depression and the Covid-19 pandemic. This paper draws on the recent High Court case of a British charity, the National Fund, to provide a unique insight into how attitudes towards government borrowing have changed over time. The National Fund was set up in 1928 by an anonymous donation¹ of £500,000, with activities reported by the Charity Commission (2022) as:

The aim of the charity is to create a fund, that either on its own or combined with other funds is sufficient to discharge the National Debt.

The language of the charity's trust deed is archaic by modern standards, which would replace the wording "discharge" by "repay in full", but it is the requirement to repay in full that makes the charity such a curious case. The market value of the UK National Debt was £7.3 billion in 1928, meaning that the initial donation covered only 0.007% of the existing debt. Only limited progress has been made securing additional funds so the National Fund has never been close to repaying the National Debt in full. Its market value in October 2021 was close to £600 million, about 0.025% of the UK National Debt. The National Fund is one of the UK's largest charities by net assets, even though it has never made any charitable disbursements.

In 2018, the imbalance between the market value of the National Fund and the burgeoning National Debt prompted the Attorney General to apply to the High Court to amend the National Fund's original trust deed so that the funds could be used to repay only part of the National Debt. Such an amendment is permitted

¹The donor was later revealed as Gaspard Farrer, former partner at the now-defunct Barings Bank.

under *cy-près* jurisdiction if the aim of the trust has become impossible, impracticable, or illegal to enforce under its original terms. To be successful, the Attorney General had to demonstrate the impracticability of the market value of the National Fund ever being sufficient to repay the National Debt in full. That is an economic question, so the Attorney General and the National Fund’s trustees commissioned separate expert reports from two macroeconomic professors with knowledge of the UK’s public finances and economic history.² They were charged with assessing whether the National Fund could ever repay the National Debt in full.

A further complication is that the impracticability of the National Fund ever repaying the National Debt in full is not in itself sufficient reason to apply *cy-près* jurisdiction and release the funds to repay part of the debt. The question is whether the trust was practicable even at inception, i.e., was it feasible to believe in 1928 that the National Fund would someday grow large enough to repay the National Debt in full? If not then the initial trust was invalid and the funds accumulated so far should be returned to the heirs of the original donors, an outcome not lost on some descendants who joined the High Court case as interested parties. Whether the National Fund was practicable in 1928 is again an economic question, requiring the consideration of public policy and beliefs prevailing at the time. It was added to the task list for the expert reports.

To claim that the National Fund was practicable at inception but not now is to argue that something fundamental has changed in the economic landscape. For example, it could be that developments in political economy have dramatically shifted attitudes towards government borrowing, or it could be that concerns over feasibility have rendered impossible what was previously thought possible. This paper expands on the arguments in the submissions made to the High Court that ultimately led to the release of the National Fund for partial repayment of the National Debt. They show how new ideas from economic theory have been assimilated, and how changing attitudes to government borrowing were used to justify the outcome. There are positive and normative aspects to the arguments, but we begin by presenting the accounting identities that determine the evolution of the market values of the National Fund and the National Debt.

2 Accounting details

The dynamics of the market value of the National Debt B_t depend on the net nominal holding period return on government debt $r_{t-1,t}$ and the government primary budget deficit DEF_t . As explained by Hall and Sargent (2011), the relevant concept for the net nominal holding period return includes coupon payments and any capital gains or losses due to revaluations in the market prices of government bonds. The primary budget balance is in deficit if government expenditures net-of-interest payments exceed total government revenues. A corresponding identity holds for the evolution of the market value of the National Fund F_t , increasing in the net holding period return on the fund’s portfolio of investments $\tilde{r}_{t-1,t}$ and the flow of additional donations NEW_t . Equation 1 combines the two accounting identities into a law of motion for the ratio of the market value of the National Fund to that of the National Debt.

$$\frac{F_t}{B_t} = \frac{(1 + \tilde{r}_{t-1,t}) F_{t-1} + NEW_t}{(1 + r_{t-1,t}) B_{t-1} + DEF_t} \quad (1)$$

²The author of this paper was one of the professors commissioned to write an expert report.

The market value of the National Fund is sufficient to repay the National Debt in full if the ratio in Equation 1 is greater than or equal to one. Absent any new donations and assuming that the government's primary budget is in balance, what matters is the relative holding period returns on government debt and the Fund's investment portfolio. If a significant proportion of its funds is invested in equities then whether it will ever grow large enough depends on the stability and magnitude of the Mehra and Prescott (1985) equity premium. Should the holding period returns be roughly equal, what is important is the flow of new donations and the extent to which the government's primary budget is in surplus or deficit.

3 Attitudes to the National Debt in 1928

The 1920s were a decade of depression, deflation and steady decline of the UK economy. The post-war boom ended in 1919-20, after which the unemployment rate rose to 17% in 1921 as the economy stagnated. Unemployment fell back to 10% by 1924 but had not fallen further by 1928, remaining instead elevated at a level more than double its pre-war average. Nominal GDP contracted by 30% over the period 1920-24 and had recovered only 5% of its losses by 1928. There was deflation in every year from 1921 to 1928, with falling consumer prices accompanying sterling's return to the Gold Standard in 1925.

Despite poor economic conditions in the 1920s, the government maintained a surplus on its primary budget balance of at least 3% of GDP by ensuring that annual government revenue exceeded annual government expenditure (excluding interest payments on debt). In 1928 the primary surplus was 3.9% of GDP. The cumulative effect of successive primary surpluses enabled the government to reduce the National Debt by £294 million between 1920 and 1928, although it rose as a percentage of GDP because of falling nominal GDP.

