Final Report: Strengthening Governance in Mongolia – the Fiscal Stability Council

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This report covers the second component of the SGM 11-002 project to build institutional capacity of the Fiscal Stability Council of Mongolia.

Overview

Introduction and context

The World Bank and European Union are providing financial support and oversight for the Strengthening Governance in Mongolia (SGM) project. The projects aim is to support the efforts of the Government of Mongolia to improve fiscal discipline and public financial management while promoting greater transparency and accountability to strengthened fiscal governance in Mongolia.

A component of this project is seeking to increase the capacity of the recently established Fiscal Stability Council (FSC). The first deliverable of this assignment was an Inception Report which outlined the macroeconomic and fiscal situation facing Mongolia, reviewed the current legislative and operational functioning of the FSC and proposed legislative and operational options to be pursued as part of the Final Report.

This Final Report contains recommendations to build the FSC's capacity over the next few years to establish the FSC as a key fiscal institution within Mongolia's fiscal framework.

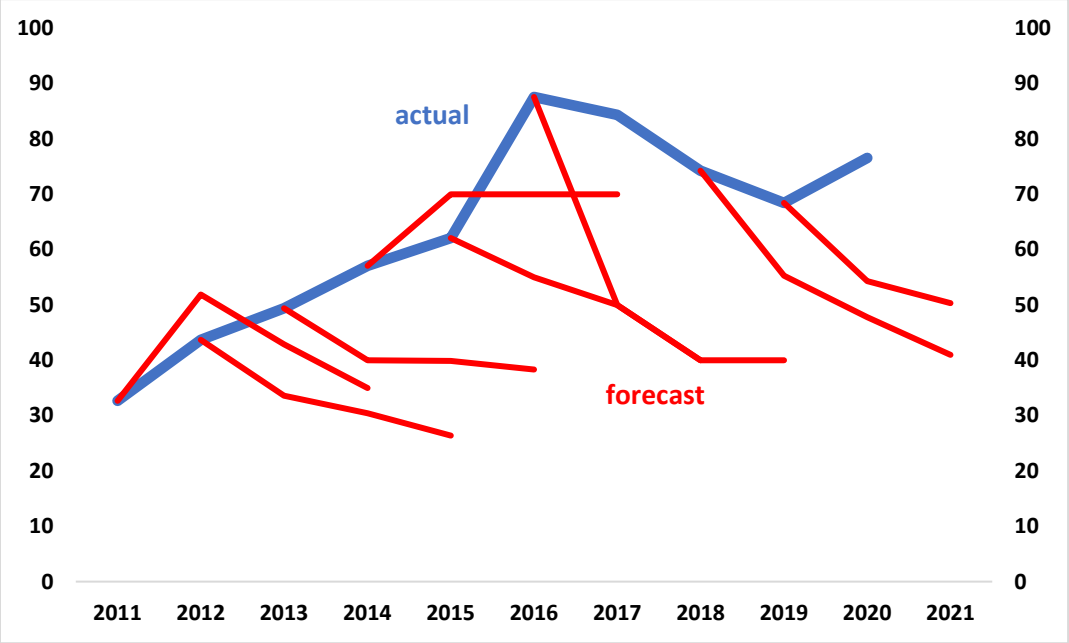
Summary of the issues

The creation of the Fiscal Stability Council (FSC) in 2017 was an important first step to facilitate greater scrutiny, transparency, and accountability of the Government's fiscal performance.

The fiscal experience of the past decade was characterized by over optimistic real and nominal GDP growth forecasts resulting in over optimistic revenue forecasts and strong spending growth particularly in election years. The Government repeatedly failed to meet its own fiscal rules which were designed to prevent the unstable fiscal outcomes that transpired and resulted in the Government requiring support from an IMF Extended Fund Facility program in 2017 to avoid defaulting on its sovereign debt obligations.

Figure A: Government debt – actual and forecast

(per cent GDP)



Source: NSO, 2012-2019 MTFFS.

In response to this situation, the establishment of the FSC was one important fiscal reform. However, since starting operation in late 2018 the FSC has yet to establish itself as an authoritative independent commentator on fiscal issues. There is a clear need for a credible independent institution to promote greater scrutiny and transparency of economic and fiscal developments.

The Mongolian economy is recording a stronger than expected recovery from the impacts of the COVID-19 pandemic mainly supported by strong mineral commodity demand resulting in current buoyant mineral prices.

Despite potential upside to the outlook for the economy and fiscal position in 2021 there are medium-term challenges facing the economy and fiscal position. The Mongolian economy remains narrowly focused with the mining sector comprising a large direct and indirect share of total economic activity. Exports are significantly concentrated in a small number of mineral commodities and Mongolia's exports are almost entirely dependent on China's demand prospects.

Slowing productivity growth, a trend decline in labor force participation and an ageing population will result in a slowing in potential GDP growth. Declining trends in productivity growth and labor force participation raises risks to the sustainability of non-mineral revenues potentially resulting in a growing reliance on volatile mineral revenues while an ageing population will put more pressure on government expenditure.

The creation of the FSC is only the first step in the process to build the organization into an authoritative fiscal authority. Benchmarking the FSC against a synthesis of the OECD's[1] key success factors of Independent Fiscal Institutions suggests the FSC is currently partially meeting some and not meeting several others.

Table A: Key success factors

	Yes	Partial	No
1. Broad political support and institutional credibility			■
2. Clear mandate with legislation clearly state the purpose, core mandate and key functions.			■
3. Independence and non-partisanship		■	
4. Access to information		■	
5. Transparent governance arrangements set out in legislation	■		
6. Adequate resources to meet its mandate, guaranteed from the budget			■
7. Transparency with every report and analysis published in the institution's own name		■	
8. Strong relationship with the media and other fiscal commentators and the public			■
9. A clear role in the budgetary cycle with analytical outputs linked with the annual budget cycle and presented to Parliament within a reasonable time		■	
10. Legal framework and part of a more comprehensive fiscal responsibility law			■

Source: Authors summary of the OECD success factors and the authors rankings.

The future success of the FSC will be based on several key factors – a clearly defined role within the fiscal law, a clear and focused mandate, adequate resourcing to achieve that mandate including attracting and retaining high quality staff and ensuring timely access to important information held by government institutions. The FSC chairman and council members will be responsible for providing the necessary leadership of the FSC's strategy, ensuring the quality of its analysis and reports,

[1] OECD (2014) *Recommendation of the Council on Principles for Independent Fiscal Institutions*.

continuing to deepen relationships with key stakeholders and guiding and mentoring the FSC staff as they develop their technical skills.

The FSC will also require openness and support from its key stakeholders including the Government, the State Great Khural, the Ministry of Finance and the Central Bank of Mongolia.

Approach to this review

This project involved undertaking a review of the establishment and current operations of the FSC and assessing where there are capacity gaps and making recommendations to address these gaps. The analysis benefited from an extensive review of the experiences of other Independent Fiscal Institutions, including a benchmarking exercise against the OECD's framework of key success factors.

The project has also benefited from the productive engagement with the FSC, its members and staff, key stakeholders including the World Bank, the IMF, the Ministry of Finance, and the Central Bank of Mongolia.

The final report attempts to cover all aspects of the assignment including legislative, strategic and operation aspects of the FSC. This report also contains a review of common economic and revenue/expenditure forecasting methodologies accompanied by Excel workbook examples that should help guide the FSC as it develops its forecasting capacity.

Findings and recommendations

Mandate

The FSC's mandate is broad which has the potential to enable the FSC to work on any fiscal and budget issues that the FSC believes is important. However, to focus the FSC's impact a more targeted mandate with clear outputs and points of intervention in the budget cycle appears appropriate at this early stage of the FSC's development.

The Government's fiscal strategy is aimed at macroeconomic stability and budget sustainability as identified in the Fiscal Stability Law. The Fiscal Stability Law also states that the Government's economic and fiscal forecasts that underlie its fiscal strategy should be transparent, accurate, unbiased and compliant with its special fiscal requirements. However, the Government's fiscal strategy over past decade has not met the conditions in the Fiscal Stability Law.

A clear gap in the fiscal framework currently exists for an authority (the FSC) to provide a non-partisan, independent assessment of the Government's economic and fiscal forecasts and to assess compliance with the special fiscal requirements. This role for the FSC is common international practice of other Independent Fiscal Institutions (IFIs).[2]

Further, Mongolia's revenue base is volatile with around 30 per cent of total revenue sourced from volatile mineral commodities. This poses significant risks to the central revenue forecasts. In addition, Mongolia's expenditure performance has also been volatile with expenditure consistently exceeding revenue particularly in election periods. Again, this spending behaviour poses significant risks to the central expenditure forecasts. A clear role for the FSC is to highlight and quantify these risks to improve fiscal governance through increasing transparency of the fiscal forecasts and implication of Government decisions.

[2] Examples include Ireland's Fiscal Council, Portugal's Fiscal Council, Spain's Fiscal Council and Peru's Fiscal Council to name a few.

While there is limited value that the FSC can add in conducting its own forecasts of Government expenditure, the FSC can add considerable value in terms of a detailed examination of the drivers of historical and forecast Government expenditure and publish this information and analysis for parliamentary members and the broader community.

Recommendation 1: The Budget Law and Fiscal Stability Law should be amended to recognize the FSC as a key institution within Mongolia's fiscal framework and strategy. Amending these two laws will enable the FSC to fulfill its mandate to assess the Government's economic and fiscal forecasts. See *Chapter 1 Recommended changes to budget and fiscal legislation* for details.

Recommendation 2: In 2022, the FSC should start its assessments of the Government's economic and fiscal forecasts. The first assessment would be of the 2023 Medium-term Fiscal Framework Statement (MTFFS) economic and fiscal forecasts with a particular focus on the revenue forecasts, including quantifying potential risks to the revenue forecasts. This report should be submitted to the State Great Khural and published on the FSC's website. See *Chapter 2 Fiscal Stability Council Strategic and Operations Plan 2021-2024* and *Chapter 3 An overview of common macroeconomic and fiscal forecasting techniques* for details.

Recommendation 3: Before the end of 2021 the FSC should produce a report examining the drivers of historical and forecast Government expenditure by sectors and functions. See *Chapter 2 Fiscal Stability Council Strategic and Operations Plan 2021-2024* for details.

Resourcing

To credibly meet its mandate to provide independent and non-partisan analysis of the economic and fiscal forecasts and compliance with the special fiscal requirements the FSC will need to boost its analytical staff.

The current allocation of 2 analytical staff is low in comparison with other IFIs.[3] While the FSC can draw on 2 staff members from the Budget Analysis Unit of the Budget Standing Committee these staff only provide the FSC members with information. The current staffing situation means there is currently a large gap in analytical capacity within the FSC.

Recommendation 4: The FSC should seek to increase its analytical staff numbers to at least 5 full-time employees. Ideally 2 of these staff members would be at a senior level having experience in macroeconomic and fiscal forecasting. See *Chapter 1 Recommended changes to budget and fiscal legislation* and *Chapter 2 Fiscal Stability Council Strategic and Operations Plan 2021-2024* for details.

Recommendation 5: The option of offering secondments to experienced Ministry of Finance, Central Bank of Mongolia and other government agency staff should be actively pursued. See *Chapter 2 Fiscal Stability Council Strategic and Operations Plan 2021-2024* for details.

Recommendation 6: The Chairman in his role of managing the operations of the FSC should be responsible for the recruitment of the FSC's staff. See *Chapter 1 Recommended changes to budget and fiscal legislation* for details.

Staff of the FSC will need to develop the skills and tools required to fulfill the FSC's mandate. If the FSC can secure one or two experienced staff as well as hiring several other staff, perhaps early in

[3] From the IMF (2016) database on Fiscal Councils the median number of full-time equivalent staff members is 9. From the OECD (2019) IFI database the median number of full-time staff is 12.

their careers, then this will provide an excellent opportunity for senior staff to develop the knowledge and skills of junior staff.

The FSC has a pro-learning culture with training for the FSC and the Budget Analysis Unit staff to date focusing on the concepts of financial programming, macroeconomic accounts and forecasting methods. It will be important to coordinate and tailor future training and capacity building with the recruitment of new staff and the acquisition of data and forecasting models. The FSC should identify high quality providers of these types of technical services.

Recommendation 7: Continue to seek opportunities for FSC members and staff to build their capabilities on macroeconomic and fiscal forecasting and analysis techniques. A series of seminars initially presented by MoF staff on its forecasting models and approaches would be highly valuable including its approaches to macroeconomic forecasting, revenue and expenditure forecasting and debt projections and its debt sustainability analysis framework. See *Chapter 2 Fiscal Stability Council Strategic and Operations Plan 2021-2024* and *Chapter 3 An overview of common macroeconomic and fiscal forecasting techniques* for details.

Recommendation 8: Continue to draw on opportunities to further strengthen and develop the FSC capacity for macroeconomic and fiscal analysis that is offered by the World Bank, the IMF and potentially the OECD. See *Chapter 2 Fiscal Stability Council Strategic and Operations Plan 2021-2024* for details.

Access to Information

Access to detailed economic and fiscal data will be crucial for the FSC to fulfill its mandate. This can be achieved through provisions in legislation and/or through Memoranda of Understanding between the FSC and government agencies. The FSC's has in place a Memorandum of Understanding (MoU) with the MoF and the BoM. The overall intent of both MoU's is positive in terms of access to some information, mutual sharing of knowledge and analytical work. These working relationships are important to foster and develop and particularly as the analytical capability of the FSC staff grows.

With a more refined mandate the MoU's will need to be redrafted to include more specific information requirements including the latest macroeconomic and fiscal forecasts with agreed timing of these deliverables to enable the FSC to meet its reporting obligations to the State Great Khural.

The current MoUs do not contain any mechanism for when information is refused or where information misses deadlines set by the FSC. A reporting mechanism such as publishing where information has been refused (an example is the Portuguese Fiscal Council) or regularly reporting on the timeliness statistics of information requests (an example is the Australian Parliamentary Budget Office) can prove to be useful in ensuring information is received on time. There is also a need to develop information channels with other government agencies where information is required, in particular, the Mongolian Customs General Administration and Mongolian Taxation Administration.

Recommendation 9: Include in the Fiscal Stability Law amendments the provision for the FSC to obtain all necessary information from government agencies to fulfill its mandate. See *Chapter 1 Recommended changes to budget and fiscal legislation* for details.

Recommendation 10: Redraft the current MoUs to provide for specific information and deadlines for the FSC to be able to fulfill its mandate. See *Chapter 2 Fiscal Stability Council Strategic and Operations Plan 2021-2024* for details.

Recommendation 11: Enter into MoUs with other relevant government agencies.

Transparency

The FSC needs to ensure that it actively promotes transparency through its own actions. All FSC analysis should be provided to the State Great Khural and published on its new website. This would include reports, data, and details of the FSC's methodologies to ensure complete transparency and to build the FSC credibility. Its website should also contain all corporate reporting including strategic plan, annual work plan, member profiles etc. The FSC should also develop and track metrics of its impact and influence.

Recommendation 12: Seek opportunities to engage on the FSC analysis with stakeholders including parliamentarians, analytical peers, and media and develop metrics to access performance. See *Chapter 2 Fiscal Stability Council Strategic and Operations Plan 2021-2024* for details.

Milestones

The following is a summary of the suggested key tasks and outputs that the FSC should aim to accomplish over the period 2021 to 2024. For more detail refer to the respective chapters in this report.

