

# The Treasury

## Budget 2022 Information Release

August 2022

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## Treasury Report: Advice on Fiscal Rules

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<b>Date:</b>	10 February 2022	<b>Report No:</b>	T2022/37
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### Action Sought

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	Action sought	Deadline
<b>Minister of Finance</b> Hon Grant Robertson	<b>Consider</b> the recommendations in this report and discuss with officials at the Finance Priorities Meeting on <b>Thursday 17 February</b> .	17 February 2022

### Contact for Telephone Discussion (if required)

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Name	Position	Telephone	1st Contact
Isabelle Hermes	Senior Analyst, Macroeconomic and Fiscal Policy	[39]	N/A (mob) ✓
Katy Simpson	Team Leader, Macroeconomic and Fiscal Policy		N/A (mob)

### Minister's Office actions (if required)

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**Return** the signed report to the Treasury.

Note any feedback on the quality of the report

**Enclosure:** No

# Treasury Report: Advice on Fiscal Rules

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## Executive Summary

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As New Zealand is moving past the immediate COVID-response phase and towards recovery, it is now the appropriate time to recalibrate the Government's fiscal rules. With significant and rising cost pressures, we consider that fiscal rules should place more emphasis on managing costs on the operating side. Similarly, we have a significant infrastructure 'gap' and are expecting large investment decisions in the near to medium term, which will require more fiscal space.

This report provides our recommendations for new fiscal rules to be introduced at Budget 2022. The advice focuses on the main fiscal rules for driving your fiscal strategy and supporting fiscal sustainability over the medium to long term. Advice on the most appropriate fiscal strategy for the current economic and fiscal context will be provided to you in early March, which will draw on a wider range of indicators as each indicator has limitations. We will also provide follow-up advice in mid-March on your statutory obligations under the Public Finance Act 1989 (PFA) including proposals for translating the fiscal rules into short-term intentions and long-term objectives.

We recommend focusing on the operating balance before gains and losses (OBEGAL) position as the main fiscal rule. This has a number of attractive features: it supports intergenerational equity and is likely to result in a fiscally sustainable position as debt would not be used to fund current consumption but could be used to fund investments that provide assets for future generations.

We have considered the option of debt-funding operating expenses which have similarities with capital investments, for example payments for local government owned assets, or spending which creates human capital (such as education spending). We have reservations about excluding such operating expenses from the rule, as this can be gamed and could therefore create fiscal sustainability problems. If necessary, we would prefer to acknowledge that, at times, the fiscal rule would not be met due to the need for particularly large investments that have time-limited impacts on the operating balance.

We recommend targeting a level of OBEGAL such that, over time, operating expenses do not add to net debt as a share of GDP. Given that we anticipate economic shocks to occur in the future, we recommend the Government aim to run small surpluses so that deficits can be run following shocks. To avoid debt ratcheting up after economic shocks we recommend running surpluses of at least 0.5 percent of GDP. The PFA provides an escape clause that can be used to run deficits in response to shocks if circumstances require a departure from the principles of responsible fiscal management.

We recommend that the OBEGAL rule is complemented with a ceiling on net debt. The debt ceiling would be comparatively higher than previous point targets for net debt, and would therefore allow the Government to use the available fiscal space to borrow for long-term investments where the cost can be spread across generations – but not to finance current spending. The ceiling would not be a point target to aim for, but rather the level that the Government should aim to keep debt below in order to allow a buffer for responding to larger shocks while maintaining debt sustainability.

We consider the current level of debt to be prudent and that ‘prudent’ debt is not a specific figure. It will depend on the economic context as well as the Government’s risk tolerance and willingness to run large surpluses if needed.

We suggest a debt ceiling of 50% of GDP based on the current net debt measure. We have made a series of quite conservative assumptions about the future state of the world, in particular the interest rate environment, future GDP growth rates and possible economic shocks, to determine a recommended level for a debt ceiling. Our assumptions are conservative given the risks that New Zealand faces as a small country. However, depending how you weigh up these different judgments, you may want to set the debt ceiling at a different level. This report will provide a framework to help you make a judgment around what level of debt you consider appropriate.

Our analysis in this report has used the current net debt measure, but there are a range of different indicators that could be used for the net debt ceiling – and each of these indicators has trade-offs. For announcement at Budget 2022, we recommend adopting the ‘new’ net debt measure (TR2021/2416 refers) which includes Crown entity borrowings and advances as well as the New Zealand Super Fund (NZSF). Including the NZSF improves comparability with countries such as Australia and the UK, as well as the IMF’s general government net debt measure. It is also a more appropriate indicator of long-term sustainability. However, there are a number of risks associated with including the NZSF, such as increased volatility of the indicator which makes it less suitable as a binding target. Including the NZSF lowers net debt by around 20 percentage points of GDP as its sizable assets are netted off against debt. If the measure including the NZSF is used as a target, we recommend the ceiling be 30% of GDP.

The recommendation of adopting an operating balance target alongside a debt ceiling is well aligned with international best practice and guidelines recommended by the IMF and OECD. The framework supports fiscal sustainability and macroeconomic stabilisation, while enabling governments to make fiscal strategy choices based on the circumstances of the day. Known expenditure pressures and delivery constraints will make for difficult fiscal strategy choices over the coming years.

Overall, moving to an approach that places less weight on a binding net debt target and more focus on the operating position provides more flexibility to undertake long-term investments, but there would be less of a top-down constraint on capital spending. In principle, we consider that bottom-up tools are better suited for assessing investment decisions and prioritisation. This requires the use of high-quality business cases and rigorous value-for-money assessments as part of the annual Budget process and other spending decisions. We recommend further strengthening these systems and setting expectations that tools are used by agencies to ensure that additional capital spending will deliver value-for-money.

We have considered a range of other options for fiscal rules, such as net worth and debt servicing costs, but recommend against adopting these as the main fiscal rules. Debt servicing costs are very sensitive to movements in interest rates, which tend to be unpredictable and outside the control of government. Net worth is influenced by volatile revaluations, such as those driven by asset price inflation, and considerable judgment is needed when valuing certain assets such as roads. However, you will still want to consider and report on these indicators when setting your fiscal strategy. You will also need to set long-term objectives and short-term intentions for net worth, which we will provide advice on in March.

## Recommended Action

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We recommend that you:

- a **agree** to adopt an OBEGAL target as the main fiscal rule to support short-term decision making

*Agree/disagree*

- b **agree** to aim for small OBEGAL surpluses, so as to allow deficits in response to economic shocks

*Agree/disagree*

- c **agree** to complement the OBEGAL target with a net debt ceiling

*Agree/disagree*

- d **note** that we will be meeting with you at the Finance Priorities Meeting on Thursday 17 February to discuss this report. We are particularly interested in your feedback on:

- the operating balance rule: i.e. targeting an OBEGAL surplus of no less than 0.5% of GDP in each year.
- the net debt ceiling: we suggest setting a net debt ceiling of 50% of GDP (current net debt measure), or 30% of GDP (new net debt measure including the NZSF). However, which level you chose will depend on a range of assumptions and your risk tolerance.
- the new net debt measure: our analysis has used the current net debt metric, but the fiscal rules announced at Budget 2022 would use the new net debt metric. We would like your feedback on which version of the new net debt metric you would like to adopt (i.e. including or excluding the NZSF).
- strengthening the wider fiscal framework: we recommend a higher debt ceiling be accompanied by a stronger focus on value-for-money tools to ensure robust fiscal management and prioritisation of capital spending, and

- e **note** that we have annexed further information on the calibration of the operating balance rule (**Annex 1**), further analysis on the debt ceiling (**Annex 2**), a comparison with the 2019 Treasury analysis (**Annex 3**) and an international comparison of the net debt methods and levels (**Annex 4**).

Katy Simpson  
**Team Leader, Macroeconomic and Fiscal Policy**

Hon Grant Robertson  
**Minister of Finance**

## Treasury Report: Advice on Fiscal Rules

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### Purpose of Report

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1. This report sets out our recommendations for new fiscal rules to be introduced at Budget 2022. After receiving feedback from you and your office, we will then provide further advice to finalise the new fiscal rules, as well as the long-term objectives and short-term intentions, for announcement in the Fiscal Strategy Report at Budget 2022.

### Background

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2. As New Zealand is moving past the immediate COVID-response phase and towards recovery, it is now the right time to recalibrate the Government's fiscal rules. Governments have typically set specific net debt targets coupled with an OBEGAL target. In response to COVID-19, the Government introduced fiscal rules that allowed a more flexible response. As uncertainty from COVID-19 is reducing, we consider that more definite fiscal rules should be adopted which reflect the current economic context as well as broader fiscal considerations in order to support long-term fiscal sustainability.
3. There are significant cost pressures on the operating side that will need to be managed, such as those outlined in the Long-Term Fiscal Statement, and there is a substantial infrastructure gap which has increased over time. This means that more focus is needed on managing operating costs, as well as ensuring there is sufficient fiscal space on the capital side to achieve the right balance between prudent investment and prudent debt.
4. In the Budget Policy Statement 2022, you signalled your intention to set new fiscal rules in the Fiscal Strategy Report for 2022. This note focusses on the main fiscal rules for driving your fiscal strategy and supporting fiscal sustainability. We consider these fiscal rules to be in line with the principles of responsible fiscal management under the PFA. You will receive follow-up advice on your statutory obligations under the PFA including proposals for translating these rules into short-term intentions and long-term objectives in mid-March 2022.
5. We note that this advice seeks to provide a long-term and enduring framework for setting fiscal rules. You will receive separate advice on the appropriate fiscal strategy for the current economic and fiscal context as part of the 'roadcheck' fiscal strategy advice on 3 March 2022.