The policy of the UK Government towards the National Debt in the 1920s followed the 'English method' of financing war expenditure, first presented to Parliament by Reginald McKenna, Chancellor of the Exchequer, in June 1915. The belief was the costs of the war should as much as possible be borne by the current generation and not be passed on to future generations. The 'English method' was operationalised as the McKenna rule, which committed the government to pay off the National Debt through a series of primary budget surpluses. The McKenna rule required the UK Government to run primary surpluses that were large enough to cover the interest payments on the National Debt and also provide for a sinking fund to retire the National Debt. The contribution made to the sinking fund in 1928 was £65 million, 0.4% of the National Debt at the time.

The policy of the UK Government towards the National Debt was reviewed in the Report of the Committee on National Debt and Taxation (1927), established under Lord Colwyn. The committee supported the policy of paying back the National Debt, proposing an immediate increase in the contribution to the sinking fund to £75 million a year, rising to £100 million a year as soon as possible thereafter. The most compelling theoretical reason for repaying the National Debt was expounded by Pigou (1916). The argument was that interest payments on the National Debt are met from general taxation of all members of society, but only accrue to those who hold government gilts. This means that gilt holders profit at the expense of others, a distributional transfer that distorts the economy and implies different members of society are treated inequitably. The argument was endorsed by many of the founders of modern economics, including David Hume (1752), Adam Smith (1776), David Ricardo (1817) and John Stuart Mill (1848).

In his commentary on the report, Keynes (1927) took a minority position that deviated from the mainstream view at the time. He criticised the Colwyn Committee for a lack of any adequate philosophy for the National Debt and dissented from what he termed the Committee’s “pious ejaculations in favour of Sinking Funds”. Keynes argued against paying off the National Debt rapidly, contending that the burden on taxpayers of repayment in the future is likely to be less than the burden on taxpayers of repayment in the present. Nevertheless, he thought a sinking fund of £40 million a year was justifiable on the grounds of prudent budgeting.

4 Prospects for the National Fund in 1928

The likelihood of the National Fund being sufficient to discharge the National Debt on some future date depends on what is expected to happen to the market values of the National Fund and the National Debt. The National Fund is invested in a diversified portfolio of equities, so its expected future market value is determined by expectations of the future returns to equity. The expected future market value of the National Debt is correspondingly determined by expectations of future government borrowing costs and the extent to which future primary budget balances require the government to either increase or decrease the National Debt.

One way to form a view on what opinions could reasonably have been held in 1928 is to project the behaviour of the UK economy forward from 1928 onwards using only data, statistical techniques and economic understanding available at the time. According to the *Jordà-Schularick-Taylor Macroeconomic Database*³ and the Bank of England’s *A Millennium of Macroeconomic Data*⁴, in the pre-war period 1901-13 the average return to equity in the UK was 4.8%, the average government borrowing cost 0.6% and the average primary budget surplus 0.9% of GDP, whilst nominal GDP grew at an average annual rate of 2.0%. If people believed that the economy would develop every year from 1928 according to these average values then they would have expected the National Fund to have grown sufficiently large to discharge the National Debt in 2021.

It is unrealistic to believe that people expected the UK economy to develop from 1928 onwards according to the average values over the period 1901-13. More reasonable is to assume that historical evidence would be representative of what might happen, i.e., conditions in 1901-13 are indicative of what is likely to happen after 1928 but not a precise prescription. We therefore construct 10,000 projections on the basis that people in 1928 believed the future would resemble but not exactly match the past. To do this, we bootstrap predictions of developments after 1928. For example, one projection could randomly assume that the return to equity, government borrowing cost, primary budget balance and nominal GDP growth in 1929 will be as they were in 1910.⁵ In all projections, we find that the market value of the National Fund eventually rises enough to repay the National Debt in full. In Figure 1 the median date when this occurs is 2045 (earliest 1991, latest 2127).

³Jordà, Schularick and Taylor (2017) and Jordà, Knoll, Kuvshinov, Schularick and Taylor (2019).

⁴Thomas and Dimsdale (2017)

⁵See the Appendix for a detailed description of how the projections were constructed.