For 2021

- Finalise the recruitment of additional analytical staff.
- Finalise the redrafting of existing MoUs and establish new MoUs with other relevant government agencies.
- Finalise the fiscal (revenue and expenditure) forecasting framework.
- Agree a series of forecasting seminars with the MoF, BoM and where relevant academic and research institutions.
- Produce and publish a report on the factors that have influenced Government expenditure over both recent history and the forecast period.

For 2022

- Produce and publish an assessment report on the 2023 MTFFS focusing on the revenue forecasts.
- Finalise the macroeconomic forecasting model and combine this model with the fiscal forecasting model.
- Produce and publish an assessment of the annual proposed budget.
- Produce documentation of the macroeconomic and fiscal forecasting models.

For 2023

- Produce and publish an assessment report on the 2024 MTFFS focusing on macroeconomic and fiscal forecasts.
- Produce and publish an assessment of the annual proposed budget.

For 2024

- Produce and publish an assessment report on the 2025 MTFFS focusing on macroeconomic and fiscal forecasts.

- Produce and publish an assessment of the annual proposed budget.
- Produce and publish a report on Mongolia's medium to long-term fiscal challenges.
- Produce and publish an evaluation of the FSC's forecasting performance.

Chapter 1: Recommended changes to budget and fiscal legislation

Motivation

In its reviews of the establishment of Independent Fiscal Institutions (IFIs) the OECD identifies that it is important for an IFI to have a legal basis for its establishment. This ensures that key aspects such as mandate, leadership appointments, resourcing and access to information are defined and can protect the IFI from political pressure. Having the legal basis for an IFI contained in fiscal legislation ensures that the IFI is a key institution within a government's fiscal strategy.

In terms of Mongolia's fiscal and budget legislation the Fiscal Stability Council's mandate, role and operations should be included in the Budget Law and the Fiscal Stability Law.

Amendments to the **Budget Law** would provide authority to the Fiscal Stability Council and specify its role in the Budget Calendar.

Amendments to the **Fiscal Stability Law** would specify the Fiscal Stability Council's mandate and operational aspects.

Approach

The starting point is to use the existing legislation of the Charter as many components of the Charter remain relevant.

The mandate for the FSC has been refined and sharpened to focus on two key tasks.

Parts of the existing Charter are best captured in the FSC's Strategic and Operations Plan.

The draft legislation has been informed by a review of legislation of several IFIs.[4]

[4] Australian Parliamentary Budget Office (Parliamentary Service Act 1999), Congressional Budget Office (The Congressional Budget Act 1974), Irish Fiscal Council (Fiscal Responsibility Act 2012), Kenyan PBO (Public Finance Management Act 2012), Lithuania Budget Policy Monitoring Authority (Law on the Implementation of the Fiscal Treaty 2014), Peru Fiscal Council (Strengthening Fiscal Transparency 2013), Portugal Public Finance Council (Budget Framework Law 2011), Slovenia Fiscal Council (Fiscal Rule ACT 2015), South Africa Parliamentary Budget Office (Money Bills Amendment 2018)

Budget Law

Recommended amendments to the Budget Law detailing the role and authority for the Fiscal Stability Council which would be inserted into the current version of the Budget Law.[5]

8 дугаар зүйл.Төсвийн цаглабар

8.1.Засгийн газрын өрийн удирдлагын дунд хугацааны стратегийн баримт бичиг /цаашид “Стратегийн баримт бичиг” гэх/, Дунд хугацааны төсвийн хүрээний мэдэгдлийг дараах цаглабрын дагуу боловсруулж, батална:

/Энэ хэсэгт 2015 оны 02 дугаар сарын 18-ны өдрийн хуулиар нэмэлт оруулсан/

8.1.1.санхүү, төсвийн асуудал эрхэлсэн төрийн захиргааны төв байгууллага Стратегийн баримт бичиг, дунд хугацааны төсвийн хүрээний мэдэгдлийн төслийг боловсруулж, жил бүрийн 4 дүгээр сарын 15-ны дотор Засгийн газарт хүргүүлэх;

/Энэ заалтад 2015 оны 02 дугаар сарын 18-ны өдрийн хуулиар нэмэлт оруулсан/

8.1.X The State Central Administrative Body Responsible for Finance and Budget Matters shall submit all necessary information underlying the draft Medium-term Fiscal Framework Statement’s economic and fiscal forecasts to the Fiscal Stability Council no later than 22nd of April of each year.

8.1.2.Засгийн газар Стратегийн баримт бичиг, дунд хугацааны төсвийн хүрээний мэдэгдлийн төслийг хэлэлцэн жил бүрийн 5 дугаар сарын 01-ний дотор Улсын Их Хуралд өргөн мэдүүлэх;

/Энэ заалтад 2015 оны 02 дугаар сарын 18-ны өдрийн хуулиар нэмэлт оруулсан/

8.1.X The Fiscal Stability Council shall submit its assessment of the Medium-term Fiscal Framework Statement economic and fiscal projections to the State Great Khural no later than the 8th of May of each year.

8.1.3.Улсын Их Хурал Стратегийн баримт бичиг, дунд хугацааны төсвийн хүрээний мэдэгдлийн төслийг жил бүрийн 6 дугаар сарын 01-ний дотор хэлэлцэж, батлах;

/Энэ заалтад 2015 оны 02 дугаар сарын 18-ны өдрийн хуулиар нэмэлт оруулсан/

8.1.4.Улсын Их Хурал Стратегийн баримт бичиг, дунд хугацааны төсвийн хүрээний мэдэгдлийг баталснаас хойш ажлын долоон өдрийн дотор хэвлэн нийтлэх.

/Энэ заалтад 2015 оны 02 дугаар сарын 18-ны өдрийн хуулиар нэмэлт оруулсан/

8.1.X. The Fiscal Stability Council shall publish its assessment of the Medium-term Fiscal Framework Statement economic and fiscal forecasts following publication of the approved Medium-term Fiscal Framework Statement.

[5] The latest Mongolian version of the Budget Law was downloaded from legalinfo.mn on 9 August 2021.

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8.4.Тухайн жилийн улсын төсөв, Нийгмийн даатгалын сангийн төсөв, Эрүүл мэндийн даатгалын сангийн төсвийг дараах цаглабрын дагуу боловсруулж, батална:

/Энэ хэсэгт 2015 оны 01 дүгээр сарын 29-ний өдрийн хуулиар нэмэлт оруулсан/

/Энэ хэсэгт 2016 оны 01 дүгээр сарын 22-ны өдрийн хуулиар нэмэлт оруулсан./

/Энэ хэсэгт 2016 оны 02 дугаар сарын 05-ны өдрийн хуулиар өөрчлөлт оруулсан/

/Энэ хэсэгт 2019 оны 11 дүгээр сарын 13-ны өдрийн хуулиар өөрчлөлт оруулсан./

8.4.1.төсвийн төвлөрүүлэн захирагчид харьяалагддаг төсвийн шууд захирагч нь жилийн төсвийн төслөө жил бүрийн 7 дугаар сарын 25-ны дотор харьяалах төсвийн төвлөрүүлэн захирагчид хүргүүлэх;

8.4.2.төсвийн төвлөрүүлэн захирагч, төсвийн төвлөрүүлэн захирагчид харьяалагддаггүй төсвийн шууд захирагч жил бүрийн 8 дугаар сарын 01-ний дотор жилийн төсвийн төслөө харьяалагдах төсвийн ерөнхийлөн захирагчид хүргүүлэх;

8.4.3.төсвийн ерөнхийлөн захирагч жилийн төсвийн саналаа жил бүрийн 8 дугаар сарын 15-ны дотор санхүү, төсвийн асуудал эрхэлсэн төрийн захиргааны төв байгууллагад хүргүүлэх;

8.4.4.санхүү, төсвийн асуудал эрхэлсэн төрийн захиргааны төв байгууллага энэ хуулийн 8.4.3-т заасан жилийн төсвийн саналыг нэгтгэн боловсруулж, жил бүрийн 9 дүгээр сарын 15-ны дотор Засгийн газарт өргөн мэдүүлэх;

8.4.X The State Central Administrative Body Responsible for Finance and Budget Matters shall submit all necessary information underlying the annual budget proposal to the Fiscal Stability Council no later than 22nd of September of each year.

8.4.5.Засгийн газар жилийн төсвийн төслийг жил бүрийн 10 дугаар сарын 01-ний дотор Улсын Их Хуралд өргөн мэдүүлэх;

8.4.6.Засгийн газар жилийн төсвийн төслийг Улсын Их Хуралд өргөн мэдүүлснээс хойш ажлын гурван өдрийн дотор нийтэд мэдээлэх;

8.4.X The Fiscal Stability Council shall submit its assessment of the annual budget proposal to the State Great Khural no later than the 15 of October of each year.

8.4.7.төрийн аудитын төв байгууллага жилийн төсвийн төслийн талаарх дүгнэлтийг Улсын Их Хуралд жил бүрийн 10 дугаар сарын 15-ны дотор хүргүүлэх;

8.4.8.Улсын Их Хурал жилийн төсвийн төслийг хэлэлцэн жил бүрийн 11 дүгээр сарын 15-ны дотор батлах.

8.4.X. The Fiscal Stability Council shall publish its assessment of the annual budget proposal following approval of the annual budget proposal by the State Great Khural.

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12[1] дүгээр зүйл.Үндэсний хөгжлийн асуудал эрхэлсэн төрийн захиргааны байгууллагын бүрэн эрх

12[1].1.Үндэсний хөгжлийн асуудал эрхэлсэн төрийн захиргааны байгууллага дараахь бүрэн эрхийг хэрэгжүүлнэ:

12[1].1.1.улсын эдийн засаг, нийгмийг хөгжүүлэх үндсэн чиглэлийн төслийн талаар санал, дүгнэлт боловсруулж, санхүү, төсвийн асуудал эрхэлсэн төрийн захиргааны төв байгууллагад хүргүүлэх;

12[1].1.2.улсын хөрөнгө оруулалтын хөтөлбөрийн төсөл боловсруулах.

/*Энэ зүйлийг 2016 оны 07 дугаар сарын 21-ний өдрийн хуулиар нэмсэн*/

Article X. Authorities of the Fiscal Stability Council [check placement]

1X.1. The Fiscal Stability Council has the following authorities:

1X.1.1. Assess the economic and fiscal projections reflected in the Government's Medium-term Fiscal Framework Statement and annual budget proposal;

1X.1.2 Assess whether the Government will meet the special fiscal requirements based on the Fiscal Stability Council's assessment of the Medium-term Fiscal Framework Statement and annual budget proposal;

1X.1.3. Obtain necessary information from the State Central Administrative Body Responsible for Finance and Budget Matters and other bodies in order to exercise authorities defined in this Law.

14 дүгээр зүйл.Төсвийн ерөнхийлөн захирагч, түүний бүрэн эрх

14.1.Дараах албан тушаалтан төсвийн ерөнхийлөн захирагч байна:

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Fiscal Stability Law

Recommended draft section detailing the Fiscal Stability Council – its mandate and operations – to be inserted into the Fiscal Stability Law.

CHAPTER X

1. Fiscal Stability Council

1.1. There shall be a body to be known as the Fiscal Stability Council (hereafter referred as "Council"), to regulate relations pertaining to oversight of implementation of the Fiscal Stability Law and ensuring fiscal stability.

1.2. The Council shall conduct independent reviews and analysis on fiscal policies, issue assessments based on reviews and analysis conducted and to provide support to operation of the Budget Standing Committee of the State Great Khural.

1.3. The Council shall provide the public with information about the fiscal situation through publishing its assessments and analysis in order to inform them of impacts of budget and financial decisions and it shall ensure fiscal and financial transparency.

1.4. The Council may have a logo symbolizing its functional features and shall use a seal and letterhead.

2. Operational principles of the council

2.1.The Council shall be guided by the principles of its independence, transparency, autonomy, non-proliferation, ensuring fiscal stability, safeguarding public rights and legitimate interests, and considering matters freely and adopting a decision by majority members.

3. Mandate of the council

3.1. The Council shall carry out the following mandate:

3.1.1. to review the economic and fiscal projections contained in the Medium-term Fiscal Framework Statement and annual budget proposal submitted to the State Great Khural of Mongolia and issue an assessment to the State Great Khural.

3.1.2. as part of its review of the Medium-term Fiscal Framework Statement assess whether the Government will meet its special fiscal requirements. This assessment should include:

(a) whether the Government will meet the special fiscal requirements,
(b) whether conditions for temporary suspension exist or have ceased to exist,
(c) whether, while in a temporary suspension, the forecasts indicate adequate progress towards meeting the special fiscal requirements.

3.1.3. conduct reviews and analysis on draft legislative acts pertaining to the draft annual budget, draft supplementary budget, and economic and social development guidelines

within 15 days upon their submission and shall present its conclusions to the relevant Standing committees of the State Great Khural.

3.1.4. to conduct reviews and analysis on specific topics at a request of the relevant Standing Committees of the State Great Khural, if necessary, and issue respective conclusions.

3.1.5 to conduct, at its own initiative, research on and analysis of economic issues, the budget and fiscal policy settings.

3.2. The Council may inform the public on conclusions and assessments made and provide explanations after 7 working days upon submission of its conclusions and assessments to the relevant Standing committee of the State Great Khural.

4. Communications with the State Great Khural and the Budget Standing Committee

4.1. The Council shall provide the State Great Khural and it's the Budget Standing Committee with conclusions and assessments based on reviews and analysis as stipulated in the Council's mandate.

4.2. Where the Council identifies a significantly different assessment to the Government's economic and fiscal projections where the compliance with the special fiscal requirements may not be met the Budget Standing Committee of the State Great Khural will seek a written response from the Government.

5. Obtaining information

5.1 The Council may obtain all necessary information from the State Central Administrative Body Responsible for Finance and Budget Matters, the Central Bank of Mongolia and other state bodies in order to fulfill its mandate.

5.2. The Council shall establish a memorandum of understanding (hereafter referred to as "Memorandum") on cooperation with the State Central Administrative Body Responsible for Finance and Budget Matters, the Central Bank of Mongolia and other state bodies to reflect responsibilities, specify information, timeframes and other relevant details.

6. Procedure and quorum

6.1. Subject to this Law, the Council may regulate its own procedures (including quorum).

7. Appointments of the Council Chairman and its Members

7.1. The Council shall consist of a chairman and 8 part-time members.

7.2. The Council shall be composed of two candidates nominated by the Budget Standing Committee of the State Great Khural, two candidates nominated by the Government, two candidates nominated by the Central Bank of Mongolia and 3 candidates for independent members selected through open competitive selection process by the Secretariat of the Budget Standing Committee of the State Great Khural. The Budget Standing Committee of the State Great Khural shall confirm and appoint members of the Council.

7.3. If the Budget Standing Committee of the State Great Khural does not appoint the nominee, then the respective body, which nominates the respective candidate as stipulated in provision 8.2, shall nominate a replacement candidate within 14 working days.

7.4. A chairman of the Council shall be selected from among the Council members. A member shall be appointed by majority votes at a Council meeting as a Chairman of the Council.

7.5. It shall prohibit to nominate and appoint a person holding political position as a Chairman and a member of the Council.

7.6. The Chairman and members of the Council shall meet the following requirements:

7.6.1. hold a bachelor's degree in economics and finance and at least 15 years of relevant work experience or served as the Prime Minister of Mongolia, a Member of the Government- the Finance Minister and the Governor of the Mongolbank.