### Objectives of fiscal rules

6. Fiscal rules can help manage the multiple objectives for fiscal policy that underlie the principles of responsible fiscal management in the PFA. These objectives include:
  - a) Sustainability – ensuring that the government's revenue and expenses are balanced over time and debt is maintained at prudent levels without the need for significant policy changes

- b) Stability – fiscal policy supports monetary policy and macroeconomic stability by allowing the automatic fiscal stabilisers to operate and avoiding pro-cyclical changes in discretionary fiscal policy, and
  - c) Structure – ensuring the level and composition of spending and revenue supports the Government’s overall policy objectives.
- 7. We think that fiscal rules should primarily be set to ensure long-term fiscal sustainability, whilst the specific rules should allow for flexibility in the short term to respond to shocks and changing circumstances (the stability objective). The structure of taxation and spending are important for wellbeing but can be largely separated from judgements about fiscal rules.
- 8. Fiscal rules should also be readily understandable by policymakers and the public, and ultimately support government accountability. This means that fiscal rules need to support clear and credible communication so that the framework is well understood and attracts broad support.
- 9. We consider that fiscal rules have a more limited role to play in driving prioritisation or determining value for money within yearly spending decisions: the optimal level of expenditure in any one Budget will be determined by a range of factors and will vary over time. Attempting to set a fiscal rule to place a constraint on one, or several, Budgets risks generating sub-optimal policy if the underlying circumstances change. A key example of this is capital investment: if fiscal rules are too binding on investment, updates to forecasts can drive the level of investment, rather than assessments of value for money and the impact on living standards. It is therefore important that fiscal rules are complemented by value-for-money tools.

## Analysis

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### Operating balance

***We recommend focusing on the operating balance as the main fiscal rule.***

- 10. An operating balance target explicitly focuses on the flows of expenditure and revenue, on the assumption that if the flows are well maintained, then the stock of debt will also be managed sustainably. Focusing on the operating balance has a number of attractive features:
  - a) **Fiscal sustainability:** Maintaining a balanced operating position over time creates a sustainable fiscal position, as operating expenses are paid for by operating revenue and debt is used only to fund net investment. Depreciation and write-downs would be paid for out of operating revenue. As net investment grows the capital stock, any increase in debt would be matched by an increase in the stock of public capital.
  - b) **Intergenerational equity:** When operating expenses are paid for by operating revenue, the current generation pays for its own consumption, which supports intergenerational equity. The Government could still borrow for long-term investments where the cost can be spread across generations, and future generations would receive both an asset and a liability.



- c) **Flexibility to use fiscal space to invest:** A focus on the operating balance may provide more flexibility for governments to use fiscal space<sup>1</sup> for capital investments. However, whether there is fiscal space will depend on the stock of debt. At present, we consider that the level of net debt is prudent and there is substantial fiscal space for long-term investments that offer value for money and deliver on wellbeing outcomes.
  - d) **Long-term cost pressures:** Most of our long-term cost pressures such as health spending, an ageing population and climate change are expected to come through the operating budget. These cost drivers are described in detail in the Long-Term Fiscal Statement. Maintaining fiscal discipline through an operating target is therefore important for maintaining fiscal sustainability.
11. Overall, this approach would move New Zealand's fiscal strategy more explicitly towards a 'golden rule', where the Government more explicitly funds increased levels of investment from increases in debt, but does not borrow to fund current consumption.

### Design choices

12. **We recommend maintaining the focus on OBEGAL for the balance measure.** OBEGAL has a broad institutional coverage, is accrual based, excludes volatile market movements (such as revaluations) and is already familiar. Although it does not provide for international comparability or stock flow consistency (i.e. OBEGAL is not equal to the change in our debt metrics), we do not consider that these are strong enough reasons to move away from the use of OBEGAL. OBEGAL is the main long-term driver of changes in net debt and is the driver under the most direct control of the government of the day.<sup>2</sup>
13. There is a choice about how we design any OBEGAL target to allow flexibility in the face of shocks. **We recommend that the Government aim to run small surpluses, acknowledging that it will be appropriate to run deficits following a shock.** We would aim to calibrate the operating rule such that the surpluses would be expected to offset deficits over time.
14. Alternatively, there is an option to set an OBEGAL rule that would seek to balance the operating budget across a cycle without the explicit requirement to run small operating surpluses by targeting a cyclically-adjusted balance.<sup>3</sup> If we could accurately measure the output gap and had good forecasts of future shocks, this method would be superior. However, given the difficulty of measuring and communicating a cyclically-adjusted target, we think it is likely to be more complex and at greater risk of deficit bias. Cyclical assessments will still be part of the supporting framework to determine the appropriate short-term fiscal strategy by assessing the fiscal stance. We are also cautious about 'rolling' targets, for example a requirement to have a certain OBEGAL surplus by the end of the forecast. The date the surplus needs to be achieved would then roll out at each HYEFU, so that a surplus is never required to be achieved in actual data but only in the forecasts.

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<sup>1</sup> Fiscal space is the room for undertaking discretionary fiscal policy relative to existing plans without endangering market access and debt sustainability (IMF 2018).

<sup>2</sup> See T2021/2416 for more information on the OBEGAL target.

<sup>3</sup> Fiscal rules that target a cyclically-adjusted balance have been used internationally, but there is significant uncertainty around estimates of the output gap.

15. Overall, when judged against the objectives set out in the report, we consider the requirement to run small OBEGAL surpluses combined with an acceptance of deficits following shocks performs well across the criteria. It has a focus on sustainability and should be reasonably well aligned with stabilisation and structure objectives. OBEGAL as a measure is also reasonably well controlled by government (e.g. it excludes gains and losses from revaluations) and would therefore support government accountability. Given that it is a familiar measure, it should be relatively easily understood by policymakers and the public.
16. There are a range of choices on the specific wording of the target – for example whether the target should apply per annum or be averaged over several years, and whether it should be a strict target or an approximation e.g. “no less than” or “around”. Below we describe the rule as per annum, but we will need to work through the exact wording in more detail with you.

### **What level to target?**

17. We have calibrated the OBEGAL target so as to ensure the operating balance does not contribute to net core Crown debt as a share of GDP over time. More accurately, operating expenses can be financed by debt but only to the extent that debt-to-GDP does not increase. If GDP is growing, then debt can also increase. We justify this on the basis that if GDP is higher, a greater level of debt can be serviced.
18. We recommend that the Government target an OBEGAL surplus of no less than 0.5% of GDP per annum. This is largely driven by a view that government should aim for surpluses to offset future expected shocks, at which point deficits would be expected. It would be possible to stabilise net debt-to-GDP with a lower OBEGAL balance but then debt would ratchet up following a shock reducing the fiscal headroom.
19. There are always possibilities of forecast adjustments and forecast errors – both in terms of upside and downside surprises, but we consider that the 0.5% of GDP target is a good starting point for ensuring that the operating balance is sustainable over time, after factoring in expected shocks. Further detail on our calculation of the OBEGAL target can be found in **Annex 1**. We are still conducting further analysis on the exact number.

### **Classifications of operating expenses as investments**

20. Moving to a ‘golden rule’ would allow capital investments to be debt-funded (assuming there is headroom within the debt ceiling), but require operating expenses to be revenue-funded. This is not driven by a view that capital investments are more welfare enhancing than operating expenses (which can also make significant improvements in living standards, for example by building human capital). Instead, it is driven by a view about the best way to pay for investments and expenses.
21. Operating expenses tend to be recurring day-to-day expenses. To be fiscally sustainable over the long run, these should be met from operating revenue. Capital investments are lumpy, non-recurring expenditures that generate a long-lived asset. The costs of these investments should be spread over multiple years. This is done by debt-funding the initial cost and then requiring that the depreciation of the asset (an operating expense) be funded through operating revenue. By the time the asset is fully depreciated, revenue equal to the cost of

the asset has been raised (if the operating budget has been balanced). There is no free lunch; the investment still needs to be paid for – just over several years.

22. We are aware that some operating expenses could be considered to have investment-like properties – for example, large non-recurring expenditures that create benefits across multiple generations, perhaps creating an asset that does not sit on the Government’s balance sheet (e.g. the Three Waters Reform) or operating spending which builds wellbeing capital (e.g. education funding or preventative health funding). Our rules would require that these be funded from operating revenue in the year that the operating expense is incurred, i.e. it could not be spread across multiple years.
23. If the operating expenses that fall into this category were expected to be either small or spread fairly evenly over years (such as ongoing education and health expenses), then we would continue to recommend that these expenses be met from revenue. However, if investment-like operating expenses are going to be particularly large and lumpy, there are some options for how to allow for this within the rules:
  - a) Do nothing. The Government would have to justify misses of the rule in the actual data or the forecasts on the basis that significant investments had been made, with time-limited implications for the operating balance.
  - b) This could be acknowledged ahead of time. The numerical specification of the rule would stay the same – no less than 0.5% of GDP per annum – but wording could be included that “at times, large reforms will require that the rule is deviated from for short periods” or similar.
  - c) The specification of the rule could be altered to provide flexibility in any individual year. For example, the rule could be for OBEGAL to be in surplus for an average of 0.5% of GDP over several years. We have some hesitation about this as it requires a timeframe to be chosen – for any timeframe, a tally would need to be kept so that overs and unders are made up.
  - d) The definition of operating expenses for the calculation of OBEGAL could be changed to exclude investment-like operating expenses. The OBEGAL rule would therefore not constrain these expenses, but they would still be constrained by the debt ceiling. We do not recommend this. It would not align with general accepted accounting practice, and it would be difficult to define exactly what type of operating expenses the exclusion applies to, with the risk that day-to-day and recurring operating expenses are excluded and potentially gamed.
24. We prefer that the OBEGAL rule is kept simple, for ease of communication, monitoring and compliance and to reduce the risk of mismeasurement. If you think that the level of operating expenses with investment-like characteristics is going to be high and uneven over time – to the point that it inhibits the use of a per annum OBEGAL target – we would recommend option B above, acknowledging that the rule may be missed from time to time for large investments with operating implications.