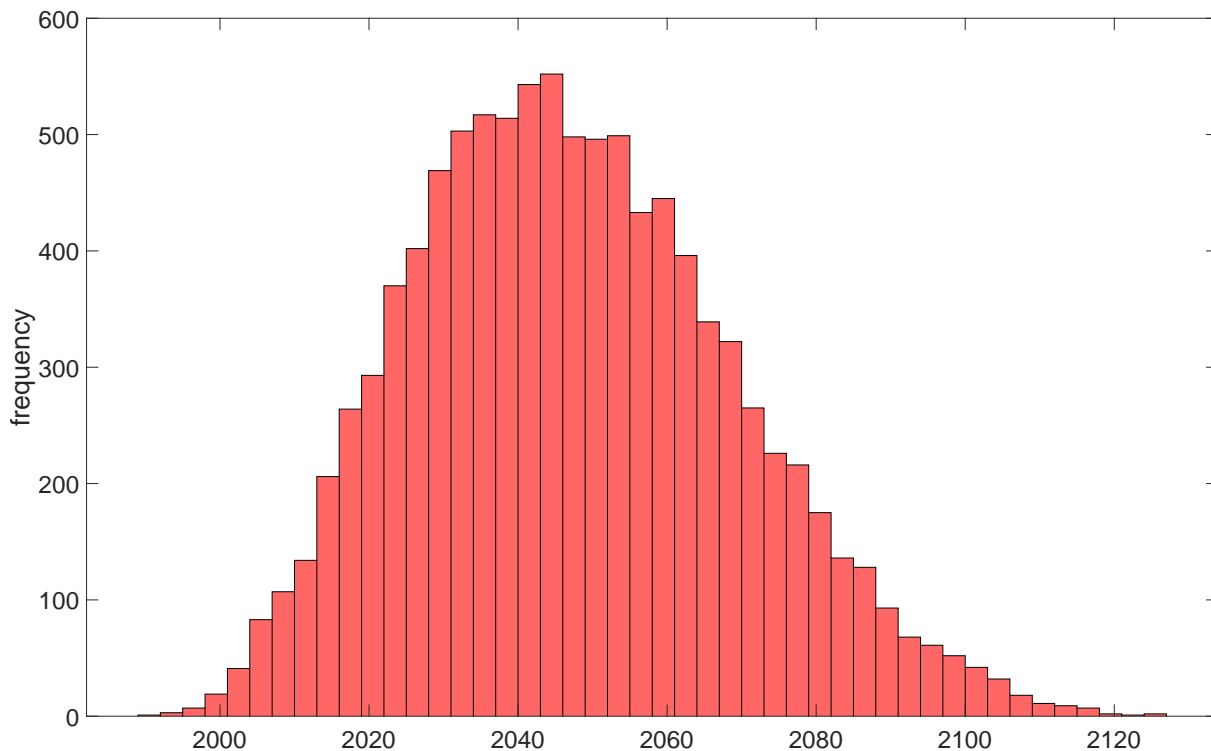


Figure 1: Date at which National Fund sufficient to repay National Debt in full

The National Fund is able to discharge the National Debt at a future date in the projections because, over the period 1901-13, the return on equities is on average higher than the government borrowing costs and the primary budget balance is often in surplus. To check whether the period 1901-13 is special in this respect, we repeat the analysis but assume that people in 1928 believed that different periods in history were more representative of what would happen. In all reasonable cases the National Debt is eventually discharged. For example, when the reference period is extended to 1871-1913, we find that the median date at which the National Debt is paid off in the simulations is 2109 (earliest 1986, latest 2233), primarily due to the higher anticipated average government borrowing costs (2.5%, although the average return to equities was higher too at 6.4%). The National Debt is eventually repaid in all simulations even if we extend the reference period to 1901-1928 to include the large primary deficits of World War I, although this pushes out the range of potential repayment dates still further.

The likelihood that the market value of the National Fund would come to exceed that of the National Debt increases if additional donations are added to the Fund. Indeed, on announcing the setting up of the National Fund on 26 January 1928, the Chancellor of the Exchequer stated that “It is the donor’s hope that others may from time to time be prompted to add to the fund which he has inaugurated, or on similar lines to set up funds of their own, citizens and the City uniting in an attempt to free their country from debt.” In 1928, the total net financial wealth of people in the UK was £16.4 billion, of which £7.2 billion was in equities and £5.7 billion was in gilts of the National Debt, so even a 100-fold increase in donations to bring the initial value of the National Fund to £53.6 million would require contributions that amounted to only 0.3% of UK

net personal wealth in 1928. The impact that additional donations would have can be assessed by returning to the analysis in which people in 1928 believed that the experiences of 1901-13 were indicative of what might happen after 1928. Modelling the increase in donations by increasing the initial market value of the National Fund to £53.6 million, we find the median date at which the National Debt can be repaid in the simulations is brought forward to 2013 (earliest 1986, latest 2042).

To complete the discussion of whether the National Fund could reasonably repay the whole of the National Debt at some future date, it is necessary to consider the effect its existence may have on the UK Government's motivation to budget for primary surpluses in the future. Following the terms of the trust, there is a strategic incentive for the government to generate primary budget surpluses to repay the National Debt, since the more the National Debt is retired through primary surpluses the sooner the National Fund can be 'unlocked' to pay off the remaining National Debt. If people in 1928 believed that the government would increase the rate at which the National Debt was reduced then it would have a dramatic effect on the speed they would expect the National Fund to be able to repay the whole of the National Debt. Returning to the analysis in which the experiences of 1901-13 are seen as indicative of what might happen after 1928, we experiment with simulations in which the average primary surplus from 1928 is projected to rise to 1.9% of GDP, rather than the 0.9% of GDP experienced in the period 1901-13. This is still considerably below the surpluses in excess of 3% on the primary balance that the UK Government maintained in the 1920s. We find that the median date of repayment in such simulations is 1998 (earliest 1970, latest 2080).

It appears eminently reasonable to believe that people in 1928 expected the National Fund to be sufficient to fully discharge the National Debt at some future date. The need to pay down the National Debt was recognised by policymakers in their adherence to the McKenna rule, and had support from the major economic thinkers of the time. In our simulations, we find that the National Debt could be paid off in all reasonable scenarios in which people in 1928 believed that the future resembled the past. The dates at which the National Debt can be discharged is brought forward if people believed there would be additional donations or if they considered that the government would be incentivised to increase the primary budget surplus, but even without these factors there are a significant number of simulations in which the National Fund would be expected to pay off the National Debt in the first half of the 21st century.

5 Attitudes to the National Debt in the present day

Recent growth rates in real UK GDP have been below their long-run average, even before the Coronavirus pandemic. The average year-on-year growth in real GDP from 2001 to 2019 was 1.7%, less than the average growth rate of 2.4% experienced post World War II. Despite this, the unemployment rate of 3.7% in the first quarter of 2022 is the lowest since 1974. The combination of below-average real GDP growth and low unemployment is consistent with UK labour productivity experiencing a fall and only weak subsequent recovery since the 2007/8 Global Financial Crisis. The UK Government's primary budget balance was in deficit in financial year 2021/22, which together with interest payments due on existing debt meant that general government budget balance was in deficit and the government had to increase the National Debt by £141.8 billion (6.0% of GDP). The last time the primary surplus was large enough to cover interest payments and retire some of the National

Debt was in financial year 2001/02.