7.6.2. no overdue debt related to loan, guarantee and or warranty agreement;

7.6.3. no ethical and reputational adverse effects on operations of the Council;

7.6.4. no criminal record.

8. Appointment terms for the Chairman and members of the Council

8.1. The Chairman and members of the Council shall be appointed for a term of 4 years renewable once.

8.2. The Budget Standing Committee shall relinquish the Council chairman and other members from duties on the following grounds:

8.2.1. the appointment term expires;

8.2.2. unable to perform his or her duties due to poor health and other respective reasons;

8.2.3. If the relevant Standing committee considers him or her for not being able to perform his or her duties properly, by majority of the quorum of the committee meeting;

8.2.4. at his or her request to get released from duties.

8.3. The body, who initially nominated the Council member and chairman shall submit a request on relinquishment from duties on the grounds stipulated in provision 9.2.

9. Guarantee for Council operations

9.1. It is prohibited to terminate the appointment of the Council chairman and members for any other reason except stipulated in provision 9.2.

9.2. The Council chairman shall be paid remuneration. Other members of the Council shall be paid incentives in line with assignments completed.

9.3. Draft Council budget shall be considered together with the budget of the State Great Khural at a meeting of the Budget Standing Committee.

10. Council operations and staff

10.1 The Chairman of the Council is responsible for managing the operations of the Council and must report to the Budget Standing Committee in relation to the Council's operation and administration.

10.2 In managing the operations of the Council the Chairman's duties include but are not limited to the development of the strategic and operations plan, the annual report, the annual budget, managing the information requirements of the Council, defining the communications strategy, recruiting and managing the secretariat and office staff and engaging with the Budget Standing Committee.

Council Secretariat

10.3 The Council shall have a secretariat, which has duties and responsibilities to provide the Council members with analytical support in order to meet its mandate. The secretariat will also provide professional support for the operations of the Council.

10.4 The Secretariat shall have at least 7 staff.

10.5. The analytical unit under the Budget Standing Committee of the State Great Khural shall support the Council and Secretariat and provide it with information and data.

10.6. The Council may hire independent professional nongovernmental organization or experts to conduct reviews and analysis, as it deems necessary.

Chapter 2: Fiscal Stability Council Strategic and Operations Plan 2021-2024

Introduction

The Fiscal Stability Council (FSC) was established in 2017 to provide independent analysis of the Government's fiscal strategy and outlook. The FSC has been operating since late 2019. This is the FSC's first strategic and operations plan and is aimed at providing an overview of our purpose and objectives while providing details as to our key development priorities and outputs over the period 2021-24.

Our Mandate

The FSC's mandate is to provide an independent review of the executive's proposals of the annual budget, medium-term fiscal framework, and socio-economic development guidelines, and draft laws pertaining to the budget and finance submitted to parliament. Within the broad scope of our mandate the FSC is focusing on two priority areas for the next 2 years:

- To provide an assessment of the Medium-term Fiscal Framework Statement and annual budget proposal forecasts.
- To provide an assessment of whether the Government will meet its special fiscal requirements.

This focus for the next 2 years will also direct our development priorities in terms of building staff capabilities and analytical frameworks.

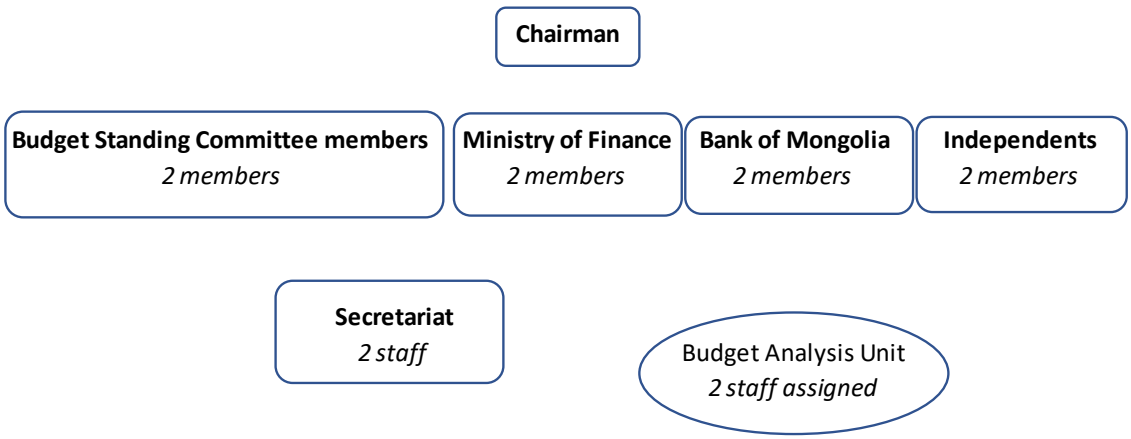
Our Purpose

To provide non-partisan, independent analysis and drive transparency on fiscal issues to support fiscal stability

Our Objectives and Actions				
Objective	Our reports are insightful and respected	Our staff are capable and well-resourced	Our analytical frameworks are best practice	We have deep working relationships with stakeholders
Actions	Our reports contain analysis that carefully scrutinizes the MTFFS and annual budget forecasts Our reports increase the transparency of the forecasts and provide a clear narrative Potential risks and uncertainties to the forecasts are quantified and explained Our reports led to informed decision making and fiscal stability	Our staff ensure our analysis is grounded in the insights from data and best practice analytical frameworks We ensure training is a high priority for staff development We encourage staff to develop deep network with their analytical peers	Our forecasting models are best practice Our forecasting models and frameworks are documented and published Our forecasting models and frameworks are peer reviewed We update our forecasting models as the economy evolves	Our analysis is responsive to the needs of the State Great Khural We have several MoUs with other institutions Our website contains our analysis We actively engagement with the media We actively engage in broader forums related to economic and fiscal issues

Our Deliverables			
Analyze the Government's macro-fiscal forecasts	Assess the Government's compliance with its special fiscal requirements	Analyze medium-term economic and fiscal challenges	Analyze short-term economic and fiscal issues
Assess the macroeconomic forecasts and discuss uncertainties and risks Assess the fiscal forecasts including quantifying the impact of macroeconomic risks on the revenue outlook We report and publish our analysis to inform the budget debate	Assess whether the fiscal forecasts are likely to comply with the fiscal rules Assess the risks to the central forecasts We report and publish this analysis to inform the budget debate	Assess drivers of potential economic growth and likely developments over the medium term Highlight the implications of changes in potential economic growth for fiscal stability Assess trends in the revenue base (mining and non-mining) to inform budget stability Assess trends in the expenditure base to inform budget stability	Undertake other analysis as requested by the Budget Standing Committee

Our current structure



Operation plan for 2021-22	
Priorities for 2021-22	How
Strengthen the Fiscal Stability Council's role	Submit new legislation pertaining to mandate, function and organizational changes of the Fiscal Stability Council for inclusion in the fiscal reform process. Ensure additional funding for the FSC to meet its mandate.
Produce reports that provide insights into economic and fiscal issues	Issue a report on the 2023 MTFFS examining the macroeconomic and fiscal forecasts using the FSC's newly developed models. Assess the plausibility of the revenue forecasts with a particular focus on the mining revenue forecasts and sensitivities to changes in mineral export volumes and prices. Provide a detailed breakdown of the components of forecast expenditure. Issue a report on the 2023 annual Budget.
Build the capability of our members and staff	Organize secondments of experienced analytical staff from other institutions, including the Ministry of Finance and Central Bank of Mongolia, to embed the macroeconomic and fiscal forecasting and analytical models and frameworks. Recruit additional analytical staff. Provide training (see staff development below) for members and staff on macroeconomic and fiscal forecasting concepts and forecasting approaches. Provide detailed handover of the macroeconomic forecasting model developed by an external consultant (see Develop our modelling and analytical frameworks section).
Develop and maintain our modelling and analytical frameworks	Issue and manage a contract for an external consultant to build a macroeconomic forecasting model. Develop a framework for producing alternative revenue scenarios based on different macroeconomic assumptions and forecasts. Implement best practice protocols for database and model management. Develop a methodology for assessing and reporting on the accuracy of our forecasts.

Develop and maintain strong working relationships and communication of our work	Complete the FSC's website by the end of 2021. The website will be used to publish our analytical work, corporate information and regular reporting on our website. Publish our reports. Encourage feedback and comment from the economics and fiscal policy community. Extend existing MoUs and develop new MoUs with other government agencies. Organize seminars with analytical staff of the Ministry of Finance and Central Bank of Mongolia.

Operation plan for 2022-23	
Priorities for 2022-23	How
Produce reports that provide insights into fiscal issues	Issue a report on the 2024 MTFFS examining the macroeconomic and fiscal forecasts. Assess the plausibility of the macroeconomic forecasts using latest information, a review of consensus forecasts and the FSC's own macroeconomic forecasting model. Assess the plausibility of the revenue forecasts with a particular focus on the mineral revenue forecasts and sensitivities to changes in commodity export volumes and prices. Provide a detailed breakdown of the components of forecast expenditure. Issue a report on the 2024 annual Budget.
Build the capability of our members and staff	Utilize ongoing assistance from international partners, including the World Bank and IMF, to continue to build on the capacity of the FSC.
Develop and maintain our modelling and analytical frameworks	Review the performance of the FSC's forecasting model(s) and make appropriate changes which are documented and peer reviewed. Ensure ongoing best practice for database and model(s) management
Develop strong working relationships and communication of our work	Publish reports. Encourage feedback and comment from the economic and fiscal policy community. Review the performance of the MoUs assessing timeliness and access to data. Publish these results. Track references to the FSC's work in the State Great Khural, media and website downloads.

Operation plan for 2023-24	
Priorities for 2023-24	How
Produce reports that provide insights into fiscal issues	Issue a report on the 2025 MTFFS examining the macroeconomic and fiscal forecasts. Assess the plausibility of the macroeconomic forecasts using latest information, a review of consensus forecasts and the FSC's own macroeconomic forecasting model. Assess the plausibility of the revenue forecasts with a particular focus on the mineral revenue forecasts and sensitivities to changes in commodity export volumes and prices. Provide a detailed breakdown of the components of forecast expenditure. Issue a report assessing the forecast performance of the FSC's macroeconomic and revenue forecasts as produced in the FSC's assessment of the 2024 MTFFS. Issue a report on the 2025 annual Budget. Issue a report that investigates the medium to long-term challenges facing the Mongolian economy and fiscal implications.
Build the capability of our members and staff	Provide ongoing training for members and staff on the macroeconomic and fiscal forecasting concepts and forecasting approaches to ensure skills are up to date.
Develop our modelling and analytical frameworks	Maintain and improve on existing models. Ensure ongoing best practice for database and model management.
Develop strong working relationships and communication of our work	Publish reports. Encourage feedback and comment from the economics and fiscal policy community. Review the performance of the MoUs assessing timeliness and access to data. Publish these results. Track references to the FSC's work in the State Great Khural, media and website downloads.

Challenges and risks

Over the period ahead the FSC faces several challenges in building towards meeting our objectives and deliverables. Our main challenges include:

- Our proposed legislative and organizational changes are not prioritized by the Government and the State Great Khural.
- We are unable to recruit and retain analytical staff that are experienced in macroeconomic and fiscal forecasting and analysis.
- Our access to information held by government institutions is not timely or it is limited in its scope.

With the cooperation of the Government, the State Great Khural and government institutions the FSC should be able to meet these challenges.

Possible structure to the FSC's MTFFS assessment report

The Fiscal Stability Council's assessment of the *[year]* Medium-term Fiscal Framework Statement

Key points

….summary of key findings….

Introduction

One main role of the Fiscal Stability Council is to assess the macroeconomic and fiscal forecasts that underlie the Government's budget. This report represents the FSC's detailed analysis and assessment of the *[year]* MTFFS.

Summary of the *[year]* MTFFS forecasts

…..brief description of the forecasts including any points of interest….

The FSC's forecasting framework and model(s) [a detailed description should be in an appendix]

….brief description of the macroeconomic model….

….brief description of the revenue/expenditure model(s)….

The FSC's macroeconomic forecasts and comparison with the MTFFS

….discuss similarities and differences and why (key judgements)….

….discuss risks to the central forecasts and potentially quantify (export volumes, prices, mining investment)….

The FSC's revenue/expenditure forecasts and comparison with the MTFFS

….discuss similarities and differences (typically any difference in expenditure forecasts would be expected to be minimal) and why (key judgements)….

….provide detailed revenue forecasts to increase transparency….

….discuss risks to the central revenue forecasts and quantify these risks (mining revenues, other major revenue items)….

To illustrate the risks to mining revenue quantify the impact that different export volumes and prices for major minerals have on mining revenues (refer Table 7 page 19 of the 2022 MTFFS and the Exports of goods workbook developed as a component of this project)

…..determine the balance of risks…..

….discuss differences in fiscal balance and debt measures….

Assessment as to whether the special fiscal requirements will be met

….including discussion of macro-fiscal forecasts and where the balance of risks lies and implications for the central forecasts (the central forecasts may suggest compliance; however, the balance of risks suggest in this instance wouldn't be met)….

Possible structure to the FSC's Expenditure trends report

Developments in government expenditure – an examination of historical trends and the latest forecasts

Key points

….summary of key findings….

Introduction

One main role of the Fiscal Stability Council is to assess developments in the fiscal situation and to provide greater transparency to improve the understanding of the fiscal position and outlook.

Historical developments

…..description of the trends in government expenditure including recurrent and capital, growth and per cent of GDP….

Explain the major movement in expenditure

…by function, by program and by capital…

…identify the impact of new policies…

…where possible identify large capital projects…

…identify the impact of key economic developments where spending has been influenced by indexation, population growth, ageing, other…

…identify off budget spending…

Explain the outlook

Use the Government's latest expenditure forecasts to describe the outlook for expenditure

…by function, by program and by capital…

…identify the impact of new policies on forecast expenditure…

…identify the impact of key economic developments on forecast expenditure …

…plans for off budget spending…

Notes:

(1) To effectively contribute to the understanding of why expenditure has grown over time the FSC will need to request detailed expenditure data from the Ministry of Finance and potentially other government agencies. The detailed information will include:

Expenditure by function – historical and forecast

Expenditure by major programs of spending e.g., social security, age pension, health programs, major capital investment – historical and forecast

Details of off budget spending – historical and forecast

The costs of historical new spending policies that were added to the expenditure – historical and forecast. The Budget Law 6.2.4 states that 'Any decisions made by the President of Mongolia, the

State Great Khural of Mongolia, self governing body of the local government, the Government or Governor **shall be based on the assessment of its impact on the budget**'.

This means that there should at the very least be costings of the budget impact of new spending decisions held by the Ministry of Finance.

(2) Excellent examples of this type of analysis can be found in:

Australian PBO (2013) *Australian Government spending – Part 1: Historical trends from 2002-03 to 2012-13*

Australian PBO (2014) *Projections of Government spending over the medium term*

Australian PBO (2015) *Medicare Benefits Schedule – Spending trends and projections*

Australian PBO (2020) Jobseeker payment; Understanding economic and policy trends affecting Commonwealth expenditure

World Bank (2018) Mongolia – Growing without undue borrowing

OBR (2019) *Welfare trends report – December 2019*

A key focus in 2021-22 is to build capability

The FCS has embarked on a process to build its capabilities in 2021-22 to work towards the full achievement of its objectives. There are two main capability development streams the FSC is focused on.