## Debt Target

### ***We recommend combining the OBEGAL target with a net debt ceiling.***

25. Much of the academic literature recommends a combination of fiscal rules, often a long-term debt target and a short-term operational fiscal target for a flow variable, such as the budget balance.
26. A key benefit of a debt rule is that it can provide a backstop against deficit bias. This would be important if the operating balance rule was not adhered to and deficits accumulated. Given that we need to make assumptions on the size of shocks and how often shocks may occur, it is possible that deficits accumulate, in which case the net debt rule provides a backstop. As such, it would help ensure that there is a sufficient fiscal buffer in place to address significant economic shocks or natural disasters. One of the downsides of an operating balance rule is that previous deficits do not necessarily have to be offset by surpluses. As net debt is a stock measure, at some point it would become binding if deficit bias materialised. The debt rule also acts as a check on investment spend.
27. We propose that a net debt rule should be set so as to ensure that net debt is fiscally sustainable, but it also offers flexibility to respond to shocks and other changing circumstances, e.g. the need to invest to address specific challenges.
28. For this reason, we have concerns about adopting a net debt target that is excessively binding, which would reduce flexibility to respond to changing circumstances. In the recent past, debt targets were frequently set at levels that could be considered well below the fiscally sustainable level.
29. Instead, we propose adopting a net debt ceiling. The ceiling would be the net debt level below which you would stay over the long-term. It is not a target that you would aim to reach. While it is possible that debt may rise above the debt ceiling as a result of significant economic shocks, the intention would be that in such cases debt levels would be reduced back below the debt ceiling.
30. Alternatively, you could consider adopting a range for the net debt rule, which could provide an indication of what is considered to be a prudent range of debt. If a range is chosen, there could be an implicit or explicit requirement to target the mid-point of the range. The key advantage of this option is that it may be less likely that the range would be interpreted as a point target compared to the debt ceiling. However, it is challenging to determine the appropriate level to set the lower bound of the range. The upper bound of the range would likely be the same level as a ceiling – therefore the following section focuses on the appropriate level of a net debt ceiling, which could also be used as the upper bound of a range. Previous Treasury advice has highlighted the benefits of a range over a point target. If you are interested in adopting a range for the net debt rule, we will provide further advice on the appropriate level for the lower bound of a range.

## Where should the net debt ceiling be set?

31. There are different options for the Government on where to set the net debt ceiling. **We recommend a debt ceiling of 50% of GDP** (current net debt measure) based on assumptions around risk tolerance, the primary balance required for reducing debt after large shocks and ensuring adequate fiscal space. The framework we introduce here can be used with different judgments and may lead to different results on the level of the debt ceiling, depending on how different factors are weighed (refer to Table 1).
32. To determine a net debt ceiling, we start by identifying the level of net debt as a percentage of GDP that we have very little tolerance of exceeding – a maximum tolerated debt level. Our debt sustainability analysis (with very conservative assumptions of the interest rate exceeding nominal GDP growth by three percentage points) suggests a maximum tolerated debt level of 90% of GDP. This is substantially higher than the limit set out in earlier Treasury advice, and a speech by the then Secretary of the Treasury in 2019, of 50-60% of GDP. The analysis in 2019 aimed to identify the level of debt above which the marginal costs of debt exceed the likely benefits and noted that this level is likely to change over time depending on circumstances, for example the range of public sector investment opportunities and whether we are responding to a shock. As the optimal level of net debt-to-GDP varies, we have identified the debt ceiling based on debt sustainability analysis. The exact optimal level will depend on the economic and fiscal circumstances at the time. Under certain conditions, we consider that the wellbeing enhancing level of debt could be as high as 90% of GDP. In **Annex 3**, we compare our current approach with the 2019 analysis in more detail.
33. In order to determine the debt ceiling, we subtract a large buffer from this maximum tolerated debt level, which reflects an extreme but plausible shock. The recommended fiscal buffer of 40% of GDP would be adequate to absorb a range of shocks, from an average sized shock of 15% of GDP, which is likely over a decade, to a large shock of 40% of GDP, which has a low likelihood of materialising in any given decade. Our analysis suggests that starting from a net debt ceiling of 50% of GDP, the likelihood is very low (at less than 5%) that net debt exceeds 90% of GDP in response to a shock.<sup>4</sup> This buffer assumes a high degree of risk aversion and allows for the larger end of possible shocks, or multiple shocks in a short space of time. However, a large buffer supports the PFA principles of keeping debt at a prudent level. The buffer is larger than what we recommended pre-COVID (a minimum of 20% of GDP). This reflects a lower risk tolerance for debt exceeding the maximum limit and an allowance for greater use of fiscal policy to respond to shocks in future.
34. Table 1 shows other options we considered for a debt ceiling. Note that all of these options have fairly conservative underlying assumptions, including a large fiscal buffer of 40% of GDP and a high interest-growth rate differential ( $r-g$ ). More details on this analysis can be found in **Annex 2**.

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<sup>4</sup> This is based on a fan chart analysis where we created 500 alternative scenarios with shocks to the interest rate, growth rate and primary balance, and we find that net debt exceeds 90% of GDP in less than 5% cases.

Table 1: Options for debt ceiling target<sup>5</sup>

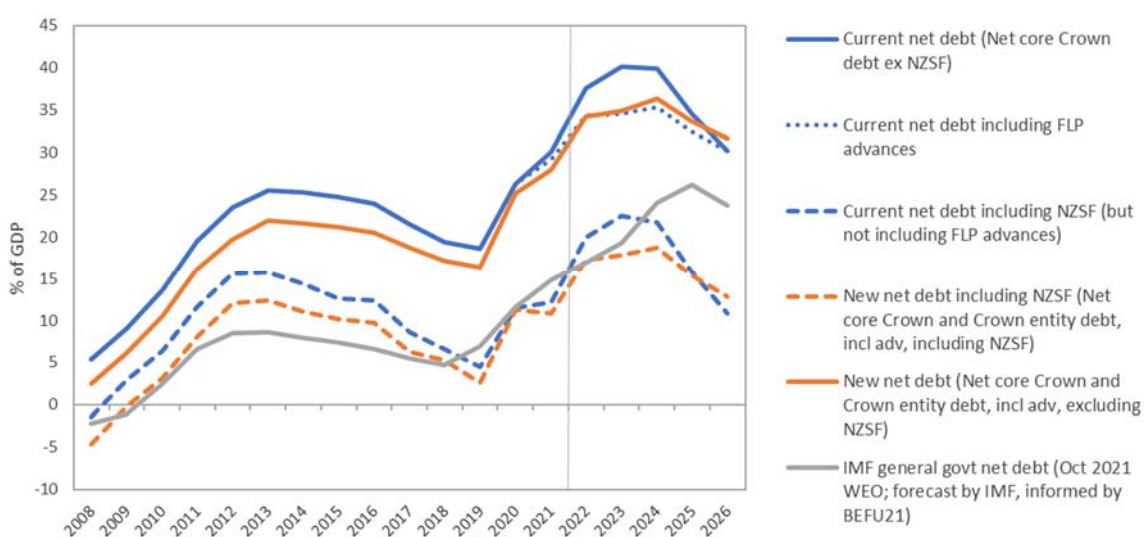
Options	Debt ceiling (as % of GDP)	Maximum debt limit (% of GDP) (assuming a conservative r-g of 3%)
<b>High debt ceiling</b>	<b>60%</b> This provides <b>considerable fiscal space</b> and avoids rationing of capital investment based on revisions in forecast base. Assumes higher willingness and credibility of government to run high primary surpluses to reduce debt back to the ceiling level in response to a tail risk scenario.	<b>100%</b> Debt can be stabilised at 100% of GDP with a primary surplus of 3% of GDP.  To reduce debt from this level to 60% of GDP, an average primary surplus of ~4.5% of GDP over a 20-year period (or lower over a longer period or with lower r-g assumptions) would be needed.
<b>Moderate debt ceiling</b>  <b>[recommended option]</b>	<b>50%</b> This provides <b>moderate fiscal space</b> and assumes the running of high primary surpluses to reduce debt back to the ceiling in response to a tail risk scenario.	<b>90%</b> Debt can be stabilised at 90% of GDP with a primary surplus of 2.7% of GDP.  To reduce debt from this level to 50% of GDP, an average primary surplus of ~4.2% of GDP over a 20-year period (or lower over a longer period or with lower r-g assumptions) would be needed.
<b>Relatively low debt ceiling</b>	<b>40%</b> This is likely to constrain capital investment if there were revisions in the forecast base given the limited fiscal space for the Government's fiscal strategy.	<b>80%</b> Debt can be stabilised at 80% of GDP with a primary surplus of approximately 2.4% of GDP.  To reduce debt from this level to 40% of GDP, an average primary surplus of 3.9% of GDP over a 20-year period (or lower over a longer period or with lower r-g assumptions) would be needed.

<sup>5</sup> This analysis is using the current net debt metric, as the models used for the analysis have not yet been updated with the new net debt metric. The models will be updated in time for Budget 2022.

## Adopting a new net debt measure and the treatment of the NZSF in the measure

35. There are a range of debt indicators that could be used for the fiscal rule. A wide range of methodologies and measures are used internationally. Each of the United States, Australia, the UK, Canada and the Euro area construct their headline debt indicators differently to each other, as summarised in **Annex 4**. All of these measures come with different limitations, and therefore it is important to look at a broader suite of measures to assess the direction of travel and appropriate fiscal strategy.
36. The analysis we have provided in this paper uses the current net core Crown debt measure. However, you have previously agreed to adopt a new net debt measure from Budget 2022 onwards (T2021/2416 refers). The new net debt measure includes Crown entity borrowings and nets off advances, and versions will be published including and excluding the New Zealand Superannuation Fund (NZSF). You will receive a draft of the Investment Statement in the week commencing 14 February, which will outline the new measures.
37. Figure 1 shows each of the current and new measures using HYEFU forecasts, and the IMF's Government Finance Statistics (GFS) measure of general government net debt for context. The IMF's GFS general government net debt measure is the measure we most commonly use to compare New Zealand's debt with other countries.

Figure 1: Net debt metrics for New Zealand (% of GDP)



Source: The Treasury and IMF

38. The new net debt measure (excluding the NZSF) sits slightly below the current measure until the end of the forecast period, where it reaches a similar level (31.7% compared to 30.2% of GDP). The main driver of the divergence until the end of the forecast period is the Reserve Bank's Funding for Lending Programme, which concludes at the end of the forecast period. The current and new measures that include the NZSF are both just over 10% of GDP at the end of the forecast period. This is around 20 percentage points of GDP lower than the measures excluding the NZSF due to the impact of netting off the NZSF's assets.