The increasing rarity of primary budget surpluses suggests that retiring the National Debt has become less of a priority for policymakers. At least some part of the National Debt was paid down in 39 of the 50 years that preceded World War I, but in the 50 years that followed World War II there were only 9 years in which the National Debt was reduced. There has been no net paying off of the National Debt since 2001/02. The change in policymaker priorities coincides with the growth of state education, state health expenditures and social spending which have seen government spending increase from about 15% of GDP before World War I to fluctuate around 40% of GDP after World War II.

Recent developments in economic theory also support a more relaxed approach towards paying down the National Debt. Following Barro (1979), the emphasis has shifted from Pigou's position that debt should be repaid to minimise distributional distortions towards ideas building upon the suggestion of Keynes that repaying the debt should be delayed so distortions from the burden of taxation are minimised. Barro's analysis stresses the benefit of using the National Debt to smooth the burden of taxation over time. Most taxes distort individual decision-making and create a burden that rises more than proportionally with the rate of taxation. The implication is that the government should not make efforts to pay off the National Debt. The intuition is simple. Any attempt to pay off the National Debt means that taxes need to be higher now than they will be in the future, which implies taxes are not constant and tax distortions are not being minimised.

Subsequent work has assessed the robustness of Barro's policy prescription. The consensus is that paying down the National Debt is somewhat beneficial if markets are incomplete (Chari et al. (1991), Aiyagari et al. (2002), Bhandari et al. (2019)) or if there are doubts about the government's commitment to its policies (Debortoli et al. (2017, 2021, 2022)). In practice, the government has moderate scope to insure itself against revenue and expenditure shocks and the most explored policy is for the government to issue gilts linked to inflation (Price (1997)) or gilts with long maturities (Angeletos (2002), Buera and Nicolini (2004), Faraglia et al. (2019a, 2019b)). These policies offer some insurance against revenue and expenditure shocks, so the benefits of repaying the National Debt are likely to be small. The robust policy prescription is for the government to aim at repaying the National Debt at a glacial pace.

A second argument from economic theory that has increasingly tempered the appetite of economists to recommend repaying the National Debt dates back at least to Alexander Hamilton (1871), one of the Founding Fathers of the US. He argued that "A national debt, if it is not excessive, will be to us a national blessing" because bonds issued by the US government can be used as a store of value, as collateral for borrowing, and in general as a lubricant for business activity. The same applies to UK gilts and finds its modern counterpart in concerns that there may be a shortage of safe assets in the economy. In an influential paper, Aiyagari and McGrattan (1998) argue that the optimum quantity of debt from a safe assets perspective is 67% of GDP, rising to 130% if the government is unable to make lump-sum transfers between people in the economy. In a more recent paper, Azzimonti and Yared (2019) argue that the optimal value of public debt from a safe assets perspective is 145% of GDP.

A final development is the recent tendency identified by Ellison and Scott (2020) for the UK Debt Management Office to fill gaps in the maturity profile of the National Debt by issuing gilts with a range of maturities. The

narrative is the DMO is filling out the maturity profile of debt, in part to ensure that there is an active gilt market at a range of maturities, but also to avoid the inefficient ‘gap-filling’ issuance of corporate debt that Greenwood et al. (2010) show firms undertake when they do not have access to gilts of suitable maturities. If the desire for an adequate supply of gilts at different maturities continues then incentives to pay back the National Debt are lessened.

6 Prospects for the National Fund in the present day

Following the same approach as in Section 4, one way to form an opinion on the likelihood of the National Fund ever repaying the National Debt in full is to project the behaviour of the UK economy forward using currently available data, statistical techniques and economic understanding. The UK economy has been very volatile in recent decades, so there is no obvious reference period to use as an historical precedent. Fortunately, numerous public bodies and financial institutions make forecasts of the variables that will determine whether the market value of the National Fund can eventually surpass that of the National Debt. The 30-year return forecasts of the asset management company Schrodgers are typical. They forecast that the average returns to equity will be 6.9% over the period 2022-51 and average government borrowing costs will be 2.1%.

The Office for Budget Responsibility (OBR) is a statutory body that provides independent economic forecasts of the UK economy. Long-term projections for the government’s primary budget balance and the UK National Debt were presented in the OBR’s *Fiscal Risks Sustainability Report* in July 2022, which concluded that “in the long run the pressures of an aging population on spending and the loss of existing motoring taxes in a decarbonising economy leaves public debt on an unsustainable path.” The baseline projection of the OBR is that the UK National Debt will reach 267.0% of GDP in 2071/72, at which point it would still be rising. The UK Government’s primary budget balance steadily deteriorates so that by 2071/72 the deficit would be 11.2% of GDP. Nominal GDP growth is forecast at 4.3% throughout.

Taken together, the forecasts of Schrodgers and the OBR imply that by 2072 the market value of the National Fund would be 0.086% of GDP. This is evidently insufficient to repay the National Debt in full so under these assumptions the likelihood of the National Fund being sufficiently large to discharge the National Debt by 2072 is zero. Forming an opinion on whether the National Fund will *ever* become sufficiently large to pay off the National Debt presents two substantive challenges. The first is that the long-run forecasts produced by Schrodgers and OBR cover only the next 30 and 50 years, so further assumptions are needed about what happens after 2052 and 2072. The second is that ‘ever’ implies an infinite time horizon.

We address the first challenge by assuming that the average return to equity and average government borrowing costs in the Schrodgers forecast are reasonable into the infinite future, but that the OBR forecasts need adjustment. As the OBR qualify when discussing their rising forecasts for the National Debt, “If the projections suggest that the public finances are on an unsustainable path, and that were indeed to prove to be the case in practice, then one might expect a future government to take corrective action at some point.” The OBR forecasts a steady rise in the primary deficit to 11.2% of GDP by the end of 2071/72. We therefore assume that the primary deficit follows the OBR forecast until the end of 2071/72, but stays at that level and

does not continue to rise in the future. This may be an optimistic assumption, given the pressures identified by the OBR and the present-day attitudes of policymakers towards the National Debt.