Staff development

The FSC needs to increase its analytical staff to meet its objectives and deliverables. The FSC needs additional funding to recruit staff. The FSC should expand from the current 2 full-time employees to at least 5 full-time employees in 2021-22. For the FSC to be prepared to undertake a detailed assessment of the 2023 MTFFS and annual Budget the option of seconding experienced staff from other institutions, including the Ministry of Finance and the Central Bank of Mongolia, should be actively pursued.

The FSC also has in place a training program to build the capabilities of current and future staff. Training should be focused on macroeconomic and fiscal forecasting concepts and techniques. This training will build and supplement the skills of the FSC staff to undertake the analysis of the Government's macroeconomic and fiscal forecasts.

The first stage of the training should provide FSC members and staff with a baseline understanding of the approaches to macroeconomic and fiscal analysis and forecasting. This training will provide staff with a good understanding for when the macroeconomic forecasting model is completed (refer below). Training on the macroeconomic forecasting model should be focused on the structure of the model, the key econometric equations, fiscal and monetary policy specifications, and how to operate and update the model for new data and if required change the model structure.

For the first stage of training, I have attached some examples of training I have conducted in the past on macroeconomic and revenue forecasting that have proven to be useful for participants in building a baseline understanding of the concepts and approaches. Once staff are familiar with these concepts then more intensive and direct model training will be required.

On this point, the development of a macroeconomic and fiscal forecasting model will be undertaken by an external consultant. Once the model is developed and the FSC has more analytical staff it will be crucial that staff extract the most information from the model training. This is important in terms of the sustainability of the model. FSC staff will need to know and be able to update and change the model. The key objective is to avoid being reliant on the consultant who developed the model.

Other forms of assistance

Once staff are recruited it will be important to continue to utilize the expertise of the World Bank and IMF to continue to build technical capabilities. In particular, the IMF provides capacity development to both Ministry of Finance staff and IFI staff. A focused capacity development mission would yield significant gains in terms of FSC staff capabilities and provides an important peer review of models.

While Mongolia is not a member of the OECD there are plans for the OECD to establish an OECD Asian Parliamentary Budget Officials Network in 2022. This would build off the successful OECD Network of Parliamentary Budget Officials and Independent Fiscal Institutions which was established in the late 2000s. The proposed membership includes the Korean National Assembly Budget Office (NABO), the Philippines Congressional Policy and Budget Research Department (CPBRD), the Japan Research Office of the Committee on Budget in the House of Councilors, the Thailand Parliamentary

Budget Office, and the Cambodian Parliamentary Budget Office. Myanmar and Laos may also participate as they are in discussions to establish an IFI.

I have spoken to the OECD organizer Mr Scott Cameron, scott.cameron@oecd.org, and he is very interested as to whether the Mongolian FSC would consider participating. I would recommend the Chairman contacts Mr Cameron to discuss the proposed network and the FSC's possible participation. The proposal is currently seeking funding to hold its first event in 2022.

Model development

The development of potential macro-fiscal forecasting model(s) is currently spread across three different work streams:

- A component of this project will prepare an example of a macroeconomic and revenue/expenditure forecasting framework.
- A project is currently underway to develop tools on macro-fiscal debt analysis based on the financial programming framework.
- A consultancy which is developing a macroeconomic forecasting model.

These three work streams should be brought together to maximize the synergies of each.

In terms of the development of a macroeconomic forecasting model I would make the following broad observations:

- The specific requirements of the model should be clearly defined. Critically the model should produce short to medium-term macroeconomic forecasts.
    - The model should produce forecasts of both real and nominal variables to be able to forecast revenue items.
    - The type of nominal variables required will be determined by the design of the revenue forecasting model. A detailed revenue forecasting model that uses specific revenue proxy bases will need nominal components of both expenditure and income GDP. In contrast, a revenue forecasting model that only uses nominal GDP (or non-mining nominal GDP) as a revenue proxy base will mean the macroeconomic model can potentially be less detailed.
    - Export volumes and prices should be disaggregated into the major mineral commodities (e.g., copper, coal, iron ore, oil, gold).
    - The frequency of the model (whether quarterly or annual) will need to be decided. For estimation purposes a quarterly model may be more appropriate to obtain robust results particularly given the short period of real annual GDP data. This decision may be guided by the models used by the MoF.
    - The software used to nest the model should be accessible to most FSC staff and the model should be reasonably easy to change. Excel is a universally known software package. EViews may be required, particularly if there is advanced estimation needed and to test the robustness of the estimated equations, but then it will be important to have some staff familiar with using EViews.
    - Ensure that the model is adopted by FSC staff and that they are comfortable using, updating and if necessary, changing the model.

- The advantage of the FSC developing a macroeconomic forecasting model now is that the Ministry of Finance has been through the process and maintains a macroeconomic forecasting model to produce the forecasts that underpin the MTFFS. The FSC should request this model to help inform its own model development.

Accessing information

The recommended mandate requiring the FSC to undertake a detailed assessment of the economic and fiscal forecasts will require significantly more information from the Ministry of Finance (MoF). The recommended legislative drafting pertaining to the information gathering powers of the FSC should enable the FSC to obtain this increase volume of information in a timely manner. However, redrafting parts of the existing memorandum of understanding (MoU) with the MoF should also be a priority.

The existing MoU contains an important agreement between the two parties in terms of mutual exchange of information and knowledge. To gain access to the specific information required by the FSC to undertake a rigorous assessment of the economic and fiscal forecasts will require greater specificity about the information that is required and the deadlines for provision of this information than is currently contained in the existing MoU.

Information requirements

This section contains the information that will be required to undertake an in-depth analysis of the economic and fiscal forecasts underlying the MTFFS and annual budget.

Macroeconomic information

(Annual frequency may be sufficient)

- Real GDP production forecasts by sector over the period 2021 to 2024
- Real GDP expenditure forecasts by component over the period 2021 to 2024
- Nominal GDP forecasts by component over the period 2021 to 2024
- Export volumes and USD price forecasts of the major export commodities (copper, coal, iron ore, gold, oil) over the period 2021 to 2024
- The structural USD price forecasts of the major export commodities (copper, coal, iron ore, gold, oil) over the period 2021 to 2024
- Exchange rate forecast over the period 2021 to 2024

Revenue information

(Annual frequency may be sufficient)

- Detailed revenue forecasts by totals (total revenue and grants, total structural revenue) and major items (corporate income tax, personal income tax, social security contributions, property tax, VAT, Excise tax, tax on foreign trade, other tax, non-tax revenue) over the period 2021 to 2024
- Mining revenue (by mineral) historical and forecasts over the period 2021 to 2024

Expenditure information

(Annual frequency may be sufficient)

- Total expenditure and net lending forecasts over the period 2021 to 2024
- Current expenditure and detailed components (wages and salaries, other income, subsidies and transfers, interest payments) forecasts over the period 2021 to 2024
- Capital expenditure forecasts over the period 2021 to 2024

- Other lending and repayments forecasts over the period 2021 to 2024
- Transfers to SOEs over the period 2021 to 2024

Debt and fund information

(Annual frequency may be sufficient)

- Government debt (foreign and domestic) forecasts over the period 2021 to 2024
- Forecast interest rates on foreign and domestic debt over the period 2021 to 2024
- Forecasts of the inflows, withdraws and balance of the Fiscal Stabilization Fund and the Future Heritage Fund over the period 2021 to 2024

In addition to the provision of the above information as the FSC builds its analytical staffing and develops its own forecasting and analytical models the Ministry of Finance should offer to present a series of seminars to explain their approaches to macroeconomic forecasting and revenue, expenditure and debt forecasting. This seminar series could be supplemented with seminars from the Central Bank of Mongolia.

Ideally the sharing of forecasting and analytical models would also occur promoting a peer review relationship.

This type of engagement between the analytical staff of the FSC, MoF and BoM would be consistent with the spirit of the agreed MoUs between the various parties. This engagement would likely be one-way at the beginning with the FSC staff learning from the MoF and BoM staff. However, over time this relationship will mature to a broader sharing of analytical developments.

Possible template for information requests

REQUEST FOR INFORMATION BY THE FISCAL STABILITY COUNCIL **Page 1 of 2**	
1. Information Request Reference Number:	
2. Request submitted to:	Ministry of Finance
3. Date request submitted:	
4. FSC Contact Officer for this request:	
5. Is this request routine or urgent?	

6.	**Description of request:**

REQUEST FOR INFORMATION BY THE FISCAL STABILITY COUNCIL **Page 2 of 2**	
7.	**Description of the specific information and/or data that is requested:**
8.	**How does the request relate to the work and mandate of the FSC?**
9.	**Date information required by:**
10.	**Request cleared by:**

Monitoring and evaluating performance

The FSC should develop an evaluation strategy to measure its influence and impact. Given the nature of the work performed by IFIs this is more difficult than say a policy department which is tasked with the production of the annual budget. However, IFIs have developed processes and measures on which to assess their performance.

A number of IFIs are subject to formal external reviews which in some cases are contained in legislation e.g., the Australian PBO is formally reviewed by an external party every 3 years. The OECD has conducted reviews of several its member country IFIs. Any external review of the FSC would be some years away once the FSC has fully established itself.

Peer review of an IFIs work has become a popular mechanism e.g., Australia and Canada. Peer review typically consists of a number of qualified individuals external to the IFI reviewing reports and/or analytical modelling. This has the benefit of improving the quality of the analysis by drawing on expertise external to the IFI. This approach should be considered by the FSC as it develops its

analytical models and starts to produce reports that contain detailed quantitative analysis. The FSC's assessment reports of the MTFFS and the budget proposal should not be externally reviewed as there will be no time for this to occur. It is likely that discussions will occur between the FSC and MoF as part of the assessment process which would act as a quasi-review of the FSC's assessment. Further, the FSC will have already had external review of its models and analytical frameworks used to undertake its assessments.

Review by analytical staff within the MoF and BoM could be an important mechanism for deepening the relationships between the respective organizations. These types of discussions of an analytical nature in no way would compromise the independence of the FSC and its analysis.

There are a number of other measures (both qualitative and quantitative) that IFIs have adopted to assess their performance including:

1. Seeking feedback from key stakeholders in the parliament, the media and the analytical community through surveys.
2. Seeking feedback from other agencies in terms of the performance of the MoUs and broader working arrangements.
3. Tracking references to reports and analysis in the parliament.
4. Tracking references to reports and analysis in the media (including social media).
5. Tracking downloads and hits to their website.
6. Reviewing their forecasting performance on an annual basis and publishing the results.

These activities should all be adopted by the FSC as a means to assess its performance. The measures 1-5 could be compiled and presented in the FSC's annual report while measure 6 would be a standalone report published annually.

Chapter 3: An overview of common macroeconomic and fiscal forecasting techniques

This section provides an overview of common techniques used in developing macroeconomic and fiscal forecasting models and frameworks. This section has been developed as a guide to help the FSC in developing its own forecasting models and frameworks. There are companion Excel workbooks that has been developed to illustrate some of the concepts and techniques discussed in this chapter. The Excel workbooks should be regarded as examples only and are not intended to be adopted by the FSC as its forecasting models.

The *Macro-Fiscal forecasting framework* workbook contains some examples of techniques to forecast GDP production, expenditure and income and their components but it is not a fully developed system at this stage. This workbook should be used as a guide for the FSC when commissioning an external consultant to build a macroeconomic forecasting model.

The *Exports of goods* workbook contains a detailed breakdown of exports by type, both volumes and values. The intention of this workbook is to demonstrate that exports will need to be forecast on an individual basis for the major mining minerals as these dominate overall export growth. Through developing forecasts at this detail will enable the FSC to generate mining revenue forecasts and test sensitivities of mining revenue to different export volume and price assumptions. (See below discussion on mining revenue forecasts.)

The *Macro-Fiscal forecasting framework* workbook contains an example of how to forecast revenue by components, however, it needs to be adapted to separate mining and non-mining revenue in corporate income tax and royalties.

The *Macro-Fiscal forecasting framework* workbook contains an example of the linkages of expenditure into the national accounts forecasts but it does not contain separate forecasts from those of the government. Further development of the expenditure forecasts should be covered by the current consultancy which is developing the macro-fiscal debt analysis and financial programming framework.

The *Potential GDP Mongolia* workbook contains a consistent framework for estimating potential output for Mongolia based on trends in population, labour force participation and labour productivity and is an output the FSC could utilize in its analysis.

Macroeconomic forecasting

General considerations about forecasting

Building macroeconomic forecasts is an art form involving economic theory, data construction, econometric and statistical estimation and forecasting techniques, and much judgment. Economic theory provides forecasters with behavioral relationships and accounting identities that can be used to see how economic variables are linked to one another and over time. With the help of econometric and statistical methods, a forecaster calibrates or estimates the parameters of the relationships supplied by economic theory to arrive at values that are considered reasonable.

In this process, good judgment plays an important role because economists often do not have a complete or clear understanding of the quantitative links between variables. Leads and lags in economic relationships are often country-specific and vary over time. Measurement error of economic data adds to the uncertainties macroeconomic forecasters must contend with.

In such an uncertain world, macroeconomic forecasters have to rely on a great variety of sources of data and other qualitative information in making judgments that enter into their forecasts of the economy.

Understanding the data

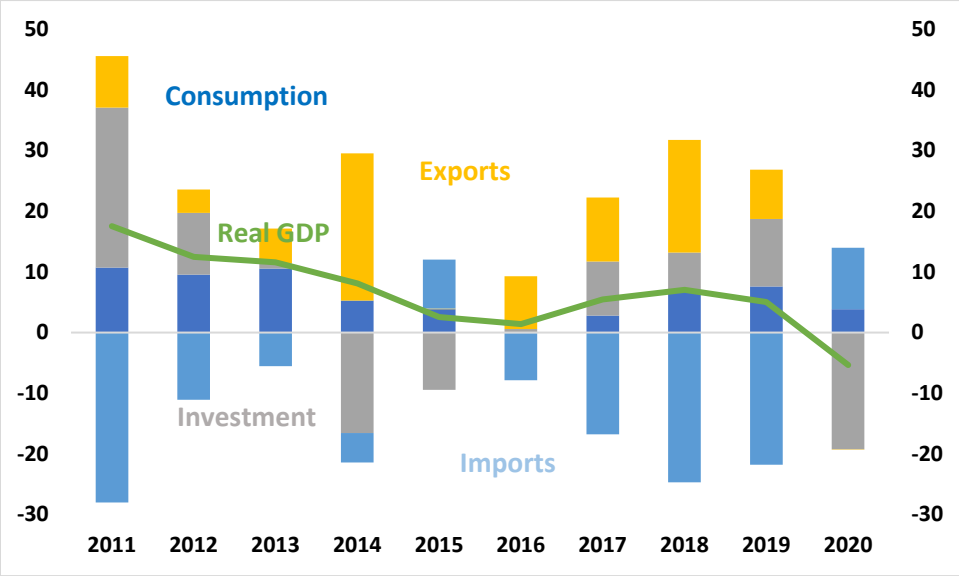
Plotting macroeconomic data

Before building forecasting models and frameworks, it is important to understand the data that will be forecast. To start it is useful to chart both the level and growth of the macroeconomic variables we are interested in. A graphical analysis will determine whether the variables are growing or are constant over time, whether growth is at a constant or increasing rate, whether cyclical patterns are in evidence, and so on.