***We recommend adopting the new net debt measure including the NZSF for the new fiscal rule announced at Budget 2022.***

39. You requested further advice on whether the primary new net debt measure should be the one including or excluding the NZSF, paying particular regard to which measure is more internationally comparable. We have also assessed fiscal policy considerations for each indicator.
40. From a fiscal policy perspective, the most important benefit to using the indicator which includes the NZSF is that it would better represent New Zealand's fiscal sustainability by recognising that we build an asset when the NZSF grows. The purpose of the NZSF is to support fiscal sustainability as the population ages. Therefore, it is beneficial to recognise its contribution to sustainability in the fiscal indicators. The inclusion of the NZSF allows decisions to be made about making contributions to the NZSF (versus paying down debt for example) without the impact on headline net debt having undue weight in the decision.
41. It provides a more internationally comparable measure of fiscal sustainability relative to countries that net off most of their superannuation funds (such as Australia), or do not have sizable superannuation funds (such as the UK and US). This is reflected in how the headline debt indicators of New Zealand's key peer economies compare to standardized definitions of debt, summarised in **Annex 4**.
42. The new net debt indicator excluding the NZSF sits around 13 percentage points of GDP above the IMF's GFS net debt measure for New Zealand. The measure including the NZSF is much closer, at 4 percentage points below the IMF measure. The United States' measure sits around the same level as IMF GFS net debt (albeit due to a range of offsetting measurement differences). Australia and the UK's headline measures sit around 10-15 percentage points of GDP below their IMF GFS measures. The measure including the NZSF therefore has a more similar strictness to the headline measures of the countries we most commonly compare ourselves against. Of the peer economies assessed, only the Euro area and Canada have measures that sit well above the IMF net debt measure. However, the NZSF is mostly equity assets, and only a few countries net off equity assets in their net debt measure (Australia does, by netting off some of their superannuation fund's equity holdings in their net debt measure). Equity assets are not netted off in the IMF GFS net debt measure - only cash and fixed interest assets are netted off.
43. From a fiscal policy perspective, there are a number of risks to using the indicator which includes the NZSF as a fiscal rule:
  - a) **There could be communication challenges from simultaneously shifting to a net debt ceiling which provides more fiscal space in practice, while switching to an indicator that is 20 percentage points of GDP lower.** We will provide further advice on how to best communicate this shift if you agree with our recommendation to use the new net debt measure including the NZSF as the fiscal rule.
  - b) **Including the NZSF would introduce significant volatility into net debt – largely due to the high equity component of the NZSF.** The value of the NZSF is likely to move with the economy, adding to the procyclicality of debt. Australia excludes some equities from their measure, such that only around 70% of their overall fund is included. The potential for volatility from the NZSF is much higher now than in the past as the fund is larger. The NZSF is



expected to be nearly 20% of GDP by the end of the forecast period, which is approximately 3 times larger as a share of GDP than before the global financial crisis (GFC). The Guardians of the NZSF estimate that a GFC sized shock would approximately halve the value of the NZSF now. With a fund size of 20% of GDP, this would impact net debt by 10 percentage points of GDP. Even in an ordinary year, NZSF volatility could move net debt by several percentage points of GDP.

This volatility means including the NZSF is only suitable for a non-binding target, such as a long-term target or a ceiling well above projected debt levels. If it were to be a binding target it would encourage pro-cyclical fiscal policy. While we are not recommending a binding debt target now, there is a risk that a future government would adopt a binding debt target using the indicator once it is established in the public discourse, and this could have adverse long-term effects on New Zealand's fiscal policy.

- c) **The debt ceiling would need to be periodically reduced to avoid effectively spending the growth of the NZSF by borrowing against it.** Growth in NZSF assets over time would put downward pressure on a net debt indicator including the NZSF, which would allow greater borrowing if not accounted for. This trend would be around a 5 percentage point per decade of decline in debt-to-GDP. This downward trend in net debt can be accounted for in the fiscal strategy to mitigate the risk that growth in the NZSF would be offset by higher spending.
- d) **Including the NZSF in net debt may imply a willingness to liquidate it early to fund general spending.** This is inconsistent with the current policy objective of the NZSF, particularly if it implied the NZSF would be liquidated in a crisis when equity prices are likely to be low. However, clear communication can help address this risk.

44. Overall, we recommend adopting the net debt measure which includes the NZSF as the fiscal rule, but setting the debt ceiling at 30% of GDP rather than 50% of GDP if this measure is used (the 20 percentage point difference approximately represents the value of the NZSF). This is because we recommend not implicitly borrowing against the NZSF and relying on using its assets to pay for debt servicing in a crisis. In a crisis the NZSF is likely to have fallen considerably in value and borrowing against it and using it to pay for debt servicing would be inconsistent with the objectives of the fund. Other assets netted off against debt – such as bonds held by the core Crown – would provide a more reliable source of funding to pay for debt servicing if required. Using the measure that includes the NZSF nevertheless improves international comparability and better represents New Zealand's long-term fiscal sustainability, and we consider the risks of including the NZSF can be managed through the lower debt ceiling and ongoing consideration of its impacts when formulating fiscal strategy.

### **Capital Pipeline and Value-for-Money considerations**

45. Moving to an approach that places less weight on a net debt target and more focus on the operating position provides more flexibility to undertake long-term investments, as there would be less of a top-down constraint on capital spending. Overall, we consider that public investment should be driven by a range of factors – such as the presenting opportunities and challenges, public sector and market capacity to deliver and perhaps the stage of the economic cycle. If fiscal rules are

too binding on capital investments, it is possible that the level of investment is driven by forecast adjustments rather than broader considerations of the appropriate level of investment.

46. In principle, bottom-up tools and processes are better suited for driving spending decisions and prioritisation than top-down constraints on capital spending, and this requires the use of high-quality business cases and value-for-money assessments. There have already been some improvements made to support high-quality capital investment, such as implementing the multi-year capital allowance which supports longer-term budgeting, as well as the creation of the New Zealand Infrastructure Commission to support planning for infrastructure.
47. However, Investment Panel advice (T2022/76 refers) highlights a number of limitations with the implementation of current investment processes, in particular a lack of sufficient planning, reflected by a large number of initiatives submitted without a business case or with an under-developed business case. It is therefore recommended to strengthen these bottom-up tools, for example by implementing robust value-for-money assessment processes, stronger business case and assurance frameworks, increased transparency, and investing in capability. This becomes particularly important if you move towards a comparatively less binding debt ceiling.
48. **A debt ceiling of 50% of GDP offers fiscal space for discretionary capital investment.** Based on current forecasts, this fiscal space is around \$60bn on average over the forecast period.<sup>6</sup> However, as mentioned above, while this framework provides fiscal space, whether to use this fiscal space will depend on factors such as the quality of the investment pipeline, value-for-money considerations and market capacity.

[33]

50. However, there are significant market capacity and capability constraints. Advice from the Investment Panel identified these market constraints (including availability of labour and supply chain issues) as the most acute issues constraining delivery across the Government's capital portfolio. Developing a capital pipeline can help address this issue by allowing the market to invest in capacity and capability to support project delivery (including planning, prioritisation and sequencing). [33]
51. If the pipeline of investments is managed well, resulting in an ongoing and sustained increase in market capacity and therefore capital investment (including

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<sup>6</sup> This is based on the average value of a broad range of fiscal space estimated at between \$40-90 billion over the forecast period. It can vary significantly with changes in the forecast base and interest rates.

the large investments noted above), it is likely that even a net debt ceiling of 50% of GDP would require some prioritisation of capital expenditure.

### **Adopting a fiscal rule for capital investment spend**

52. If we do not have sufficient confidence in our bottom-up tools for assessing capital spending or wish to have more control over the phasing of capital spending over time, there is an option to implement a fiscal rule for capital investment either alongside or instead of the net debt ceiling. For example, the UK has implemented a fiscal rule ‘to ensure that public sector net investment does not exceed 3% of GDP on average over the rolling five-year forecast period’, therefore effectively implementing a ceiling for capital investment. This ceiling is relatively high compared to historic levels of capital spending, indicating that public investment is a priority for the government.
53. Adopting a target for capital investment could therefore:
  - a) signal the Government’s intention and direction of travel for capital investment, and
  - b) provide a top-down constraint on capital spending and increases in debt.
54. However, we have concerns about adopting a fiscal rule for capital investment. As already noted, we do not consider that fiscal rules are a good tool for driving spending decisions. Capital spending is usually multi-year and lumpy, which would make the implementation of such a target fairly complex. A rigid limit on capital investment would also likely be arbitrary and may prevent investments being made that are high value for money but exceed the maximum limit. In addition, we already have a multi-year capital allowance which can serve as a signal for the Government’s direction of travel for capital investment.
55. If you are interested in adopting a fiscal rule around capital investment spending, we will provide further advice on what level of capital investment may be appropriate as a ceiling and what the most appropriate indicator would be.

### **Discarded options**

#### ***We do not recommend adopting an expenditure or revenue rule.***

56. We prefer a balanced operating budget rule to either an expenditure or revenue rule, as it focusses on the balance between expenses and revenue. An expenditure or revenue rule has less of a strong link to fiscal sustainability, for which the balance between the two is more important. A stronger link to sustainability can be built into an expenditure rule but might not fundamentally solve the problem and adds complexity. For example, the EU has a rule that expenditure growth in excess of the potential growth of GDP must be financed by discretionary revenue changes. This rule only applies when debt is above the target level.

#### ***We do not recommend adopting a debt servicing costs as a fiscal rule.***

57. We have concerns about adopting a debt servicing cost target. Debt servicing costs are very sensitive to unpredictable movements in global long-term interest rates, and therefore the Government has only limited control over the path of the indicator. Forecasters internationally have a poor track record of predicting movements in long-term interest rates, such as the large fall in interest rates

since the GFC. Should interest rates unexpectedly increase, the Government may be required to make large adjustments to the stock of debt to meet a binding fiscal rule.