We address the second challenge in two steps.⁶ Firstly, we assume as before that the future will resemble the past in that the fluctuations experienced in the past are indicative of the fluctuations that are likely to happen in the future. We choose 1993-2007 as the reference period as it is the longest expansion of the UK economy on record and it is before the 2007/8 Global Financial Crisis. Secondly, to circumvent the need to simulate over an infinite time horizon, we ask whether it is reasonable to expect the National Fund to repay the National Debt by the end of the century, then ask in those cases where the National Debt has not been repaid whether the National Fund at the end of the century is in a better position to repay the National Debt than it is now.

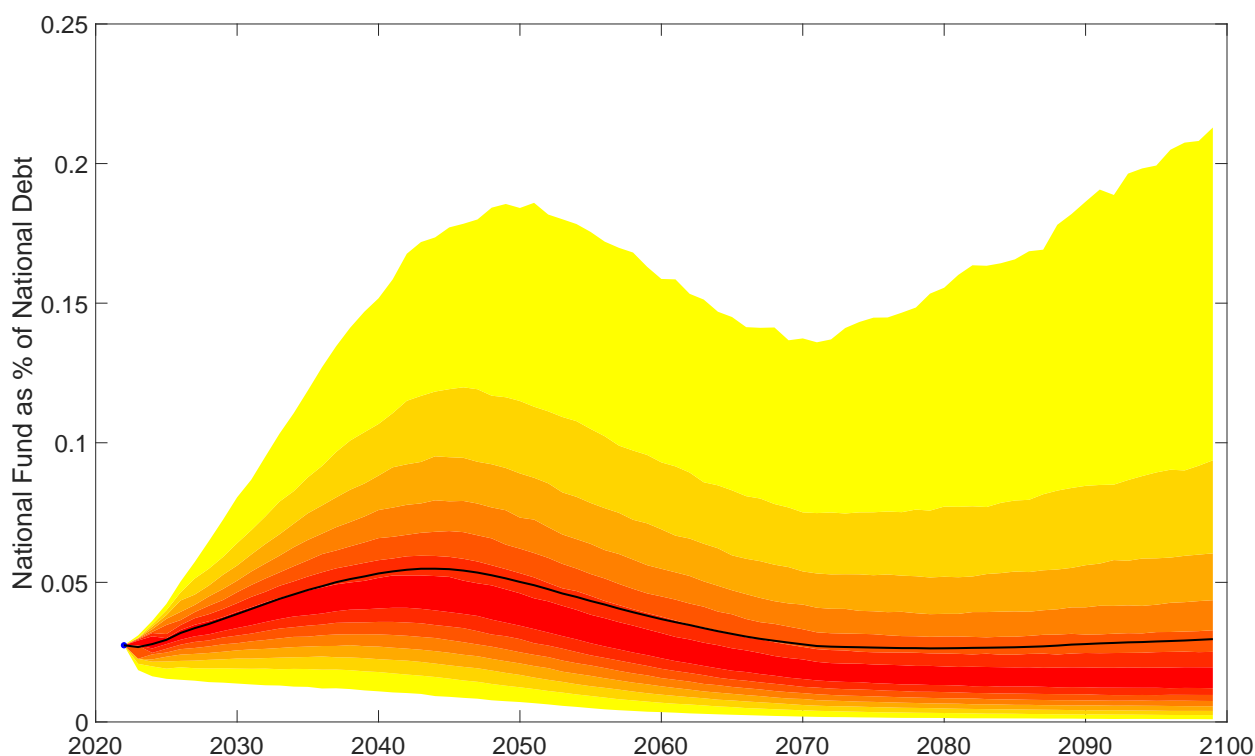


Figure 2: Market value of National Fund as % of National Debt, 95% fanchart

In none of our 10,000 simulations does the National Fund grow sufficiently large to discharge the National Debt by the end of the century. Figure 2 summarises our projections in a 95% fanchart. The prognosis for the National Fund in the upcoming decades is good, as it benefits from the equity premium and the moderate primary deficits forecast by the OBR. However, from the middle of the 21st century primary deficits get larger and make it harder for the National Fund to repay the National Debt in full. The situation stabilises from 2071/72 with our assumption that the primary deficit stops rising - if it were to go on rising then the fanchart would continue to turn downwards.

Of the 10,000 simulations where the National Fund does not grow sufficient to discharge the National Debt by the end of the century, in less than a third does the market value of the National Fund improve relative to

⁶A detailed description of how the projections were constructed is in the Appendix.

the market value of the National Debt by the end of the century. We conclude from our simulation evidence that there is no possibility that the National Fund will be sufficient to repay the National Debt by the end of the century, and the likelihood is that the National Fund will be in a worse position relative to the National Debt at the end of the century than it is now.

The probability at this time of the National Fund being sufficiently large to discharge the National Debt at a future date appears very limited. The National Fund is too small, the National Debt is too large, and the amount by which the returns to equity exceed government borrowing is not enough to counteract the effect of the primary deficits forecast within this timescale. Furthermore, there is currently no significant constituency amongst either policymakers or academics in favour of rapidly paying down the National Debt.