A graphical analysis of Mongolian economic growth identifies that real economic growth exhibits a high degree of volatility driven by investment and exports in large part reflecting the dominance of the mining sector on the economy.

Figure 1: Contributions to real GDP growth

(percentage points)



Source: National Statistic Office (NSO).

Table 1: Contributions to real GDP growth

(percentage points)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Consumption	10.7	9.5	10.5	5.2	3.9	-0.1	2.8	7.1	7.6	3.8
Investment	26.4	10.2	0.8	-16.6	-9.5	0.5	8.9	6.1	11.1	-19.3
Exports	8.5	3.9	5.8	24.3	0.1	8.7	10.5	18.6	8.2	-0.1
Imports	28.1	11.1	5.6	4.9	-8.1	7.8	16.8	24.7	21.8	-10.2
Real GDP	**17.5**	**12.5**	**11.6**	**8.1**	**2.5**	**1.4**	**5.4**	**7.0**	**5.0**	**-5.4**

Source: National Statistic Office (NSO).

A graphical analysis may also reveal outliers which should be discussed with the National Statistics Office. These may be true anomalies, or reflect errors in the data series which, if not corrected, may give rise to misleading results.

While developing the *Macro-fiscal forecasting framework* workbook a few data anomalies have been identified and are discussed below in the appropriate areas.

Properties of macroeconomic data

Macroeconomic data is cyclical

Typically, the real measure of many economic variables displays cycles around a linear trend. This cyclical pattern is referred to as the business cycle and can be useful in informing the forecast of future economic developments in the short run. The understanding of the underlying trends in economic variables is important to forecast medium-term developments.

The concept of an economy's underlying trend, or potential output, is discussed in detail in Box A: Anchoring the forecast of real GDP: estimating potential output. Sometimes the data show sharp departures from the underlying trend that do not simply reflect cyclical fluctuations but rather amount to a structural break, that is, changes in the basic characteristics of the economy. The occurrence of structural breaks in the data will have implications for forecasting.

The data will be stationary or nonstationary and may exhibit common trends

Another important distinction concerning macroeconomic data is that between stationary and nonstationary series. Intuitively, a data series is stationary if it tends to revert to its long-run average value after it is hit by a shock. In contrast, when hit by a shock, nonstationary data series tend not to return to their long-run average value.

Statistical tests have been developed to test whether a data series is stationary. The most common are the Augmented Dickey-Fuller (1979) test and the Phillips-Perron (1988) test. All econometric software packages include these tests as a matter of course along with a number of other tests. Typically, you will find that the macroeconomic data forecasters use will be non-stationary but the growth rates will be stationary.

Relatedly, many macroeconomic variables trend upward (or downward) over time. Only some of them, however, share a common trend. For example, economic theory proposes that in the long run, consumption and income are closely related and therefore should share a common trend or equilibrium relationship. Another example would be employment and economic output.

In terms of the data properties of the variables, if they are non-stationary but share a common trend then the residual of the estimated relationship (model) will be stationary. This is a desirable feature of any econometric models developed for forecasting purposes as the relationships are not considered spurious which would lead to inaccurate forecasts. The specification of the forecasting models should be guided by economic theory and testing for common trends.

Forecasting approaches

The following section details a number of approaches that can be developed to forecast macroeconomic data. These approaches range in complexity.

The historical level or growth rate

The simplest assumption about the future behavior of a macroeconomic variable is that it will take on the same value as its current value (referred to as the naïve model). This assumption is reasonable if we believe that future deviations of the variable from today's value are purely random

or unpredictable. This approach is sometimes used to forecast variables such as the exchange rate or commodity prices.

An extension of this approach is to forecast a macroeconomic variable using the historical average growth rate of that variable. Judgement should inform the period over which a historical average is considered to be representative of likely future growth rates.

Note: An example of this approach has been used to forecast real GDP production by sectors over the period 2021-2024 in the Macro-fiscal forecasting framework workbook.

Constant ratio to another variable

For some macroeconomic variables, an easy way of obtaining a forecast is to assume that the variable grows at the same rate as another variable, so that the ratio between the two remains constant over time. For instance, it may be reasonable to assume that government spending in some areas grows in line with the size of the economy. In this case, a forecast for government spending can be obtained using the forecast for nominal GDP.

The advantages of this method are that it is simple to use and that it provides a reasonable forecast in some situations. The disadvantage of this method is that it requires a reliable forecast of nominal GDP or another macroeconomic aggregate.

Simple econometric approaches

Economists have developed several statistical (econometric) techniques that are useful for forecasting macroeconomic variables.

A linear trend approach

The linear regression model can be used to identify a trend in a time series and is more rigorous than just a visual plot. The linear trend model can be written as follows:

$$lnY_t = \beta_0 + \beta_1 Time_t + u_t$$

The explanatory variable *Time* takes the value of one for the first year of the sample period, the value of two for the second year, and so on. If the dependent variable Y is the natural logarithm, then the estimated coefficient of Time can be thought of as the rate of growth of Y.

Typically for this approach and the other models described below we estimate these relationships using the OLS estimator because it is simple and has several desirable properties.

We can use this application for forecasting if the trend has been stable over time, and little is known about the factors that may explain temporary departures from trend.

The autoregressive distributed lag (ADL) approach

An autoregression is a model that relates a time series variable to its past values. The simplest model of this kind is a first-order autoregression, abbreviated as AR(1), where the "1" indicates that it is a regression of the series on its own first lagged value.

The autoregressive distributed lag (ADL) model adds not only the lagged values of the dependent variable in the right-hand side of the equation, but also current and lagged values of other explanatory variables. For example, the first-order ADL model looks as follows:

$$lnY_t = \beta_0 + \beta_1 lnY_{t-1} + \beta_2 lnX_t + \beta_3 lnX_{t-1} + u_t$$

The exact specification of the lags will depend on testing different lags lengths of Y and X.

Error correction approach

As discussed above certain macroeconomic variables such as household consumption and income may share a common trend which can be utilized for forecasting purposes. An error correction model provides one approach where we can model a variable which contains both short run growth dynamics and a long-run anchor or equilibrium due to a common trend between the variables. A typical error correction model would be specified as follows:

$$\Delta lnY_t = \beta_0 + \beta_1 \Delta lnX_t - \gamma.(lnY_{t-1} - \delta lnX_{t-1}) + u_t$$

where $(lnY_{t-1} - \delta lnX_{t-1})$ is called the error correction term. Note that the first difference term would be zero in a long-run equilibrium, so that the error correction term, together with the intercept term, can be regarded as describing a long-run equilibrium.

The slope coefficient on error correction term captures the speed of adjustment to the long-run equilibrium.

This relationship can be exploited to produce forecasts. One of the advantages of this approach is that by taking this behavior into consideration by means of an economic model, forecasters can give an economic interpretation to their forecasts. For example, one could say that consumption is likely to fall because income falls during a recession, other things being equal. One of the disadvantages of this method is that we need reliable forecasts of the explanatory variables. For example, in the case of a consumption forecast, we need to have a forecast of income which is generally produced from the outlook for the labor market, that is forecasts of employment and wages growth.

Note: An example of this approach has been used to forecast real household consumption over the period 2021-2024 in the Macro-fiscal forecasting framework workbook.

Macroeconometric models

Macroeconometric models use economic theory to tie down the long run of the economy but allow the data to dictate the short-run dynamic adjustment path of the economy to the long-run steady state. These models range in size and complexity. They are useful for producing forecasts that are consistent within the model and can be used to test a baseline forecast through changing the exogenous variables to produce scenarios that can be used to communicate the balance of risks to the baseline forecasts.

There are several advantages with these models including that they include relationships identified as relevant by economic theory.

Structural models also have disadvantages. First, building good structural models is not easy, especially if the model needs to describe the whole economy (such a model is typically known as a macroeconometric model). Second, as a model becomes more complex a lot of observations are necessary to estimate the parameters. Third, forecasts of exogenous variables are needed to generate forecasts of endogenous variables. Fourth, the structure of the model can be very subjective; what variables are treated as endogenous or exogenous depends on model builders' priors.

Additional inputs into the forecasting process

While useful, forecasts generated by econometric models are generally supplemented by in-depth analysis of major sectors of the economy, drawing upon a range of other information, to produce the final macroeconomic forecasts.

If they are available, consumer and business surveys have been shown to provide useful forward-looking information on household spending, and business investment and hiring decisions. These surveys are generally published in a timelier manner than official data.

Partial economic data and leading indicators, such as the monthly building approval data can help to inform near-term forecasts of construction activity.

The practice of maintaining a regular dialogue with the business community is extremely valuable for identifying emerging trends in the economy. Many agencies have established dedicated resources, usually involving staff based away from the head office in major cities, who regularly engage with the business community through one-on-one discussions. Information gained from these engagements is used to inform the final macroeconomic forecasts.

Where an economy is highly concentrated in a few key sectors e.g., mining and agriculture, talking to the major companies involved in these activities can provide detailed information regarding production, exports and investment plans. Some agencies regularly publish their findings including the US Federal Reserve's Beige Book and the Bank of England's Agency Report.

Expert opinion, such as advice from specialist agencies, can be a useful source of information in informing specific aspects of the forecasts e.g., a view on the outlook for commodity prices. Related to this some forecasting agencies subject their forecasts to external expert review before finalization.

And finally, the least tangible input to macroeconomic forecasts is judgement, informed by experience. All forecasting agencies rely on the judgement of its forecasters which has been shown to generally improve the accuracy of the forecasts.

In short, most forecasters will draw upon a combination of modelling techniques, surveys, business liaison, expert opinion and judgement to produce macroeconomic forecasts. The differences across agencies lie in the modelling techniques and the weight given to each of the inputs which in large part reflect data availability and coverage and modelling expertise and resourcing.

Developing a framework for regularly assessing the accuracy of the economic forecasts

Finally, it is important to undertake a regular assessment of the accuracy and biasness of the forecasts of key macroeconomic variable. This regular exercise provides invaluable information to the forecaster in understanding why the forecasts varied from outcomes and may identify areas for further methodological improvements. This assessment should be performed annually.

Box A: Anchoring the forecasts of real GDP: Estimating potential GDP

The outlook for GDP is critical to assessing the outlook for the budget balance and the profile of public sector debt and inflation. Producing GDP growth forecasts over a period beyond the short term requires a view on the economy's underlying output potential. Having an estimate of where the economy is currently operating compared to potential provides a measure of how much resources are either spare or stretched (an output gap). This output gap assessment is an important concept in economics and economic forecasting.

The output gap guides monetary policy in assessing future inflationary pressures and it allows us to judge the size of the structural budget balance and therefore the sustainability of the fiscal outlook. It also helps us to assess the impact of the stance of fiscal policy, both pro and counter-cyclical, on the economy.

Potential output is not directly observable and must be estimated.

Statistical approaches

There are a range of techniques that can be employed including statistical filters and production function estimation. The approach chosen will typically depend on data availability and modelling capability. The range of estimation techniques typically produce results that trend together over time but there will be differences in variability of potential output and therefore the size of the output gap.

Statistical filters attempt to decompose time series variables into a cyclical component and an underlying trend. There are two main types of statistical filters that are used:

- Univariate filters produce a series for potential output based on the observed path of actual output alone (e.g., moving average, linear trend, Hodrick-Prescott (HP) and Band Pass filters). Univariate filters have the disadvantage of being merely statistical and incorporating only past information of GDP, thus ignoring the relationship between GDP and other macroeconomic variables. The estimate of potential output for the most recent data can be overly influenced by recent movements in actual output (the so-called 'end-point problem') and can be revised substantially with new GDP data.
- Multivariate filters augment GDP data with other information reflecting the economy's cyclical position. They derive estimates of the output gap from a set of conditioning relationships such as the relationship between inflation and the output gap (the Phillips curve) and the relationship between the output gap and disequilibrium unemployment (Okun's law). These estimates are considered to be more reliable because of the wider pool of information used.

Production function approach

The other common approach is to estimate a production function of the economy using inputs into the production process. Potential output is assumed to be a function of labour supply, the capital stock, and the maximum efficiency with which they can be combined (multi or total factor productivity).

The historical trend levels for the inputs are estimated using a univariate statistical filter approach, so they are subject to similar issues to the simple filtering techniques as discussed above. In practice, every method has its limitations and no approach is without judgement.

Application to Mongolia

For the Mongolia economy potential output is estimated by decomposing it into working age population, participation and productivity (the so-called PPP approach)[1]. To project these components, we use a variety of approaches, all involving some judgement.

Figure A: Actual and potential GDP (per cent change) **Figure B: Output gap (per cent)**

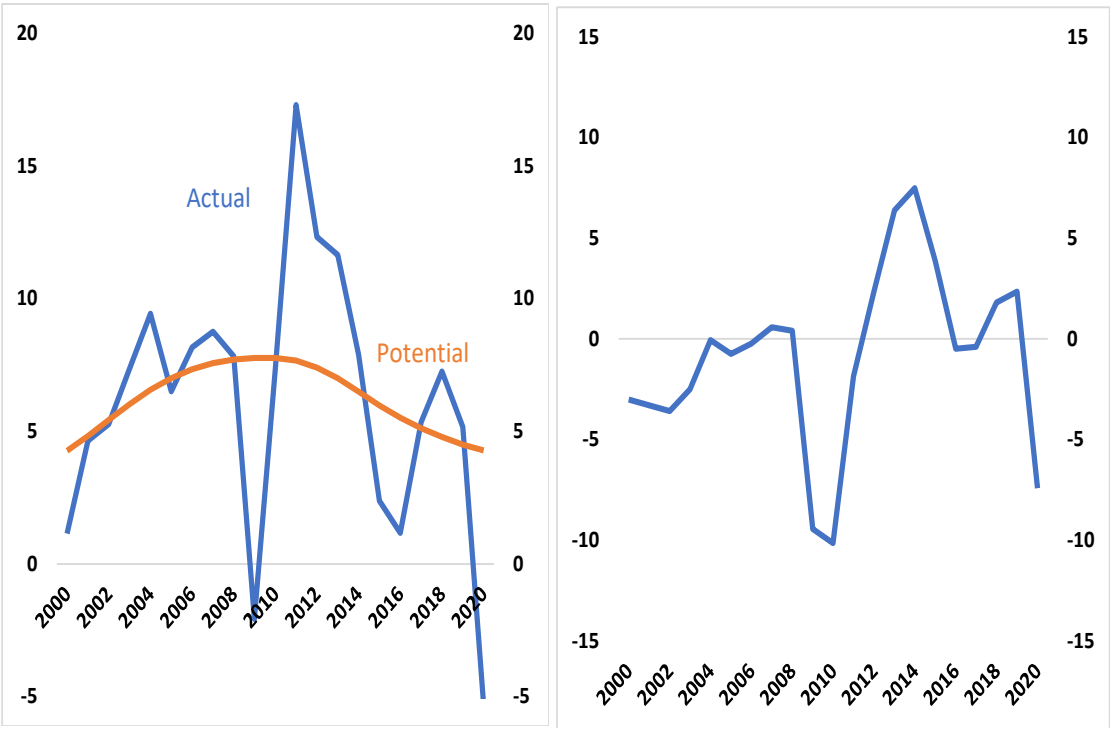


Table A: Real and potential GDP (per cent annual change) and output gap (per cent)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Real GDP	7.3	17.3	12.3	11.6	7.9	2.4	1.2	5.3	7.2	5.2	-5.3
Potential GDP	7.8	7.7	7.4	7.0	6.5	6.0	5.5	5.1	4.8	4.5	4.3
Output gap	-10.1	-1.9	2.4	6.4	7.5	3.9	-0.5	-0.4	1.8	2.3	-7.4

Source: NSO, authors calculations

The PPP technique allows the forecaster to understand how different trends in population, labour force participation and productivity might be driving changes in potential output with implications for understanding how the actual economy is evolving. It also provides a medium-term anchor for the macroeconomic forecasts allowing an assessment and cross-check on how the output gap evolves over the forecast period.