58. The indicator would be sensitive to the structure of debt, which could create pressure to use risky strategies to reduce debt servicing costs. For example, it could incentivise government to issue a lot of short-term debt. In addition, having a binding fiscal rule that is highly sensitive to interest rates could create pressure on the Reserve Bank to keep interest rates inappropriately low.
59. In addition, debt servicing costs are already captured in OBEGAL, which means that adopting an OBEGAL target will already capture changes in debt servicing costs, although in a less explicit way.
60. An alternative option would be to adopt debt servicing cost not as a binding fiscal rule, but as a trigger point for when debt levels should be reduced. The UK for example adopted a fiscal rule in 2020/21 that required debt to fall if the interest-to-revenue ratio was consistently over 6%. However, they have now moved away from this fiscal rule. When we spoke to HM Treasury, they raised the concern that the point at which the rule is triggered due to a rise in interest rates would likely come after a large amount of debt has been taken on. This would make it difficult to make large adjustments to the stock of debt in the face of higher interest rates.

***We do not recommend adopting net worth as a fiscal rule.***

61. Net worth has some features that require careful communication, which make it challenging to use as a main fiscal rule. The relationship between net worth and living standards is not always direct. Assets can be subject to volatile revaluations that are beyond the control of decision-makers and do not necessarily reflect any change in the provision of government services. An example would be recent increases in the value of property, plant and equipment. These impacts – outside of the Government’s direct control – limit net worth’s usefulness as an indicator for fiscal accountability. In addition, there is significant judgment involved for determining the value of non-financial assets, which makes its measurement more uncertain compared to traditional metrics such as debt.
62. Measures like financial net worth which have coverage between net debt and net worth could also be useful indicators for fiscal management in the future. These measures would have wider coverage than net debt, helping to illustrate the Crown’s financial buffers, but may not be subject to as significant revaluations and valuation judgements as the full net worth measure.
63. We note that there is a statutory obligation to set long-term objectives and short-term intentions for net worth. We will provide you with separate advice on this in March.

## **Communication and Implementation of the New Fiscal Rules**

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64. Depending on your choice of fiscal rules, there will be options for how to communicate and implement them. For example, you may want to give a speech to explain the shift and you will be able to use the Fiscal Strategy Report to explain the changes. You could reinforce that a ceiling is not the same as a point target by showing fiscal projections that remain well below the ceiling, and

you could demonstrate transparency by continuing to publish net debt with and without the NZSF.

65. We would like to discuss communication and implementation options with you at the Finance Priorities Meeting on 17 February and we can continue to work with your office on a plan ahead of more detailed advice in March 2022.

## Next Steps

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66. We will discuss this advice with you at the Finance Priorities Meeting on Thursday 17 February. After receiving feedback from you and your office, we will provide further advice in March following the fiscal strategy 'roadcheck' report, so you can take the new fiscal rules, including the long-term objectives and short-term intentions, to Cabinet with the Budget 2022 Cabinet paper. You will receive a draft of this Cabinet paper on 1 April.

## Annex 1: Calibration of the operating balance rule

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This annex sets out the analysis underlying our recommendation of targeting an OBEGAL surplus of no less than 0.5% of GDP in each year.

Internationally, operating balance targets are usually calibrated to ensure convergence with the debt target. This tends to result from an assumption that debt is currently above the target level and needs to be reduced. We do not consider that this is the case in New Zealand – net debt-to-GDP is prudent across the forecast. Given our recommended level of the debt rule this would imply targeting deficits for the operating rule.

Instead, we recommend ensuring the operating balance does not add to net debt-to-GDP over time. Generally, this means that net debt-to-GDP should not be increased for the day-to-day costs of providing public services, which helps to support intergenerational equity and fiscal sustainability. Operating expenses can be financed by debt but only to the extent that net debt-to-GDP does not increase. If GDP is growing, then debt can also increase which is justified as, with higher GDP, a greater level of debt can be serviced. This is also justifiable with regard to intergenerational equity as future generations will be richer if GDP is growing.

Calculating the level of the OBEGAL balance such that operating expenses do not add to net debt-to-GDP over the long-term requires some assumptions. This is primarily because we expect that governments will run deficits at times, in response to shocks. We would recommend that surpluses are achieved at other times to offset this impact on net debt-to-GDP.

To calibrate the operating balance rule we take the following approach:

- **Calculate the average required operating balance, such that it does not contribute to a rise in net debt-to-GDP.** This approximates to the growth rate of nominal GDP multiplied by debt-to-GDP. We assume a long-run growth rate of nominal GDP of 4.5% and a starting debt stock of approximately 30% of GDP. The operating balance can therefore be -1.35% of GDP so as not to contribute to net debt-to-GDP.
- **Convert this measure into an OBEGAL balance.** Given that OBEGAL excludes gains and losses, there is a question as to whether the Government should target a different level of OBEGAL than the required operating balance. Gains and losses vary but on average over a long period of time we tend to expect gains, primarily from the NZSF. However, targeting a lower level of OBEGAL on the assumption that this will be offset by returns on the NZSF, would mean that we were effectively using those returns to pay for operating expenses, rather than saving them. This, combined with the uncertainty of gains and losses, suggests we should not make an adjustment.
- **Add in an allowance for the NZSF.** NZSF contributions are not operating expenses and are therefore not included in OBEGAL. If the Government intends to contribute to the Superfund out of revenues, as opposed to out of debt – then the required OBEGAL surplus is higher. We add in 0.45% of GDP. We have not added in any further adjustment for pre-funding of long-term costs, beyond the contribution to the NZSF.

- **Add in an allowance for shocks.** This is perhaps the most uncertain variable. We assume that significant economic shocks will occur approximately every decade. The size of those shocks has varied over time but we assume that an average shock will add approximately 15 percentage points to net debt:GDP. This is discussed further in Annex 2. This requires that the operating balance be larger than it otherwise would by 1.5 percentage points of GDP per annum. This implicitly assumes that deficits resulting from economic shocks will be smaller than they otherwise would be, due to the stronger starting OBEGAL position.

The result is a required OBEGAL surplus of 0.6% of GDP.

As such, we recommend that the Government target an OBEGAL surplus of no less than 0.5% of GDP in each year. This aligns well with the Public Finance Act requirement that “over a reasonable period of time operating expenses do not exceed operating revenues”. As set out above, operating deficits might be run in some years, and depending on the extent of deficits this may need to be justified as a departure from the principles.

We do not recommend that a correction mechanism be put in place for any misses of the target. We consider this is justified on the basis that we have been conservative in the calibration of the rule e.g. prefunding future shocks, which should help provide a buffer for some years that the target OBEGAL surplus is not reached. However, we will keep this under review.

### *Escape clauses*

The PFA already provides a so-called ‘escape clause’ from the principles of responsible fiscal management. The clause does not specify the circumstances in which not meeting the principles is justified; it leaves this up to the government of the day. Under the PFA, a government is required to explain why they have departed from the principles and how they will revert to them, but only upon triggering the escape clause, not in advance. This is in line with the flexible, transparency-based approach to fiscal rules.

A government could choose to provide more information on the circumstances in which it would depart from its short-term intentions and long-term objectives. The IMF suggests that a good escape clause should specify, amongst other things, the events that would trigger it and the timeline for reverting to the rule.

We recommend using the current escape clause in the PFA rather than being more specific in the operating balance rule, on the basis that a limited list of events or economic impacts might be too rigid. This is in line with the current practice in the UK and the EU – where events that would trigger the escape clause are not specified in advance.

## Annex 2: Analysis on the net debt ceiling

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This annex sets out the underlying analysis on our recommendation of the debt ceiling in two parts:

1. To determine a net debt ceiling, we start by identifying the level of net debt as a percentage of GDP above which we have very little tolerance of exceeding – a **maximum tolerated debt limit**;
2. The maximum tolerated debt limit is determined based on conservative assumptions about interest and GDP growth rates, which in turn determine the primary surpluses that would be needed to stabilise and reduce debt from these high levels. In order to determine the debt ceiling, we then subtract a large **buffer** from this maximum debt level, which reflects an extreme but plausible shock.

This leaves the debt ceiling or the level of net debt-to-GDP that we would not recommend exceeding outside of an economic shock.

There are different options for the Government on where to set the net debt ceiling (Table 1). We recommend a moderate debt ceiling of 50% of GDP based on a balanced judgement of the wellbeing gains from additional spending, risk tolerance, willingness to run primary surpluses to reduce debt after large shocks, and to ensure adequate fiscal space for flexibility in the Government's fiscal strategy. **This recommendation combines a maximum debt limit of 90% of GDP and fiscal buffer of 40% of GDP to give a debt ceiling of 50% of GDP.**

The analysis in this annex is based on a net debt measure because it assumes that the financial assets and the returns associated with the assets can be used to repay or service debt. However, we do not think that this applies to the NZSF as the returns on the assets, and the assets themselves, are earmarked and cannot be liquidated to service or pay down debt in the absence of legislative change. Hence the debt analysis in this note is based on the existing net core Crown debt measure that excludes the NZSF. This can be converted to the new net debt measure that includes the NZSF by deducting the value of the NZSF (approximately 20 percentage points of GDP) from the current debt measure. This would mean a debt ceiling of 30% of GDP based on the new debt measure including the NZSF.