7 Outcome

The case of the National Fund was heard in the High Court in October 2020. In his disposition⁷, Justice Zacaroli concluded:

1. The Deed created a valid charitable trust with the principal purpose of benefitting the nation by accumulating a fund that would in time be applied (either alone or with other funds then available) in discharge of the National Debt and the subsidiary purpose of benefitting the nation by applying part of the National Fund in reduction of the National Debt, if the trustees determine that national exigencies required it;
2. The Deed effected an immediate and unconditional gift to charity (such that there was no condition precedent to the coming into existence of the charitable trust);
3. In the following circumstances:
 - a) the original purposes of the charitable trust cannot be carried out and have ceased to provide a suitable and effective method of using the trust property;
 - b) this constitutes a case of subsequent (and not initial) failure of the charitable purposes; and
 - c) GF intended to give the property out-and-out for the specific charitable purposes identified in the Deed;the court has jurisdiction to make a scheme altering the charitable trust pursuant to its cy-près jurisdiction;
4. The court does not have jurisdiction to make a scheme altering the trust under its administrative jurisdiction;
5. The question whether the court should make a scheme, under its cy-près jurisdiction, for the transfer of the National Fund to the National Debt Commissioners for the reduction of the National Debt or for some other, and if so what, charitable purposes will be deferred to a subsequent hearing.

The economic arguments described in this paper were instrumental in reaching conclusions 1) and 3), the Justice noting that the experts agreed: “(1) At the time of the initial gift to form the National Fund there was (according to ordinary beliefs and knowledge of mankind at the time) a reasonable prospect that it would be practicable to apply the fund representing the initial gift (both on its own and, a fortiori, together with other

⁷H. M. Attorney General v Zedra Fiduciary Services (UK) Limited (2020).

funds that might subsequently be made available) to discharge the National Debt at some future time; (2) As at the date of their supplemental joint report (September 2020) the likelihood of the National Fund ever being sufficiently large to discharge the National Debt at a future date is ‘vanishingly small.’”

A final twist to the tale lies in conclusion 5). Whilst the disposition cleared the way for the National Fund’s trust deed to be amended under cy-près jurisdiction, it remained open what that amendment should be. The subsequent High Court hearing took place in December 2021, where the Attorney General proposed that the National Fund should be applied now to reduce the National Debt whereas the Trustees argued that it should be applied for general charitable purposes. The disposition of Justice Zacaroli favoured the proposal of the Attorney General.⁸ Economics has less to say about this as money is fungible within the government budget, and there is no particular reason to treat the ‘windfall’ of £600 million any differently from the much bigger sums raised through taxation. Whilst economists generally eschew earmarking of funds for specific purposes, one argument is that liquidating the National Fund presents a unique opportunity to further some of society’s priorities. The government can always adjust its budget to retire part of the National Debt, but political economy often prevents using general taxation to pay for large specific projects.

References

- [1] Aiyagari, S. R., Marcet, A, Sargent, T. J. and J. Seppälä (2002) Optimal Taxation without State-Contingent Debt, *Journal of Political Economy* 110(6), 1220-1254
- [2] Aiyagari, S. R. and E. R. McGrattan (1998), The optimum quantity of debt, *Journal of Monetary Economics* 42(3), 447-469
- [3] Angeletos, G.-M. (2002) Fiscal Policy with Noncontingent Debt and the Optimal Maturity Structure, *The Quarterly Journal of Economics* 117(3), 1105-1131
- [4] Azzimonti M. and P. Yared (2019) The optimal public and private provision of safe assets, *Journal of Monetary Economics* 102(C), 126-144
- [5] Barro, R. J. (1979) On the determination of the public debt, *Journal of Political Economy* 87(5), 940-971
- [6] Bhandari, A., Evans, D., Golosov, M. and T. J. Sargent (2017) Fiscal Policy and Debt Management with Incomplete Markets, *The Quarterly Journal of Economics* 132(2), 617-663
- [7] Buera, F. and J. P. Nicolini (2004) Optimal maturity of government debt without state contingent bonds, *Journal of Monetary Economics* 51(3), 531-554
- [8] Chari, V. V., Christiano, L. J. and P. J. Kehoe (1991) Optimal Fiscal and Monetary Policy: Some Recent Results, *Journal of Money, Credit and Banking* 23(3), 519-539
- [9] Charity Commission (2022) Overview of The National Fund, Charity number 1046814
- [10] Colwyn Committee (1927), *Report of the Committee on National Debt and Taxation*

⁸H. M. Attorney General v Zedra Fiduciary Services (UK) Limited (2022).

- [11] Debortoli, D., Nunes, R. and P. Yared (2017) Optimal Time-Consistent Government Debt Maturity, *The Quarterly Journal of Economics* 132(1), 55–102
- [12] Debortoli, D., Nunes, R. and P. Yared (2021) Optimal Fiscal Policy without Commitment: Revisiting Lucas-Stokey, *Journal of Political Economy* 129(5), 1640–665
- [13] Debortoli, D., Nunes, R. and P. Yared (2022) The Commitment Benefit of Consols in Government Debt Management, *American Economic Review: Insights* 4(2), 255-270
- [14] Ellison, M. and A. J. Scott (2020) Managing the UK National Debt 1694–2018, *American Economic Journal: Macroeconomics* 12(3)
- [15] Faraglia, E., Marcet, A. and A. Scott (2019a) In search of a theory of debt management, *Journal of Monetary Economic* 57(7), 821-836
- [16] Faraglia, E., Marcet, A., Oikonomou, R. and A. Scott (2019b) Government Debt Management: The Long and the Short of It, *Review of Economic Studies* 86(6), 2554-2604
- [17] Greenwood, R., Hanson, S. and J. C. Stein (2010) A Gap-Filling Theory of Corporate Debt Maturity Choice, *Journal of Finance* LXV(3), 993-1028.
- [18] H. M. Attorney General v Zedra Fiduciary Services (UK) Limited, Diana Iona Bruce and John Damian Nicholas Stidworthy [2020] EWHC 2988 (Ch), <https://www.bailii.org/ew/cases/EWHC/Ch/2020/2988.pdf>
- [19] H. M. Attorney General v Zedra Fiduciary Services (UK) Limited [2022] EWHC 102 (Ch), <https://www.bailii.org/ew/cases/EWHC/Ch/2022/102.pdf>
- [20] Hall, G. J. and T. J. Sargent (2011) Interest Rate Risk and Other Determinants of Post-WWII US Government Debt/GDP Dynamics, *American Economic Journal: Macroeconomics* 3(3), 192-214
- [21] Hamilton, A. (1781) Letter to Robert Morris, in Sylla, R. and D. J. Cowen (2018) *Alexander Hamilton on Finance, Credit, and Debt*, Columbia University Press, New York
- [22] Hume, D. (1752) Of Public Credit, Essay IX in D. Hume (1777) *Essays, Moral, Political, and Literary, Part 2*, Alexander Kincaid
- [23] Jordà, Ò, Knoll, K., Kuvshinov, D., Schularick, M. and A. M. Taylor (2019) The Rate of Return on Everything, 1870–2015, *The Quarterly Journal of Economics*, 134(3), 1225-1298
- [24] Jordà, Ò, Schularick, M. and A. M. Taylor (2017) Macrofinancial History and the New Business Cycle Facts, in Eichenbaum, M. and J. A. Parker (eds.) *NBER Macroeconomics Annual 2016*
- [25] Keynes, J. M. (1927) The Colwyn Report on National Debt and Taxation, *The Economic Journal* 37(146), 198-212
- [26] Mehra, R. and E. C. Prescott (1985) The equity premium: A puzzle, *Journal of Monetary Economics* 15(2), 145-161