[1] The Excel workbook *Potential GDP Mongolia* contains the methodology and results described in this Box.

Forecasting real GDP production and expenditure

To forecast real GDP it is helpful to consider the supply-side and the demand-side separately and then address any inconsistencies between the forecasts.

Forecasting the supply-side: GDP (production)

It is common to forecast production GDP sectors and therefore total production-based GDP as a means to develop a first baseline estimate of GDP. The forecast for each industry sector is based on an assessment of past growth rates:

$$Y_{t+1} = \sum_{j \in J} y_{j,t+1} = \sum_{j \in J} y_{j,t} \left(\frac{y_{j,t+1}}{y_{j,t}} \right) = \sum_{j \in J} \exp\left[\ln\left(y_{j,t}\right) + \Delta \ln\left(y_{j,t+1}\right) \right]$$

Where Y is total GDP in period t and y_j is sectorial GDP.

To supplement the forecasts information is gathered for various major sectors of the economy including current production estimates for Agriculture and Mining in particular. Baseline forecasts will be supplemented with this and other information and judgement highlighting the importance of applying judgement and additional information to the generate the final forecasts.

A further extension to this process would involve the development of a nowcasting tool (leading indicator) to provide a real-time estimate of next quarter production GDP based on a range of higher frequency (daily and monthly) data. The estimate of next quarter GDP can be continuously updated as new data becomes available.

Note: The GDP production sectors are forecast over the period 2021 to 2024 using this approach in the Macro-fiscal forecasting framework workbook.

Forecasting the demand side: GDP (expenditure)

The demand side involves forecasting expenditure components of consumption, investment, exports, and imports.

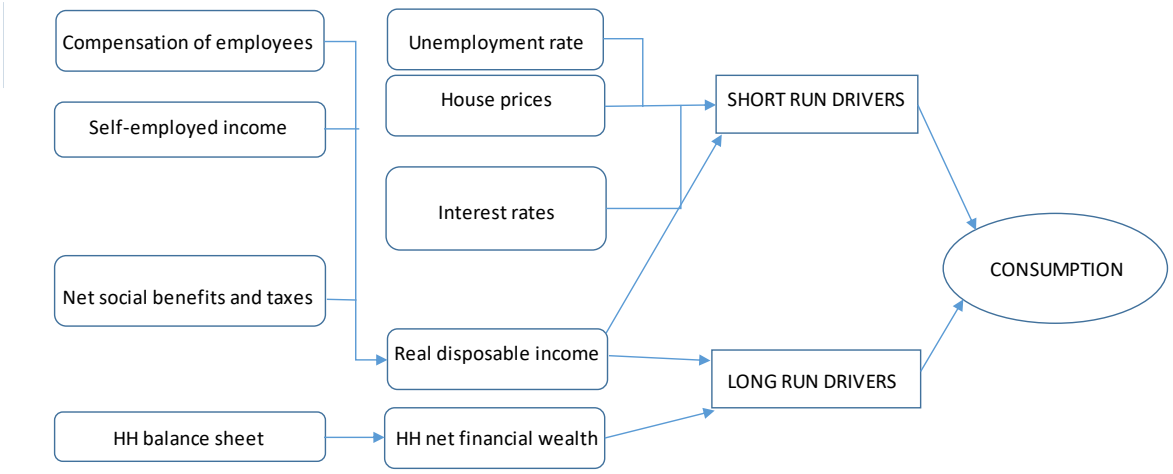
Household consumption

Household consumption is typically the largest component of expenditure, although not in Mongolia where exports are larger. Typically, the first few quarters of household consumption are forecast using a wide range of high-frequency survey and economic data. Retail trade survey data is typically available for the next quarter ahead and has a strong correlation with many components of household consumption. Other partial information includes consumer confidence and electronic or credit card transactions data.

Beyond the first quarter or two household consumption is typically modelled using an error correction specification based on the permanent income/lifecycle model with disposable income and wealth being the main drivers in the long run. The short run specification of the model may include other economic variables such as interest rates, to capture the cost of borrowing, and the unemployment rate, to capture pre-cautionary savings e.g., when unemployment is rising consumers may cut back on spending due to increased job insecurity.

The following diagram provides a visual representation of how we might think about the drivers of household consumption in the short and long term. The fundamental drivers of household consumption include real disposable income which includes income derived from employment (compensation of employees), income derived from self-employment or running a small business

(self-employed income) and income received from the government in the case of being unemployed or retired. Ideally income is net of tax paid and is then deflated.



Household wealth (HH net financial wealth) typically includes the net value of owning property and shares.

Note: The Macro-fiscal forecasting framework workbook estimates a relationship between real household consumption and real income (COE) to forecast household consumption. The forecasts of COE are derived from the forecast growth in employment and wages.

Government consumption

Forecasts of government consumption are typically prepared by the budget section of the Ministry of Finance (or Budget Authority) which capture the Government's spending objectives. These forecasts are typically nominal dollars which are transformed into real government spending based on historical movements in the public consumption deflator and forecasts of consumer price inflation.

Note: The Macro-fiscal forecasting framework workbook takes forecasts from the appropriate components of Government expenditure (e.g., Goods and Services) and uses a forecast of the Government Consumption deflator to derive a consistent forecast for the GDP measure of government consumption.

Private investment

Private investment is typically difficult to forecast reflecting its volatile nature. Ideally private investment should be disaggregated into machinery and equipment, and construction recognizing the different drivers of these components of private investment. Over the next quarter or two indicator models that use building permit data, capacity utilization data from business surveys and company's estimates of their capital expenditure have been proven to be useful.

For forecasting medium-term private investment, it will depend on the composition of investment. It is most likely that private investment in Mongolia will continue to be dominated by mining investment.

Mining investment should ideally be forecast on an individual project basis accounting for the different types of investment and different progress on the developments which will also influence the forecasts for imports and exports. Estimates of mining projects spending can be sourced through company announcements, media, and analyst reports.

Direct regular contact with the major mining companies is invaluable for understanding changes in overall spending, the timing of completion and construction delays, cost overruns and other issues impacting the projects. These factors will all impact the outlook for business investment.

Note: The Macro-fiscal forecasting framework workbook contains a simple approach using the average of the historical level to forecast private investment. Any approach adopted to forecast private investment within the FSC's macroeconomic forecasting model will need to be supplemented with information on mining projects.

Government investment

As with government consumption, the forecasts for government investment are typically sourced from the Budget Authority (Ministry of Finance) and are based on the Government's investment spending plans, which is typically infrastructure. To derive a forecast of real government investment a forecast for the deflator is usually based on the historical growth rates with some consideration of the forecast growth in domestic prices.

Note: The Macro-fiscal forecasting framework workbook takes as exogenous the capital spending forecast from the 2022 MTFFS and uses a forecast of the public investment deflator to derive a real public investment forecast.

Stocks

Stocks, or 'inventories', are goods held by firms in reserve, rather than being immediately sold or used in the production process. While stocks can make a substantial contribution to Gross National Expenditure (or domestic demand e.g., consumption and investment) growth from quarter-to-quarter, over an annual period they typically have a minimal impact.

Production and export indicators may provide a sense of the direction of stock changes for the near-term forecasts. Beyond this adjustment, it is common practice to ensure that the stocks contribution to GNE is minimal.

Note: The Macro-fiscal forecasting framework workbook contains a simple approach using the average of the historical change to forecast stocks.

Exports of goods and services

Exports are typically forecast at a component level reflecting their different drivers. Export volumes that are typically driven by supply side developments include both agriculture and other resource commodities. Given the dominance of mining commodities and China as a destination of total exports this has implications for the approach to forecasting goods exports.

Mining export volumes are largely determined by production. While production capacity is predictable, actual production can be influenced by a range of factors including maintenance schedules, extreme weather events and bottlenecks or delays at key loading and transport facilities.

Forecasts of mining export volumes are typically sourced from the major mining companies based on their expected production for the year and the capacity of the mines and transportation hubs. This information may come through direct contact, media reports or market analysts who typically forecast individual mine production and exports.

Note: The Macro-fiscal forecasting framework workbook contains detailed historical export volumes and values by goods. Export prices are derived from the values and volumes. Forecasts of values and prices for only the major mining commodities and agriculture products are used to derive a forecast for total export volumes and values.

Imports of goods and services

Imports have a strong relationship with domestic demand and typically rise as a proportion of domestic demand reflecting changing preferences and strong price competition with locally produced goods and services. A common approach to forecasting imports is to estimate an error correction relationship similar to the following specification:

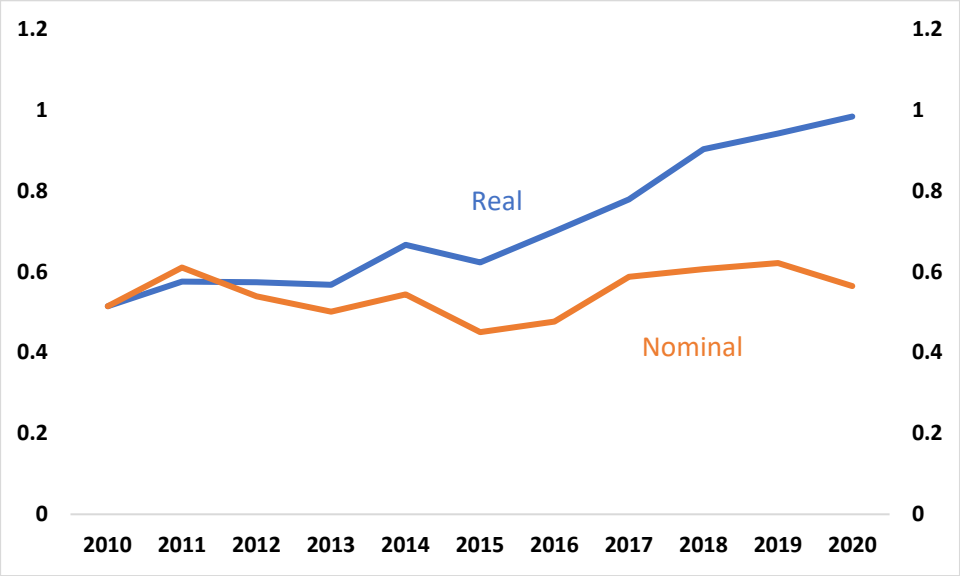
$$\Delta lnM_t = \beta_0 + \beta_1 \Delta lnGNE_t + \beta_2 \Delta \ln(^{pm_t}/_{pgne_t}) - \gamma.(lnM_{t-1} - lnGNE_{t-1} - \delta ln(^{pm_{t-1}}/_{pgne_{t-1}})) + u_t$$

Where M is imports, GNE is domestic demand and *pm* and *pgne* are the respective prices.

Graphing the ratio of imports to GNE (the so-called import penetration ratio) for Mongolia suggests a strong increase in this ratio over the past decade where the ratio is now close to 1. This seems implausible and suggests a possible issue with the import deflator which should be discussed with the National Statistics Office.

Figure 2: Import penetration ratio

(proportion)



Source: NSO, authors calculations

Table 2: Import penetration ratio

(proportion)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Real	0.52	0.58	0.57	0.57	0.67	0.62	0.70	0.78	0.90	0.94	0.98
Nominal	0.52	0.61	0.54	0.50	0.54	0.45	0.48	0.59	0.61	0.62	0.56

Source: NSO, authors calculations

Note: The Macro-fiscal forecasting framework workbook does estimate the above relationship. However, given the concerns about the import penetration ratio these equation forecasts are overwritten.

Employment

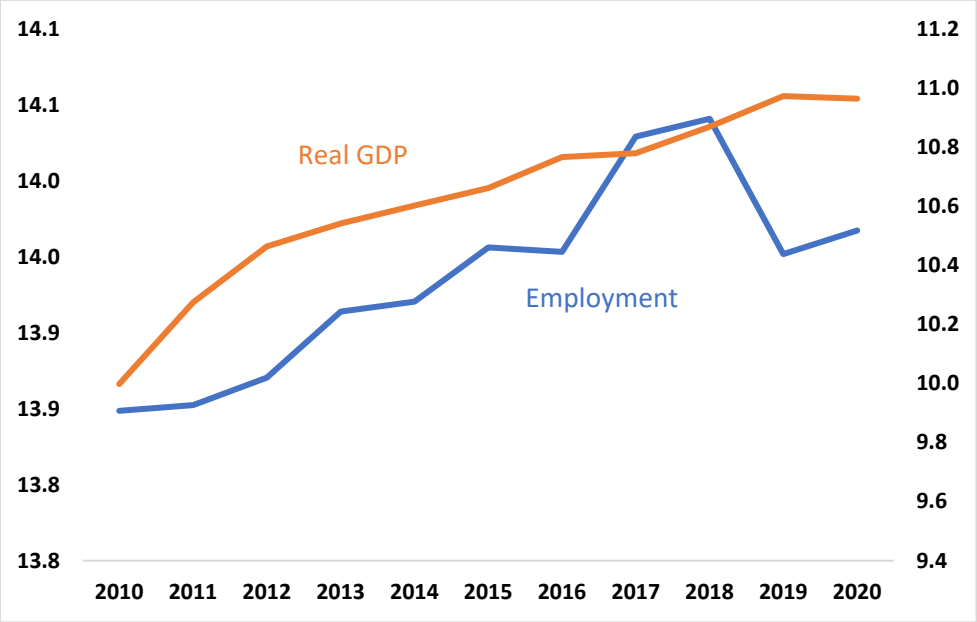
A typical approach to forecasting employment is an error correction relationship with GDP and real wages as shown below.

$$\Delta lnE_t = \beta_0 + \beta_1 \Delta lnGDP_t + \beta_2 \Delta lnE_{t-1} - \gamma.(lnE_{t-1} - \delta_1 lnGDP_{t-1} - \delta_2 ln(\frac{W}{CPI})_{t-1}) + u_t$$

Graphing employment highlights that prior to 2017 employment had been increasing at a steady rate. However, since 2017 employment has displayed considerable volatility unrelated to changes in GDP and is another example where discussing this data issue with the National Statistics Office would be important.

Figure 3: Employment and real GDP

(logs)



Source: NSO, authors calculations

Table 3: Employment and real GDP

(annual per cent change)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employment		0.4	1.8	4.4	0.6	3.6	-0.3	7.6	1.2	-8.9	1.5
Real GDP		17.5	12.5	11.6	8.1	2.5	1.4	5.4	7.0	5.0	-5.4

Source: NSO

The forecast for employment contributes to the calculation of household incomes which is required to produce a forecast for household consumption.

Note: The Macro-fiscal forecasting framework workbook contains an example where the estimation period is shortened to exclude the recent volatility in employment and these estimates are used to forecast employment.