**Table 1 - Options and considerations for a debt ceiling**

Options	Debt ceiling (as % of GDP) (based on current net debt measure)	Fiscal buffer as % of GDP	Maximum debt limit as % of GDP (assuming interest rate and growth rate differential of 3%)
<b>High debt ceiling</b>	<p><b>60%</b></p> <ul style="list-style-type: none"> <li>This provides <b>considerable fiscal space</b> for additional capital investment and avoids rationing of capital expenditure based on revisions in forecast base. The operating expenditure will be constrained by the operating balance rule (outlined in Annex 1)</li> <li>Leaves sufficient room (~ \$100 billion on average over the forecast period) to support the gradual increase in the capital investment pipeline.</li> <li>This <b>assumes higher willingness and credibility of governments</b> to run high primary surpluses to reduce debt back to the ceiling level in response to a tail risk scenario.</li> </ul>	<p><b>40%</b></p> <p>To allow for tail-risk shocks, or multiple shocks in a short space of time, <b>we recommend a fiscal buffer of around 40% of GDP</b>. The buffer is larger than we recommended pre-COVID (at least 20% of GDP) reflecting a low risk tolerance for exceeding the maximum debt limit, and greater allowance for using fiscal policy in downturns given the constraints on monetary policy associated with the lower bound on interest rates.</p> <p>OR</p> <p>A government may wish to have a buffer higher than this (eg, 50% of GDP) if it has a very high degree of risk aversion to exceeding the maximum debt limit, contingent liabilities crystallising, and their potentially severe impacts on parts of the population if not supported with a fiscal response, or if it expects to want to use fiscal policy actively in future downturns for macro stabilisation.</p> <p>OR</p>	<p><b>100%</b></p> <ul style="list-style-type: none"> <li>Debt can be stabilised at 100% of GDP with a moderate primary surplus of 3% of GDP.</li> <li>But to reduce debt from 100% to 60% of GDP will need an average primary surplus of ~4.5% of GDP over a 20-year period.</li> <li>The likelihood of debt exceeding this level in response to shocks is very small (at less than 5%).</li> </ul>
<b>Moderate debt ceiling</b>	<p><b>50%</b></p> <ul style="list-style-type: none"> <li>This provides <b>moderate fiscal space</b> (~ \$60 billion on average over the forecast period) for additional capital investment</li> <li>Assumes <b>a reasonable willingness</b> for running high primary surpluses to reduce debt back to the ceiling in response to a tail risk scenario.</li> </ul>	<p><b>90%</b></p> <ul style="list-style-type: none"> <li>Debt can be stabilised at 90% of GDP with a primary surplus of 2.7% of GDP.</li> <li>To reduce debt from 90% to 50% of GDP will need an average primary surplus of ~4.2% of GDP over a 20-year period.</li> <li>The likelihood of debt exceeding this level in response to shocks is very small (at less than 5%).</li> </ul>	

<p><b>Relatively low debt ceiling</b></p>	<p><b>40%</b> This is likely to constrain capital investment with revisions in forecast base</p>	<p>A government may wish to have a buffer towards 30% of GDP, if the risks highlighted for a buffer of 40% of GDP do not hold, or if government wants to attempt to reduce future fiscal pressures or sustainably grow the economy and wellbeing by investing in high value for money initiatives now.</p>	<p><b>80%</b></p> <ul style="list-style-type: none"> <li>• Debt can be stabilised at 80% of GDP with a smaller primary surplus of 2.4% of GDP.</li> <li>• To reduce debt from 80% to 40% of GDP will need an average primary surplus of 3.9% of GDP over a 20-year period.</li> <li>• The likelihood of debt exceeding is very small at 5%.</li> </ul>
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## Part 1: Estimating a maximum tolerated debt limit

In considering the maximum debt limit, we assume it will only be reached in response to big shocks, when the benefit of macroeconomic stabilisation through expansionary fiscal policies will be higher than the economic cost of crowding out, or the future fiscal cost of higher interest payments in response to the crisis. To estimate the maximum debt limit, we have<sup>7</sup>–

- **Identified the maximum feasible primary balance<sup>8</sup>** that can stabilise debt at high levels given different assumptions about real interest rates ( $r$ ) and growth rates ( $g$ ) (the interest rate differential,  $r-g$ , determines the rate at which debt grows as a percentage of GDP).
- **Calibrated a fan chart to assess the uncertainty around the trajectory of net debt in the medium-term.** This illustrates how likely net debt is to reach high values assuming a high value of  $r-g$  and a high initial level of net debt compared to HYEPU forecasts. We use the fan chart to determine the probability that net debt will surpass a certain maximum limit (identified through the previous step of determining the maximum level of feasible primary balances). This serves as a second check on the maximum debt limit estimated.

### *Identifying the maximum feasible primary balance*

We identify a maximum feasible level of primary balance assuming a conservative level of  $r-g$ , which yields the maximum level of debt that can be sustained. If debt exceeds this level, it runs the risk of increasing indefinitely as the primary balance required to stabilise it will be difficult to sustain. In Table 2, we look at scenarios with  $r-g$  at 1% and 3% to proxy a moderate-to-extreme scenario of an increase in the interest rate differential (see Figure 1 for historic interest rate differentials).

Using New Zealand's historical fiscal performance as a proxy for future fiscal performance (Figure 2) helps inform the assessment of what constitutes a feasible fiscal consolidation. This suggests that an average of 1-3% of primary balance is feasible to stabilise debt after a shock. It may be harder to achieve higher levels of primary balance for a sustained period after a crisis when the economic base is weak and debt is at high levels. This can be due to political and public resistance to spending cuts or the fact that additional revenue-raising measures eventually become ineffective (IMF, 2018).<sup>9</sup> For example, after the GFC the primary balance reduced from a deficit of -8% in 2011 to a surplus of 1% in 2020, with net debt reducing from a peak of 25% in 2013 to 19% of GDP in 2020. Following extreme shocks, it may be possible to achieve a primary surplus greater than 3% in response, or to take longer to consolidate.

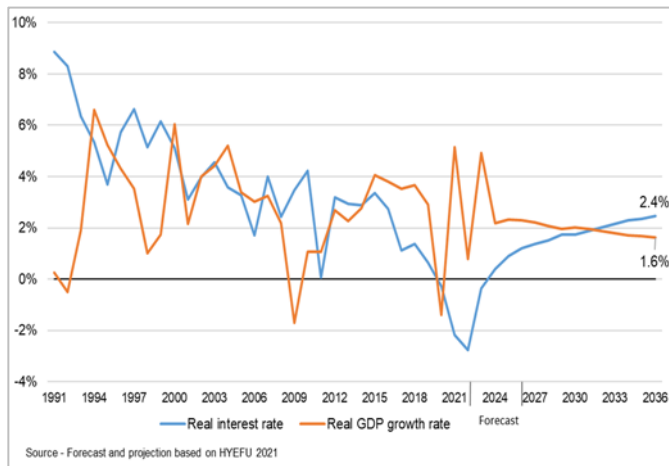
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<sup>7</sup> This is based on the first step in calibrating a debt rule ceiling when the upper limit of net debt is unknown (IMF, 2018); This is also described in Annex 6, approach B in [IMF Staff guidance note for public DSA](#) (2013), Reforming the European fiscal framework, [Martin et al \(2021\)](#) and Fiscal policy under low interest rate, [Chapter 4 \(Blanchard 2021\)](#)

<sup>8</sup> The primary balance is the difference between the Crown's revenue and its non-interest expenditure.

<sup>9</sup> How to calibrate fiscal rules: a primer ([IMF, 2018](#))

**Figure 1 – Real interest rate (10-year bond rate adjusted by inflation) and real growth rate based on historical data and HYEUFU forecasts and FSM projections**



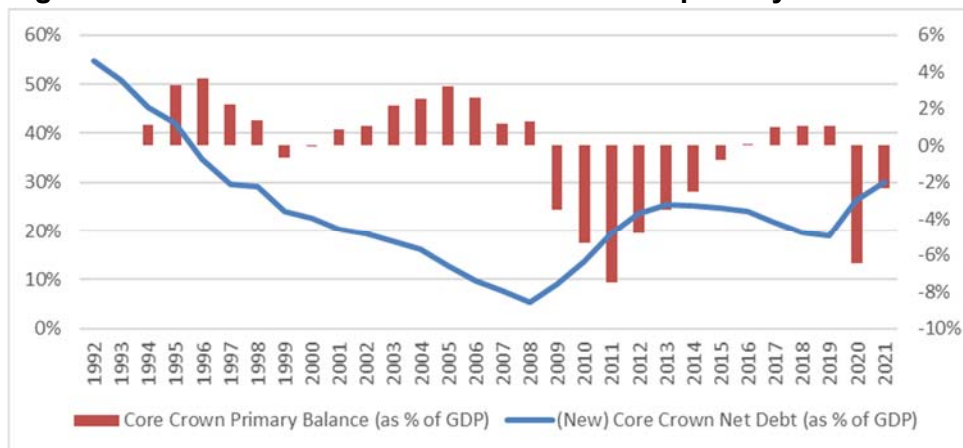
Source: Treasury

**Table 2 – r minus g and debt stabilising primary balance**

Scenario	Real interest rate	Real growth rate	r-g	Primary balance	Maximum sustainable debt level $pb^*(1+g)/(r-g)$
Moderate increase in interest rate differential	3%	2%	1%	0.5%	51%
				1.0%	102%
				1.5%	153%
				2.0%	204%
				2.5%	255%
				3.0%	306%
Large increase in interest rate differential	4%	1%	3%	0.5%	17%
				1.0%	34%
				1.5%	51%
				2.0%	67%
				2.5%	84%
				3.0%	101%

Source: Treasury analysis

**Figure 2 – Net core Crown debt and core Crown primary balance 1994-2021**



Source: Treasury analysis

### **Testing the size of primary balances needed to reduce debt from high levels in a tail risk scenario**

The judgement on manageable debt dynamics, favourable credit ratings, and a low risk premium can change significantly in a tail risk scenario where New Zealand is hit with a massive shock leading to an increase in debt by ~40% of GDP.

We assess the size of primary balance needed to reduce net debt from 80%, 90% and 100% of GDP to the assumed starting debt ceiling level of 40%, 50% and 60% of GDP respectively (assuming a large increase in the interest rate differential with  $r-g$  at 3% to proxy borrowing conditions in an extreme scenario). This should broadly reflect the size of the adjustment needed to bring net debt back to the debt ceiling after a big shock with a conservative  $r-g$  assumption. We focus on primary balance adjustment rather than OBEGAL as it more accurately reflects the required change in non-interest expenditure and revenue to reduce debt levels.

Starting from a net debt level of 50% of GDP, a shock that increases debt to 90% of GDP (Figure 3) can be reduced back to 50% of GDP by decreasing the capital allowance assumption from \$8 billion to \$2 billion per year in the projection period and running a 4.2% primary surplus over a two-decade period (Figure 4). This primary surplus roughly corresponds to an increase in the long-term tax-to-GDP ratio by 3.0 percentage points to 30.5% of GDP. These are very conservative assumptions – on both the size of the shock and the interest rate differential. If the shock were 20% of GDP and the interest rate differential were 1%, the required primary surplus would be 1.6% per annum for 20 years.