- [27] Mill, J. S. (1848) Of a National Debt, Chapter VII of Book V in *Principles of Political Economy*, John W. Parker, London
- [28] Office for Budget Responsibility (2022), *Fiscal Risks and Sustainability Report*, July
- [29] Pigou, A. C. (1916) *The Economy and Finance of the War*, J.M. Dent, London
- [30] Price, R. T. (1997), The Rationale and Design of Inflation-Indexed Bonds, IMF Working Paper
- [31] Ricardo, D. (1817) *On the Principles of Political Economy and Taxation*, John Murray, London
- [32] Schrodgers (2022) *30-year return forecasts (2022-51): Part 2*, January
- [33] Smith, A. (1776) Of Public Debts, Chapter III of Book V in *An Inquiry into the Nature and Causes of the Wealth of Nations*, W. Strahan and T. Cadell, London
- [34] Thomas, R. and N. Dimsdale (2017) A Millennium of UK Data, Bank of England OBRA dataset

A Construction of projections

The nominal values of the National Debt B_t and National Fund F_t satisfy the accounting identities:

$$B_t = (1 + r_{t-1,t}) B_{t-1} + DEF_t \quad (2)$$

$$F_t = (1 + \tilde{r}_{t-1,t}) F_{t-1} + NEW_t \quad (3)$$

where $r_{t-1,t}$ is the nominal holding period return on government debt and $\tilde{r}_{t-1,t}$ is the net nominal holding period return on the fund's portfolio of investments. DEF_t is the nominal primary budget deficit and NEW_t is the flow of additional nominal donations to the National Fund. Given initial values (B_0, F_0) and sequences for $\{r_{t-1,t}, \tilde{r}_{t-1,t}\}$ and $\{DEF_t, NEW_t\}$, equations (2) and (3) define the dynamics of the National Debt and National Fund $\{B_t, F_t\}$. The nominal holding period returns $r_{t-1,t}$ and $\tilde{r}_{t-1,t}$ are stationary but the nominal primary budget deficit trends with nominal GDP, so it is easier to work with the debt-to-gdp ratio $b_t = B_t/GDP_t$ and the fund-to-gdp ratio $f_t = F_t/GDP_t$, which evolve as:

$$b_t = \left(\frac{1 + r_{t-1,t}}{1 + \Delta GDP_t} \right) b_{t-1} + \frac{DEF_t}{GDP_t} \quad (4)$$

$$f_t = \left(\frac{1 + \tilde{r}_{t-1,t}}{1 + \Delta GDP_t} \right) f_{t-1} + \frac{NEW_t}{GDP_t} \quad (5)$$

A.1 Simulations starting from 1928

The initial values of $b_0 = 1.76$ and $f_0 = 0.000129$ are taken from the *Jordà-Schularick-Taylor Macroeconomic Database* (JST) and the £536,381 market value of the National Fund in 1928. JST is also the source for data on GDP_t and its growth rate, and $\{r_{t-1,t}, \tilde{r}_{t-1,t}\}$ are associated with the UK values for ‘Government bond total return, nominal’ and ‘Equity total return, nominal’. Data on the nominal primary budget deficit DEF_t is from the Bank of England’s *A Millennium of Macroeconomic Data*, being the negative of ‘Central government primary surplus (NMFJ+NMFY)’. The data for 1901-1913 are presented in Table 1.

Year	$r_{t-1,t}$	$\tilde{r}_{t-1,t}$	ΔGDP_t	$\frac{DEF_t}{GDP_t}$
1901	-1.60	4.91	0.38	2.44
1902	1.95	5.89	0.71	2.12
1903	-2.76	1.67	-1.33	0.12
1904	4.15	11.12	-0.00	-0.20
1905	3.58	10.94	3.65	-0.40
1906	-1.08	9.63	4.28	-0.60
1907	0.01	-0.16	3.97	-0.47
1908	3.59	4.57	-4.85	0.42
1909	1.82	11.06	2.04	-1.42
1910	-1.31	1.48	4.28	-1.02
1911	0.23	1.60	4.08	-0.63
1912	0.75	3.44	4.43	-0.51
1913	-1.32	-3.80	4.05	-1.15

Table 1: UK data 1901-1913

The 10,000 projections all start from (b_0, f_0) , the debt-to-gdp and fund-to-gdp ratios in 1928. Then, each projection proceeds by randomly drawing returns, GDP growth and the primary budget deficit to GDP ratio for 1929 from one of the rows in Table 1. For example, it could be that conditions in 1929 will be the same as they were in 1910, i.e., the nominal holding period return on government debt would be -1.31%, the net nominal holding period return on the fund’s portfolio of investments would be 1.48%, GDP growth would be 4.28% and the primary budget deficit would be -1.02% of GDP. Given these inputs and assuming no new donations to the National Fund, the debt-to-gdp and fund-to-gdp in 1929 are given by equations (4) and (5). A fresh draw is then made to determine conditions in 1930, with the simulation continuing recursively until conditions are met for the National Fund to repay the National Debt in full, at which point it ends.