Labor force participation

In the short run the labor force participation rate can be modelled in terms of an encouraged worker effect reflecting changes in employment.

$$\ln\left(\frac{LF}{WAP}\right)_t = \beta_0 + \beta_1 \ln\left(\frac{LF}{WAP}\right)_{t-1} + \beta_2 ln\left(\frac{E}{WAP}\right)_t + u_t$$

Where LF is the labor force (employment plus unemployment) and WAP is the working age population typically those aged 16 and above.

Labor force participation data is typically very detailed and can be disaggregated by age cohorts and gender, which can uncover very important trends to factor into the medium-term forecasts. For instance, the significant rise in female participation over the past few decades and the fall in youth participation and the rise in older workers participation since the GFC.

These trends have an important bearing on the forecasts of the labor force participation rate over and above the short-term cyclical influences. It is difficult to capture these trends in an aggregated equation which means adding judgement to the output from the aggregated model and/or developing a detailed framework which attempts to forecast labor force participation by gender and age using trend techniques.

The unemployment rate

The unemployment rate is typically backed out of the forecasts for employment and the labor force. There are approaches that can be used to forecast the unemployment rate which may serve as a consistency check on the approach described above. Okun's Law, that is the relationship between the unemployment rate and real GDP, provides a means for producing a forecast of the unemployment rate given a forecast for GDP.

$$U_t - U^* = \theta(Y_t - Y^*)$$

Where U is the unemployment rate, U* is the NAIRU, Y is GDP and Y* is potential GDP.

Prices and inflation

Price Indexes and Inflation

When it comes to forecasting prices in the economy we are typically interested in two main price indices, namely the Consumer Price Index (CPI), which measures the relative changes over time in the prices of consumption goods and services acquired or used by households and the GDP deflator, which measures changes in the level of prices of all new, domestically produced final goods and services in an economy.

While there are differences between the two price measures they typically move together over time.

Forecasting CPI inflation

The consumer price index (CPI) provides a general measure of changes in prices of consumer goods and services purchased by households. The prices of detailed consumer items are surveyed periodically, and these are weighted by their share of household spending as estimated from the Household survey to provide an overall measure of the change in consumer prices, i.e., inflation, in the economy.

A key feature of inflation is that it is a highly persistent phenomenon, which means that the inflation rate in the current period is highly correlated with the inflation rate in the previous period. This feature of the inflation rate is found in many countries, across many types of monetary policy regimes, and at various stages of development.

As an alternative to using the previous period's inflation rate as a forecast, the core inflation rate (which excludes volatile items such as fuel which can change significantly from month to month due to oil price changes) in the previous period, the expected inflation rate (from surveys or bond price differentials), or the target inflation rate in an inflation targeting regime or stabilization program could be used as a starting point for judgmental forecasting.

The most common functional forms for forecasting inflation are the Phillips curve and mark-up model for the inflation rate that are either econometrically estimated or calibrated using coefficient estimates from empirical studies on similar countries.

The Phillips curve

A Phillips curve approach will typically specify a relationship with the output gap (GAP) as below.

$$\Delta CPI_t = \beta_0 + \beta_1 \Delta CPI_t^e + \beta_2 GAP + u_t$$

The output gap measures the degree to which output is above or below potential or trend output. When output is above potential and domestic demand is high relative to the supply capacity of the economy, firms can increase their profits by increasing prices, without concern for losing sales to competitors. Also, workers demand higher wages, knowing that firms will be able to pass on the cost increase to customers through higher prices. This results in an increasing rate of inflation.

On the other hand, when there is a negative output gap (or a high unemployment rate), there is downward pressure on prices (and wage demands are lower), and the inflation-rate tends fall.

This relationship can be augmented with a measure of inflation expectations (CPI^e) to capture forward looking price setting. Inflation expectations can be obtained from surveys and financial markets where countries have inflation indexed bonds. Otherwise, the lag of inflation can proxy for inflation expectations.

The markup model

An alternative approach is to model developments in the prices of inputs and use these relationships to forecast inflation. This approach is known as a markup model. The mark-up model assumes that firms set prices as the sum of the costs of all production inputs and a fixed mark-up, which covers fixed costs and profits. Typically, a measure of wages is the dominant factor, normally adjusted for productivity, will be the dominant factor driving inflation given the importance of labor in the production of many goods and services. Import prices are also an import driver of inflation.

$$\Delta lnCPI_t = \beta_0 + \beta_1 \Delta lnULC_t + \beta_2 \Delta lnPM_t - \gamma.(lnCPI_{t-1} - \mu - \delta lnULC_{t-1} - \theta lnPM_{t-1}) + u_t$$

The markup model can be adapted to include the output gap to capture a firm's ability to raise prices given the state of the economy.

There may be other factors that impact inflation that can be added to the modelled forecast. For example, changes in indirect taxes and changes in administered prices. Such changes have an immediate direct impact on the inflation rate; in the case of changes in administered prices, this effect will depend on the size of the price change and the relative share of the goods and services with administered prices in the CPI basket.

Forecasting the change in the GDP deflator

The GDP deflator is typically forecast on a disaggregated basis reflecting the different price movements of the components of production and expenditure GDP. Below are some suggested approaches to forecasting the deflators for expenditure GDP.

- Forecasts of the household consumption deflator are typically based on the forecasts of consumer price inflation reflecting the strong conceptual relationship between these two measures of consumer prices.

- The business investment deflator can be forecast using historical trends and ensuring consistency with the imports of goods deflator and domestic costs, including wages growth. Given that it is typical that a large share of business capital is imported it is important to ensure a relationship between changes in import prices and changes in business investment prices. This can be done formally through estimating this relationship or informally through ensure a consistent movement between the two prices.

- Forecasts of the export deflator are typically derived from world prices for the major resource commodities and other commodity goods exports which is converted to domestic prices using a forecast of the nominal exchange rate. The forecast of the services export deflator would typically use the CPI forecast.

- Forecasting the goods import deflator usually involves using forecasts of world prices, potentially disaggregating by the consumption, intermediate and capital categories, and a forecast of the nominal exchange rate. Forecasting the services import deflator typically uses a world CPI or wages measure and the nominal exchange rate. The IMF's WEO database is a good source for historical country data and forecasts.

Note: For the Macro-fiscal forecasting framework workbook the deflators are calculated using historical growth rates except for the export deflator which is derived from forecasts of mining commodity price forecasts.

Forecasting the Exchange Rate

The exchange rate is one of the more difficult macroeconomic variables to forecast accurately. The forecasts for the nominal and real exchange rates must be consistent with each other and with the forecast for the CPI inflation rate (domestic and world (IMF WEO database)).

Typically, a simple approach to forecasting the exchange rate is best and can be based on assuming that the real exchange rate is constant over the forecast period. The following relationship between

the real exchange rate (R) the nominal exchange rate (E) and relative prices domestically (P) and foreign (P^f) can then be used.

$$R = \frac{EP}{P^f}$$

Depending on the forecasts for the CPI both domestic and foreign will determine to path for the nominal exchange rate.

Forecasting revenue

This section outlines various approaches to forecasting revenue. Revenue forecasts are a crucial input into the budget process as they provide the government with guidance on the overall sustainability of the budget outlook given its spending commitments. It is self-evident that striving to produce the most accurate revenue forecasts possible should be the goal and that the methodologies outlined in this chapter should assist in achieving this goal.

As a first step in the forecasting process, it is important to be familiar with developments in the revenue data and the reasons behind movements and trends. Having knowledge of both the economic and policy context is very important for interpreting these data as this knowledge will inform the forecasts produced from the methodologies discussed below.

Common approaches to forecasting tax revenue

There are several common approaches to forecasting revenue which are discussed in this section. While each approach is discussed separately, they are not necessarily mutually exclusive and could be used to complement each approach.

Effective tax rates

A tax rate relates the amount of tax payable to the tax base. The tax base for a given tax is the event that gives rise to taxation such as the earning of wages. The law also defines at what rate the event will be taxed, what items may be deducted in calculating the tax, and whether any exemptions are allowed.

For forecasting purposes, there are a number of problems with the tax base as defined in the law. Typically, a large amount of detailed information is needed to assess developments in the various tax bases and these data may not be published. Even with these data the forecasting framework that needs to be developed can be extremely complex.

For these reasons forecasters usually use a proxy tax base to analyze the behavior of tax revenue and to make forecasts. A proxy tax base is an economic variable that is closely related to the actual tax base and for which data are available. For example, while we may not have information on company profits, we can use the measure of gross operating surplus (GOS) from the National Accounts which has a close relationship with company profits. The available economic data, typically sourced from the National Accounts, are referred to as the proxy tax bases when used in forecasting revenue.

The following table outlines the major revenue items for Mongolia and the suggested proxy tax bases sourced from National Accounts data. In the absence of detailed GDP(E) and GDP(I) forecasts, nominal GDP forecasts can be used.

Main revenue item	**Proxy tax base**
Corporate income tax	Gross Operating Surplus (GOS)
Personal income tax	Compensation of employees (COE)
VAT	Consumption and Imports of goods and services
Social security contributions	Nominal GDP
Excise duty	Household consumption
Taxes on foreign trade	Imports of goods and services

Other taxes	Nominal GDP
Non-tax revenue	Nominal GDP

The use of these proxy tax bases ensures that the revenue forecasts are explicitly connected to the macroeconomic forecasts.

Having identified a proxy tax base, we now need an appropriate tax rate. The effective tax rate (ETR) is defined by the following formula which is the amount of tax revenue divided by the proxy tax base:

$$Effective\ tax\ rate = \frac{Tax\ revenue}{Proxy\ tax\ base}$$

The effective tax rate shows how much revenue is actually collected as a per cent of the proxy tax base. Using the effective tax rate produces a more realistic forecast than one based on the tax rate as defined in the law. The reason is that such factors as tax exemptions and tax evasion are explicitly taken into account when calculating the effective tax rate.

If the ETR is relatively stable over history then it is straightforward to assume it will be stable over the forecast period, in the absence of policy changes, and our forecast for revenue is simply the ETR multiplied by the proxy tax base.

There will be instances where the ETR is not stable and there are a number of reasons why this might be the case. One of the most obvious reasons is changes in tax law which may, as an example, result in changes to the statutory rate. Another reason may be that the tax is a specific tax which does not vary with the value of the proxy tax base resulting in the ETR falling over time. In contrast, if the tax is progressive, which is typically the case for an income tax, as more people move to higher incomes the ETR on total income will increase.

If the effective tax rate is not stable, there may be a predictable trend in the ETR that can be forecast. If this isn't the case, there may be a predictable pattern with the marginal tax rate. The marginal tax rate is defined as the ratio of the change in taxes to the change in the tax base:

$$Marginal\ tax\ rate = \frac{\Delta\ Tax\ revenue}{\Delta\ Proxy\ tax\ base}$$

If the marginal tax rate is stable, then the forecast of the change in revenue is derived by multiplying the change in the proxy tax base by the marginal tax rate.

Note: The Macro-fiscal forecasting framework workbook uses the effective tax rate approach to forecast Mongolia's revenue. The approach uses the forecasts of the proxy tax bases generated from the macroeconomic forecasts and applies forecasts of effective tax rates by the main revenue categories to produce a forecast for overall revenue.

Elasticities and buoyancies

The elasticity of tax revenue is defined as the ratio of the percentage change in tax revenue to the percentage change in the tax base, assuming no change in the tax system during the period. If GDP is taken as a proxy for the tax base, then the elasticity with respect to GDP is:

$$Elasticity = \frac{\Delta T^*/T^*}{\Delta GDP/GDP}$$

where T* denotes tax revenue from an unchanged tax system, that is, actual tax revenue adjusted for the estimated impact of changes in the tax system over the period. An estimate of elasticity can be obtained by a rough averaging of the ratio of the percentage change in revenues to the percentage change in the tax base over a period in which there was no change in the tax system.

With an estimate of the elasticity for the tax in question and a forecast of the growth rate of the proxy tax base, then a revenue forecast can be obtained by simply multiplying the growth rate in the proxy tax base by the elasticity.

Although it is difficult to obtain precise estimates of elasticities, it is often possible to estimate a range of values for elasticities, especially for taxes on personal income and profits. This information can be obtained from the experience of countries comparable in levels of income and economic structure. Observed elasticities for major tax items typically fall into a relatively narrow range of values. Such judgmental estimates of elasticities are useful, especially where historical data for econometric estimation of the elasticities are generally not available.

The main drawback of the elasticity approach is that it does not take into account either past or future changes in the tax system. Since the law defines the tax base, the tax rate, and the allowable deductions and exemptions, any change in the law that modifies these provisions could have a significant impact on revenue. Any changes in tax administration, in the efficiency with which a Tax Office works, or in enforcement of the tax laws could also have an important effect on tax revenue.

Another approach is to include changes in the tax system in the estimate. Buoyancy refers to the ratio of the total percentage change in tax revenue, including any effect of policy changes, to the percentage change in the tax base. If GDP is taken as a proxy for the tax base, then buoyancy with respect to GDP is:

$$Buoyancy = \frac{\Delta T/T}{\Delta GDP/GDP}$$

where T denotes actual tax revenue (without adjusting for the impact of changes in the tax system). A buoyancy (or elasticity) equal to 1 means that tax revenue is growing at the same rate as the tax base.

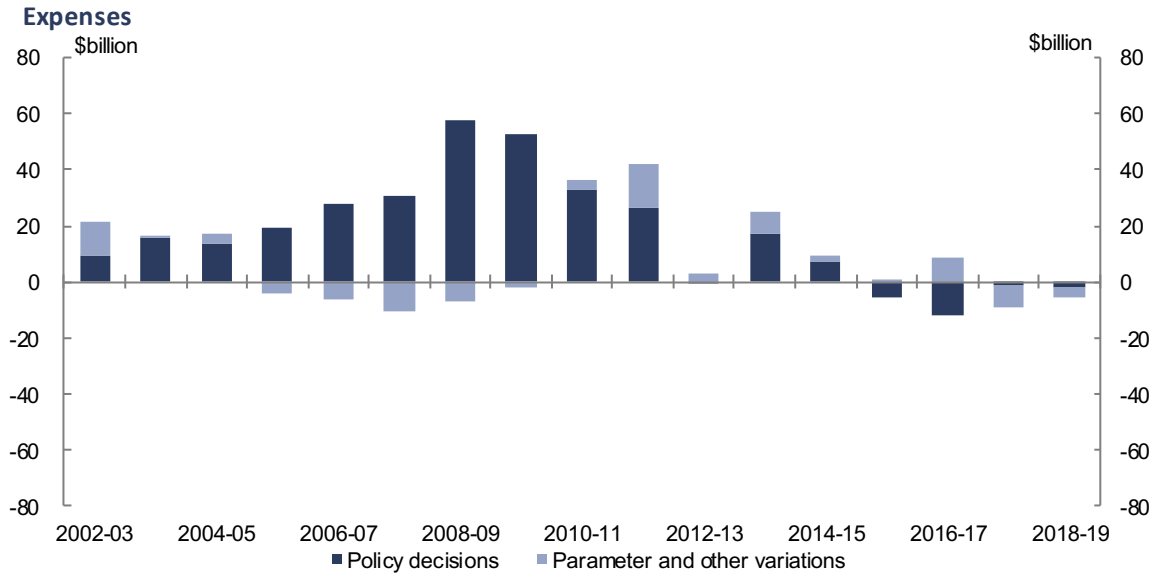
Forecasting Expenditure

Because many decisions about government expenditure are political in nature, there is less scope for relying on economic relationships in forecasting the level of government expenditure than in forecasting revenue.