Depending on the Government's willingness to run primary surpluses in response to large shocks, a maximum debt limit in the range of 80-100% of GDP is feasible. We recommend a maximum limit of 90% of GDP assuming a moderate-to-high willingness of the Government to run primary surpluses in response to large shocks.

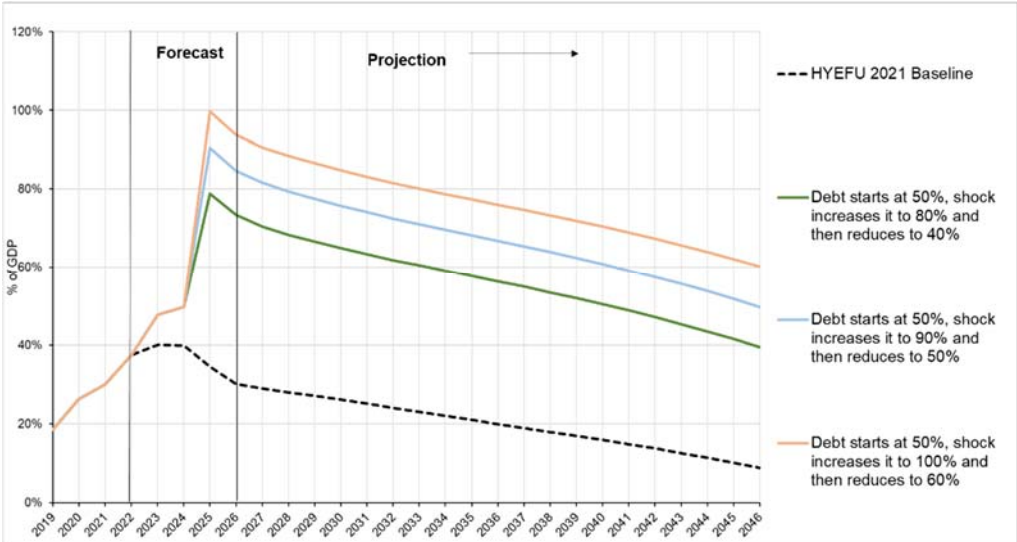
**Table 3 – Average size of primary balance<sup>10</sup> and the duration needed to reduce debt from high levels back to debt ceiling level with interest-growth rate differential of 3%**

Debt ceiling (% of GDP)	Maximum debt limit (% of GDP; assuming a fiscal buffer of 40% of GDP)	Average primary surplus to <u>reduce</u> debt back to ceiling over 20 years (% of GDP)	Allowances and tax to GDP ratio assumed for 20-year period (assuming operating allowance of \$2.75 bn per year)	
			Capital allowance per year (growing at 2%)	Long term tax to GDP ratio (% of GDP)
HYEFU track	40%	2.8%	\$8 bn	27.5%
40%	80%	3.9%	\$2 bn	30.1%
50%	90%	4.2%	\$2 bn	30.5%
60%	100%	4.5%	\$2 bn	30.8%

Source: Treasury

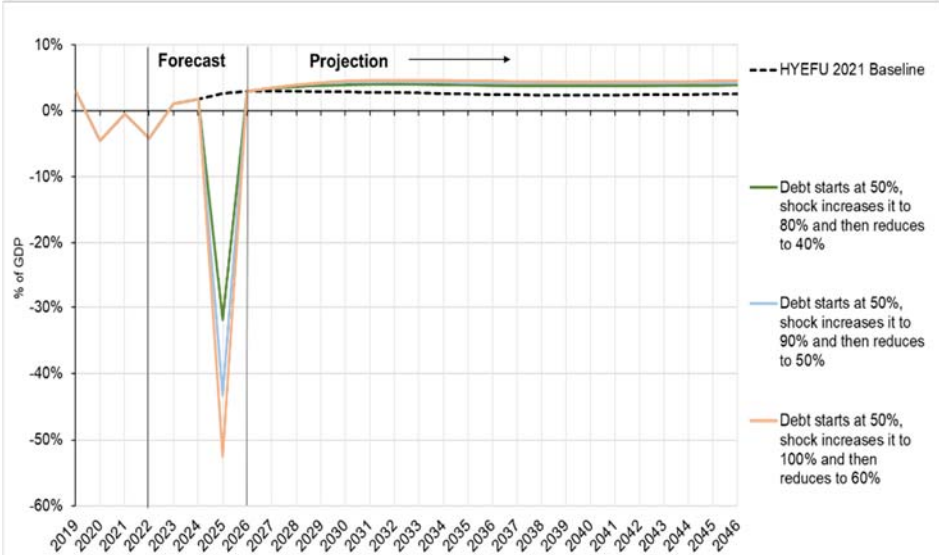
<sup>10</sup> We calculate this using two different methods – a) We modelled these scenarios using the HYEFU 2021 Fiscal Strategy Model to calculate the size of primary balance needed to reduce net debt (based on the current net debt measure) using detailed fiscal projections over a 20-year period; b) Using

**Figure 3 – Net core Crown debt (as % of GDP) for scenarios outlined in Table 3**



Source: Treasury

**Figure 4 – Core Crown primary surplus (as % of GDP) needed to reduce debt for scenarios outlined in Table 3**



Source: Treasury

Although this method is simple in suggesting a maximum debt limit, it can lead to limits that are too high. There is significant judgement involved in deriving the maximum debt limit as all the variables affecting debt dynamics are uncertain, from the primary balance needed to the underlying growth rate of the economy. Therefore, we calibrate fan charts<sup>11</sup> to graphically

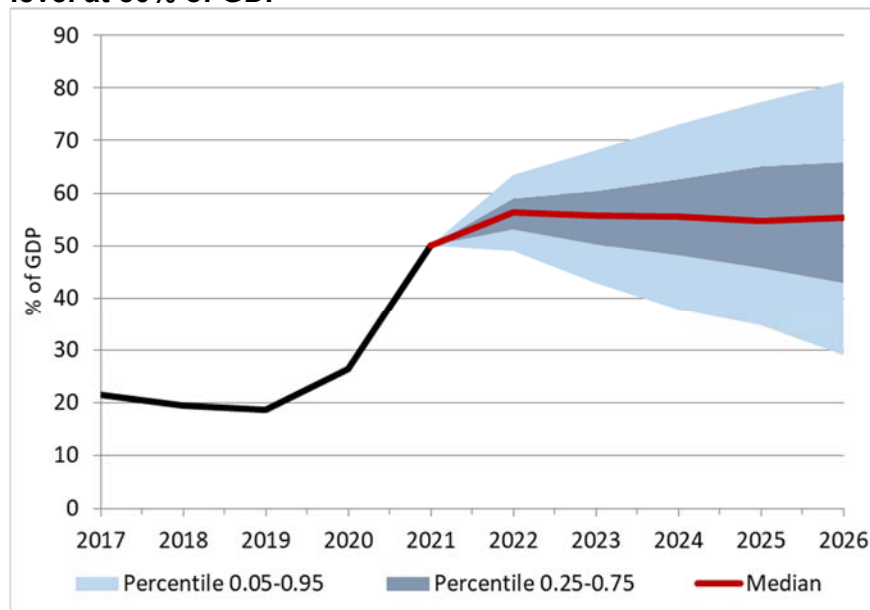
equation 22 outlined in the [IMF's technical note](#) and assuming  $r=4%$ ,  $g=1%$ , and debt at 90% of GDP coming down to 50% of GDP over 20 years – this will require a primary balance of just over 4% of GDP.

<sup>11</sup> The process of creating fan charts involves extracting several shock series and adding them to the baseline values of growth rate, interest rate, and primary balance. These values are then plugged into the debt dynamic equation to obtain alternative debt series. We assume the baseline values of the interest rate, growth differential, and the primary balance based on HYEFU 2021 forecasts. The values of standard deviations of the shocks are also based on historical data, which may overstate the uncertainty as there are persistent oscillations in the historical interest rate track and a trend in the historical primary balance series. We assume some degree of persistence of shocks through serial correlation, and the correlation coefficient is also based on the correlation in the historical data.

illustrate the uncertainty surrounding the trajectory of net debt in the medium-term given a starting level of debt.

The risk dispersion of the fan chart (Figure 5) indicates that the **likelihood of debt exceeding a maximum limit of 90% of GDP is very low at less than 5%** with a starting point of 50% of GDP. This means that even if starting with an initial debt level of 50% of GDP and assuming an average r-g of 3% over the forecast period, when we create 500 alternative scenarios with shocks to interest rate, growth rate and primary balance, net debt exceeded 90% of GDP in less than 5% of cases.

**Figure 5 – Fan chart for trajectory of net debt (% of GDP) with high r-g and initial debt level at 50% of GDP**



Source: Treasury

The shock analysis<sup>12</sup> indicates that the probability of debt exceeding the maximum limit is very small. However, it is still important to ensure adequate fiscal buffers as a safeguard against reaching this limit.

## Part 2: Estimating a fiscal buffer

Macroeconomic shocks experienced in New Zealand since World War Two have increased debt by an average of 10% of GDP each, and have occurred every 9 years on average. At times debt has increased sharply (such as the 23.5% of GDP increase in debt in the five years following the 1982 downturn), and at other times it has fallen (such as the 10% of GDP fall in debt in the strong recovery that followed the 1997/98 downturn). Likewise, the modelling in the 2021 Long Term Fiscal Statement found a range of hypothetical shocks with

<sup>12</sup> This is based on the methodology and model explained in [Section 2 – Building fan charts with simple statistics, Public debt dynamics under uncertainty \(IMF\)](#). This method is subject to several caveats but does not change our judgement significantly –

- This method assumes that history will be a good guide to the future, although there is always the possibility that the future is more or less volatile than recent history – there have been large swings in the past from high volatility to lower volatility during the great moderation which is not captured in this method.
- The method does not enforce lower bound on interest rates.
- This method effectively takes historical variation of time series and adds it point forecasts of HYEPU tracks, implicitly assuming that point forecasts have the highest probability according to the way we've constructed uncertainty. Hence there is a conceptual issue in adding randomness to what is a judgementally based forecast, especially when the uncertainty is constructed independently of the forecasting approach.

fiscal impacts of this magnitude.<sup>13</sup> Shocks of this magnitude imply that, in terms of flow metrics, governments would need to replenish the buffer at a rate of approximately 1% of GDP per year to maintain stable debt.