A.2 Simulations starting from the present day

The initial values of the debt-to-gdp ratio $b_0 = 0.956$ and fund-to-gdp ratio $f_0 = 0.000129$ are taken from the OBR’s *Fiscal Risks Sustainability Report* of July 2022 and the £600 million market value of the National Fund in October 2021. JST is again the source for data on GDP growth and holding period returns $\{r_{t-1,t}, \tilde{r}_{t-1,t}\}$, shown for 1993-2007 in Table 2.

Year	$r_{t-1,t}$	$\tilde{r}_{t-1,t}$	ΔGDP_t
1993	22.79	27.55	5.28
1994	-10.41	-5.95	5.29
1995	17.56	23.02	5.07
1996	7.76	15.81	6.79
1997	16.76	23.57	5.49
1998	21.17	13.67	5.05
1999	-4.15	23.80	4.25
2000	9.79	-5.94	6.20
2001	2.95	-13.22	3.84
2002	10.21	-22.26	5.07
2003	2.11	20.18	6.16
2004	6.64	12.60	5.46
2005	8.50	21.64	6.00
2006	-0.50	16.43	5.73
2007	6.21	5.08	5.52

Table 2: UK data 1993-2007

As explained in Section 6, the National Debt to GDP ratio in each projection is assumed to follow the OBR forecast until 2072, when it reaches 256.2%. Thereafter, the assumption is that the primary deficit remains at 11.2% of GDP and that GDP growth and holding period returns are randomly drawn from their values in the years 1993 to 2007. To ensure consistency with the long-term estimates of Schrodgers, the means of returns and GDP growth in the projections are adjusted to be 2.1%, 6.9% and 4.3%, respectively. The underlying assumption is that conditions after 2072 are consistent with the mean forecast of Schrodgers and the volatility experienced in 1993-2007. Figure 3 plots sample simulations for the evolution of the debt-to-gdp ratio, showing that each follows a deterministic path until the end of the OBR forecast when it becomes stochastic.

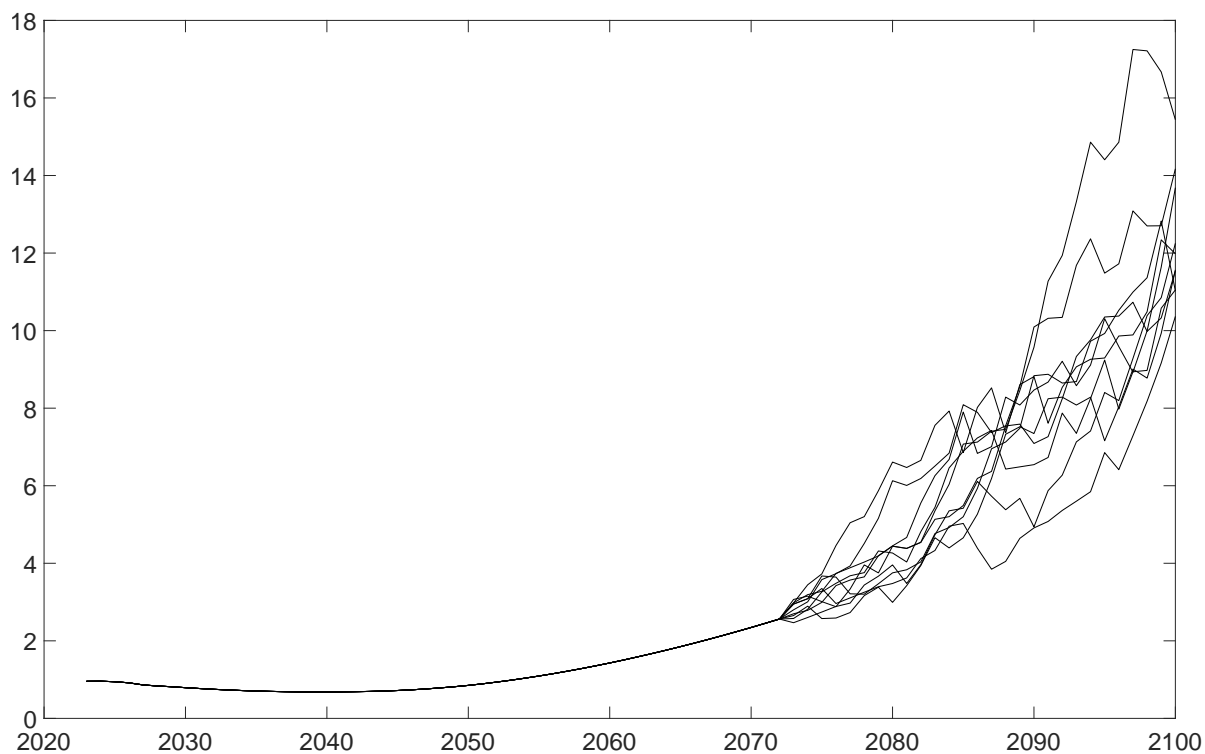


Figure 3: Projections for National Debt as % of GDP

The projections for the evolution of the National Fund are constructed as before, by assuming there will be no new donations and that future equity returns are randomly drawn from those experienced in the period 1993-2007. The mean return in simulations is adjusted to match the 6.9% long-term estimate of Schroders.