International experiences appear to have been similar to New Zealand's over recent decades. New Zealand's increase in debt to GDP after the GFC was around the median of advanced economies. However, countries most hit by the 2008/09 financial crisis had larger increases (e.g., 40% of GDP increases in the US and UK, and increases of 50% of GDP or more in peripheral Europe and Japan). New Zealand also had much larger increases in debt-to-GDP in response to shocks prior to the 1950s.

Based on this assessment of potential fiscal shocks, the Treasury suggested pre-COVID that a buffer of at least 20% of GDP is required to respond to a range of shocks. We also suggested that a government may wish to maintain a larger buffer if it were particularly concerned about future uncertainties and risks.

We consider that our previous analysis of the magnitude of shocks broadly still holds, although a larger fiscal response is likely to be warranted in future downturns given the constraints on monetary policy associated with the lower bound on interest rates.

COVID does not lead us to think that there are likely to be substantially more or larger downside shocks than previously assumed. We have a long history of shocks internationally to consider, and COVID only adds a little to that sample. In addition, even if there are more frequent pandemics going forward, the world may be able to manage them at lower cost than COVID given learnings from the response to COVID.

Overall, we recommend a buffer of 40% of GDP and replenishing the buffer at a rate of 1.5% of GDP per year on average over time. The buffer is larger than we recommended pre-COVID (minimum of 20% of GDP). This is because we have built in a low risk tolerance to exceeding the now-higher maximum debt limit and made some allowance for the likelihood of needing to use fiscal policy more in future downturns than we have in historical downturns.

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<sup>13</sup> The 2021 long-term fiscal statement (page 28-30, [He Tirohanga Mokopuna, 2021](#)) models a range of shock scenarios to show its impact on net debt. In the recession scenario, each recession is expected to increase net debt by around 10ppt of GDP. The earthquake scenario and government's fiscal response modelled is shown to increase net debt to increase by approximately 12ppt of GDP.



## Annex 3: Comparing to 2019 Treasury analysis

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Our advice (T2019/661) on a prudent level of net debt in 2019 broadly concluded:

- an upper limit on net core Crown debt should be 50-60% of GDP;
- a buffer of at least 20% of GDP should provide a safety margin below that; and
- taken together, that would suggest a prudent debt limit of around 30% of GDP

***We use a different framework in our current analysis that focuses on a debt ceiling.***

As a starting point for our current analysis, we consider that the current level of debt is prudent, and that 'prudent' debt can change depending on the macroeconomic context. We therefore propose a different framework from 2019 that recommends a debt ceiling – defined as the level of debt below which the Government should aim to stay in the absence of shocks. This would allow for a fiscal buffer between the debt ceiling and the recommended “maximum debt limit”. A maximum debt limit is the level beyond which it may be difficult to stabilise and reduce debt.

The previous analysis identified net debt of 50-60% of GDP as being the upper limit, on the basis that the marginal costs of additional debt would likely exceed the marginal benefits beyond this point (hereafter referred to as the wellbeing approach). This was predicated on a number of factors, including the risk of crowding out private sector investment. The welfare-maximising level of debt is likely to change over time – for example, in response to a shock it could be welfare enhancing to allow net debt-to-GDP to rise beyond 50-60%. **The current analysis uses a fiscal sustainability approach rather than the wellbeing approach in identifying a maximum debt limit of 90% of GDP.** The exact optimal level will depend on the economic and fiscal circumstances at the time.

Given that the previous net debt limit of 50-60% of GDP was based on a wellbeing approach, it could be breached if deemed wellbeing-enhancing, for example in response to a major shock like COVID-19 or if there is the need for a significant increase in investment. In the updated framework, since the maximum debt limit is based on a debt sustainability approach, there is a lower risk tolerance for breaching the limit in response to shocks. To enable this shift in our framework, as well to account for the uncertainty in future interest rates and greater use of fiscal policy in downturns, we consider **building a larger net debt buffer of 40% of GDP** compared to the 2019 analysis.

The shift in the approach suggests that governments will need to make the trade-off between higher debt and additional projects on a case-by-case basis, as the costs and benefits of higher debt and investment will constantly change as net debt changes. Compared to 2019, a 30% debt target is likely to overly constrain capital investment in a way that could reduce wellbeing. Debt is already above 30% of GDP in 2021 and our assessment of the amount of public investment needed in the medium-to-long-term is higher than in 2019.

## Annex 4: International comparison of net debt measures

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A range of approaches is used to measure net debt internationally. Net debt measures are generally defined as debt less assets that are equivalent to debt instruments, although some countries (such as Australia) do net off some equities.

The IMF's Government Finance Statistics (GFS) net debt measure is the one we most commonly use for international comparisons. Under this methodology, a government's debt instrument assets (eg, bonds, loans and deposits) are netted off against its debt instrument liabilities. Equities are not netted off in order to maintain a symmetrical treatment of assets and liabilities.

One reason the IMF GFS net debt measure for New Zealand is significantly lower than the (current) measure of net debt excluding the NZSF is that the IMF nets off ACC's fixed interest assets (valued at approx. \$29 billion). Our proposed net debt measure does not incorporate any ACC assets as these are held to fund an even larger insurance liability which, being a non-debt instrument, is not captured in any net debt measure.<sup>14</sup>

The IMF's net debt measure is also lower because the IMF nets off fixed interest assets of the NZSF. We have previously recommended against including only the fixed interest assets of the NZSF as this could incentivise future governments to direct the NZSF's portfolio allocation choices to meet a debt objective. The NZSF is currently around 16% bonds (valued at approx. \$10 billion) with the remaining 84% (approx. \$52 billion) consisting of other assets, mostly equities. To accurately measure New Zealand's net debt on a GFS basis we would also need to work with NZSF to identify which instruments within their investment portfolio meet the definition of fixed interest assets under the GFS framework, as this information is not currently collected for Government financial reporting purposes.

Like the IMF's GFS, Australia's framework prescribes that fixed interest assets are to be netted off in net debt, but equity assets are not. However, around 45% of Australia's superannuation fund is held in pooled instruments of debt and equity assets for which the treatment in net debt is not prescribed. Australia has made the policy choice to net off these pooled investments so that both the pooled assets and fixed interest assets (approx. 25% of their fund) are netted off. This results in around 70% of their fund being netted off – with the remaining 30% in directly held equities being excluded. Therefore, including the NZSF could move New Zealand's net debt measure closer to Australia's methodology in practice, but only because of their particular situation with Australia's pooled instruments.

Elsewhere, the UK does not have a significant sovereign wealth fund – arguably this lowers their net debt, as savings are more likely to be directed to paying down debt rather than building up assets. The US and Euro area use gross debt measures as their headline debt indicators, reducing the relevance for them.

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<sup>14</sup> NZSF assets also differ from ACC assets (which we do not recommend including in net debt) because NZSF assets are owned and accessible to the Crown, are not linked to a specific contractual liability, and are funded by taxes rather than separately determined levies.

**Table 1: International comparison of net debt methods and levels**

Jurisdiction	National headline debt measure	Level of debt in 2021 (% of GDP actual or estimate)			Possible reasons why the national headline debt measure is above or below the IMF GFS net debt measure <sup>15</sup>
		National headline debt measure <sup>16</sup>	IMF GFS net debt (Dec 2021)	Difference between headline and GFS measures	
New Zealand	Net core Crown and CE debt (excluding the NZSF)	28.0%	14.8%	+13.2%	Excluding the NZSF makes debt appear higher. This effect outweighs the exclusion of local government debt.
	Net core Crown and CE debt (including the NZSF)	10.8%		-4%	Exclusion of local government debt.
Euro area	General government gross debt <sup>17</sup> (Maastricht definition)	97.7%	82.8%	+14.9%	Headline measure is gross debt so nothing is netted off
Canada	Federal debt (a net debt measure) <sup>18</sup>	47.6%	34.9%	+12.7%	The headline measure includes a wide range of assets and liabilities, and the main superannuation funds are not netted off, but provincial and local government debt is excluded.
United States	Debt held by the public (a federal gross debt measure) <sup>19</sup>	102.3%	101.9%	+0.4%	Headline measure is gross debt so nothing is netted off, but states and local government are also not included
Australia	Net federal debt <sup>20</sup>	28.6%	38.1%	-9.5%	The majority of superannuation fund is netted off and the measure excludes state and local government debt.
UK	Public Sector Net Debt excluding the Bank of England <sup>21</sup>	82.7%	97.2%	-14.5%	Not yet confirmed – potentially accounting differences

<sup>15</sup> Note that these are only potential reasons we have identified – a full reconciliation of each country's headline indicator to GFS is beyond the scope of this report.

<sup>16</sup> The time periods for the national headline debt measures vary from March 2021 to December 2021, depending on each organisation's reporting cycle.

<sup>17</sup> Source of the Euro area's headline debt: <https://ec.europa.eu/eurostat/documents/2995521/14176362/2-21012022-AP-EN.pdf/4785530c-a1dc-5d07-1e94-acb29d9986a7#:~:text=At%20the%20end%20of%20the,from%2090.9%25%20to%2090.1%25.>

<sup>18</sup> Source of Canada's headline debt: <https://www.canada.ca/content/dam/fin/publications/afr-rfa/2021/afr-rfa-2020-21-eng.pdf>

<sup>19</sup> Source of the United States' headline debt: <https://www.cbo.gov/system/files/2021-02/56970-Outlook.pdf>

<sup>20</sup> Source of Australia's headline debt: <https://budget.gov.au/2021-22/content/myefo/download/myefo-2021-22.pdf>, page 64

<sup>21</sup> Source of the UK's headline debt: <https://www.ons.gov.uk/economy/governmentpublicsectorandtaxes/publicsectorfinance/bulletins/publicsectorfinances/december2021>