Forecasting noninterest expenditure

We know from experience that government spending will be significantly influenced by policy decisions. A good example that illustrates this point is an example undertaken which investigated the main determinants of the changes in the Australian Government budget from update to update. The analysis highlights that changes in revenue are typically the result of changes in economic outcomes from forecast. While change in expenditure were almost entirely the result of changes in government policies which typically resulted in higher spending.

Figure 4: Impact of changes to Australian Government expense and net capital forecasts for each year



Source: Australian Parliamentary Budget Office (2016) *Impact of policy decisions and parameter varaiations on Australian Governmnet revenue and spending estimates*.

Therefore, a forecast of expenditure will need to include what is known about fiscal policy in the year ahead. This can be ascertained from the budget for that year and from an assessment of the impact of announced changes in fiscal policy. If there is no information about the government's planned discretionary policy measures, the forecast of expenditure is then based on existing policies, assuming that these policies remain unchanged over the forecast period.

The following are some factors to take into account in forecasting individual expenditure categories:

- Expenditure on wages and salaries depends on: government policies; the number of civil servants and military personnel; the average wage rate; wage developments in the private sector; and changes in the cost of living.
- Outlays for other goods and services are the main operating expenses of the government and are likely to be determined by the size of the civil service and will likely move with inflation.
- Government expenditure on subsidies, grants, social benefits and other expense like capital transfers represents the cost of programs designed to achieve certain public objectives,

including income redistribution. Factors that influence this expenditure item include: government policies; the rate of growth of real GDP; the rate of growth of the population covered by the programs; and where there is indexation the rate of inflation or other price variables.

- Capital spending in most countries is set in the context of a rolling, multiyear investment program. It is then subject to annual changes due to resource constraints and changing policy priorities. Capital investment depends on government policies, foreign financing, the number and scope of ongoing projects, the exchange rate, and the rate of inflation.

Given that the forecasts of the components of non-interest expenditure are mainly mechanical and produced by the Ministry of Finance there is unlikely to be much value add in the FSC producing its own forecasts. Where the FSC can add considerable valuable is in terms of transparency as to what components and programs are driving non-interest expenditure, with a particular focus on policy changes leading to increased spending.

Note: The Macro-fiscal forecasting framework workbook uses a simple approach using historical growth to forecast most categories. The forecast for capital investment is from the 2022 MTFFS. The government capital investment forecast is used to derive the public investment forecast of GDP.

Forecasting interest expenditure

Interest payments are forecast using the stock of debt and interest rates. The stock of debt will typically be categorized into foreign and domestic (for Mongolia government debt is almost entirely foreign sourced) and between bank and non-bank sources. Interest rates need to be derived for both foreign and domestic lending and projected forward either assuming no change or incorporating current yield curve information. Given that most government debt is foreign sourced a forecast of the exchange rate is also required to be able to calculate local currency interest payments for Mongolia.

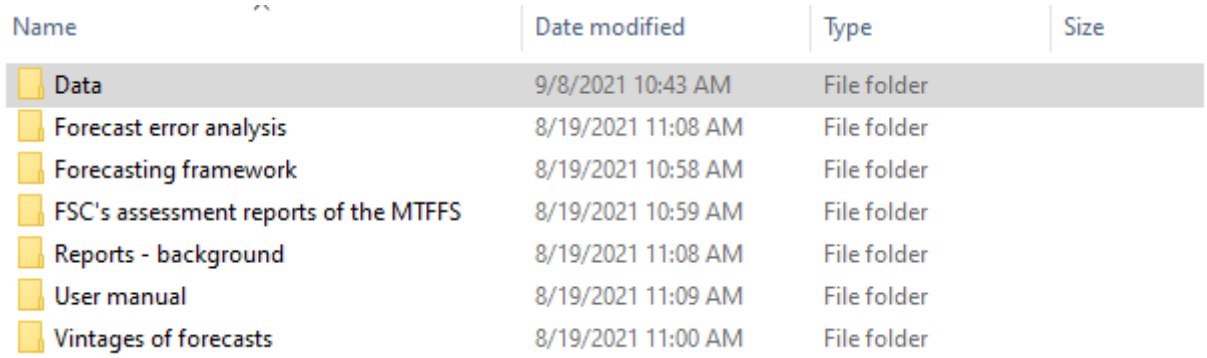
Chapter 4: Protocols for database and model management

In the absence of the FSC having a working model or framework and a detailed database I have based these examples and lessons of best practice on the macro-fiscal forecasting framework workbook I developed to accompany the discussion in Chapter 3. Once the FSC has a fully operational and integrated model/framework (henceforth 'model') then the recommendation below can be applied.

There are several fundamental principles that should be followed in terms of best practice database and model management. Given large amounts of data from different sources and complexity of forecasting models it is important that there is clear documentation to assist in terms of operating, updating and sharing the model(s).

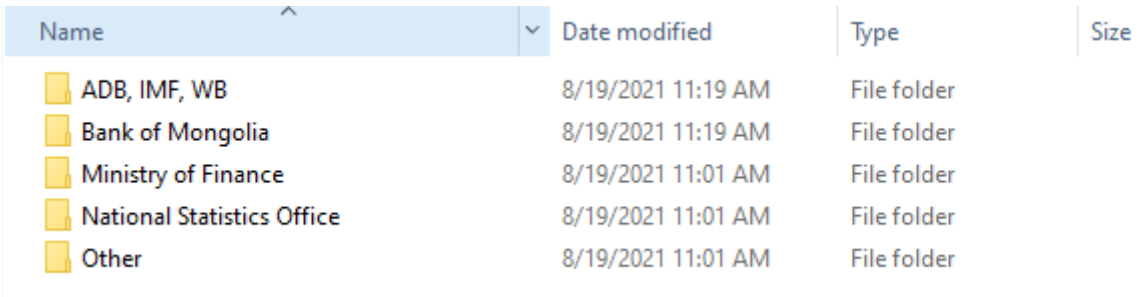
File structure and storage

It is important to have a clear and concise system of storing and filing the data, model(s), reports etc. Ideally all these files should be stored on a shared directory accessible to the FSC staff and members. It is not good practice to maintain the working model(s) on individual laptops for version control reasons unless there is no shared drive. The following screen shot provides an example of how the model(s) forecasting file directory could be set up.



Name	Date modified	Type	Size
Data	9/8/2021 10:43 AM	File folder	
Forecast error analysis	8/19/2021 11:08 AM	File folder	
Forecasting framework	8/19/2021 10:58 AM	File folder	
FSC's assessment reports of the MTFFS	8/19/2021 10:59 AM	File folder	
Reports - background	8/19/2021 11:08 AM	File folder	
User manual	8/19/2021 11:09 AM	File folder	
Vintages of forecasts	8/19/2021 11:00 AM	File folder	

The example directory contains a separate directory for the data that will be used for the forecasting model(s). Under the Data folder there are likely to be many sources of data that will be used by the FSC staff and the model(s) and again it is good practice to separate these. Again, a suggested example is below.



Name	Date modified	Type	Size
ADB, IMF, WB	8/19/2021 11:19 AM	File folder	
Bank of Mongolia	8/19/2021 11:19 AM	File folder	
Ministry of Finance	8/19/2021 11:01 AM	File folder	
National Statistics Office	8/19/2021 11:01 AM	File folder	
Other	8/19/2021 11:01 AM	File folder	

Model(s) documentation

The model(s) should be accompanied with clear documentation. The documentation should include a description of the methodologies used, the structure of the model, the source data and key contacts, the process involved in producing the forecasts including how to update and run the model, the key outputs including data and tables and charts. All models should contain the

metadata of the inputs and a log which records any changes made to the model including what, when and who.

Using the *Macro-fiscal forecasting framework* workbook as an example the following describes the components of the model.

The data sheets include (all data is currently sourced from the National Statistics Office):

GDP(E) (real, qtr) – contains the latest historical quarterly real expenditure GDP data by components

GDP(E) (nominal, qtr) – contains the latest historical quarterly nominal expenditure GDP data by components

GG Revenue (monthly) – contains the latest historical monthly revenue data by revenue item

GG Expenditure (monthly) – contains the latest historical monthly expenditure data by expenditure item

Labour force (Qtrly) – contains the latest historical quarterly labour force variables including employment, unemployment, labour force participation rate and the unemployment rate

Labour force (Ann) – contains the latest historical annual labour force variables, the quarterly labour force data are used to calculate the last historical year

Wages – contains the latest historical annual level of wages by sector

GDP(P) (real, ann) – contains the latest historical annual real production GDP data by sectors and forecasts by sector over the period 2021 to 2024

GDP(P) (nominal, ann) – contains the latest historical annual nominal production GDP data by sectors

LOG – contains a history of changes to the forecasting framework

Metadata – contains the metadata for the data that is used in the forecasting framework

The forecasting sheets include:

GDP(E) (real, ann) – the historical quarterly data is converted to annual data and the components of real expenditure GDP are forecast over the period 2021 to 2024. The sheet also reads in the calculated private/public split of GFCF from the Central Bank of Mongolia, *GFCF - BoM.xls*.

GDP(E) deflators (ann) – calculates annual historical deflators of the components of expenditure GDP and forecasts these over the period 2021 to 2024

GDP(E) (nominal, ann) - the historical quarterly data is converted to annual data and the components of nominal expenditure GDP are forecast over the period 2021 to 2024 using the forecasts of the real components from *GDP(E) (real, ann)* and the deflators from *GDP(E) deflators (ann)*

GDP(I) (nominal, ann) – contains the latest historical nominal income GDP and its components and forecasts over the period 2021 to 2024

GG Revenue (annual) – contains the latest historical annual data and calculates the final historical year using the monthly revenue data from *GG Revenue (monthly).* Calculates the historical effective tax rates for the major revenue items using data from *GDP(E) (nominal, ann)* and *GDP(I) (nominal,*

ann). Forecasts the effective tax rates and applies these to the forecasts of the proxy revenue bases to produce forecasts for major revenue items and total revenue

GG Expenditure (annual) – contains the latest historical annual data and calculates the final historical year using the monthly expenditure data from *GG Expenditure (monthly).* Contains the forecasts of capital expenditure from the latest MTFFS

Estimated relationships – contains several estimated macroeconomic relationships using Excel function *linest*. Forecasts several macroeconomic variables including household consumption, employment and wages using these estimated relationships.

Charts – contains several charts presenting outputs for use in publications

Vintages of forecasts

It is important that once the forecasts have been completed that the inputs and outputs are saved as a separate file and archived. All links should be broken, and the date of the completed forecasts included in the title of the file.

This serves two purposes. First, saving the forecasts ensures that there is a record keep of the underlying methods and judgements used to produce those forecasts that are reported in the FSC's assessment reports. It also preserves a record of the forecasts which can then be used to analyze the forecast errors. Second, by saving the forecasts and breaking any links you are also preserving the historical data which can also be analyzed to understand any data revisions that are subsequently made by the National Statistics Office.

Chapter 5: Fiscal responses to natural resources revenue and the role of the FSC

Opportunities and challenges

For resource-rich developing countries, resource wealth offers major opportunities to accelerate economic development and raise living standards. However, resource-rich developing countries also face the challenges of achieving sustained growth, while avoiding boom-bust cycles that stem from volatility, and sometimes exhaustibility in natural resource revenues. Resource exhaustibility gives rise to inter-temporal decisions of how much of the resource wealth to consume and how much to save, and revenue volatility requires appropriate fiscal rules and precautionary savings to prevent expenditure volatility and procyclicality.

Mongolian experience

While Mongolia's mineral resources has enabled strong economic growth and rising living standards the experience over the past decade has seen significant economic and budget volatility resulting in unsustainable increases in debt. Mongolia has a narrow economic base with minerals accounting for around 90 per cent of exports with China essentially the sole export destination. Notwithstanding the current strong recovery in 2021 from the COVID-19 recession this situation leaves Mongolia vulnerable to shocks.

It is therefore important that the Government establish credible fiscal policy objectives to support macroeconomic stability and economic development. The Fiscal Stability Law of 2010 sought to address a number of these challenges including establishing a set of fiscal rules to force fiscal discipline and establishing the Fiscal Stabilization Fund (FSF) to save the windfall revenue gains from high mineral commodity prices. The Future Heritage Fund Law of 2016 went further to establish a sovereign wealth fund (the Future Heritage Fund (FHF)) to accumulate savings into the future when Mongolia's mineral resources are depleted.

However, as previously documented the fiscal rules have been changed numerous times. The IMF (2019)[6] identified three critical challenges that have hampered the intent of the fiscal rules. In summary, the expenditure rule has a cyclical component, there were loopholes in the form of quasi-fiscal spending and there is no requirement to adjust for past slippages.

Further, World Bank (2021)[7] analysis highlights that over the past 15 years Mongolia's mineral resources have generated close to US$28 billion worth of mineral output resulting in around US$9 billion in revenue. However, the Government has borrowed against this in the order of around US$9 billion. While around US$1.4 billion in revenue was deposited into the Fiscal Stabilization and Future Heritage Funds around US$1.2 billion has been withdrawn.

It therefore appears necessary for a fundamental review of Mongolia's fiscal policy framework that informs decisions on how much to save and invest, how to smooth out revenue volatility, and how to deal with resource exhaustibility issues. It would be an opportunity to learn the lessons from the past decade.

[6] IMF (2019) Selected Issues *Making Mongolia's fiscal framework fit for the future* Country Report 19/298.
[7] The World Bank (2020) *Mines and Minds*.

A review of the fiscal framework

A review of the literature and recent analysis by both the World Bank and the IMF highlight that the approach to dealing with the challenges of exhaustible mineral resources – fiscal rules and a sovereign wealth fund – remains relevant.

Further, both agencies have proposed several changes to the current approach which as demonstrated have failed to achieve fiscal stability. These changes include:

Fiscal rules should be simplified and strengthened to achieve better communication and debt reduction.

- Reduce the debt target from the current 60 percent and specify the debt target in actual debt not net present value.
- Implement a transition to a lower expenditure growth cap to ensure steady debt reduction.
- Suspend the structural balance rule as it provides limited additional restraint and would simplify communication. Or move to a non-mining balance rule which is easy to observe and monitor.
- Possibly extending public debt to include SOE to help monitor and control state contingent liabilities.
- Consider a specific rule in election years to limited rapid spending growth.

In addition, the Fiscal Stability Council (FSC) should assess the Government's economic and fiscal forecasts and the adherence to its fiscal rules including recommending corrective measures where budget outcomes significantly deviate from the fiscal rules. The FSC could also be tasked with assessing the reasons, timeframe and 'corrective fiscal actions' when a temporary suspension of the fiscal rules is in place.

The objectives of the *Future Heritage Fund* (FHF) should be viewed in terms of broad asset-liability management of the government's balance sheet. This may suggest at the current juncture it might be more appropriate to divert deposits from the FHF to reducing debt.

In the context of the *Fiscal Stabilization Fund* specifying an appropriate balance between saving, consumption and investment of mining revenues recognizing that Mongolia's mineral resources will deplete over time.

There are many ideas and suggestions in terms of potential changes to the fiscal rules and funds. A comprehensive review of the Government's fiscal strategy and frameworks including fiscal rules and sovereign wealth funds appears timely. Not least in the current context of a strong recovery in economic growth accompanied by currently high mineral prices. The focus should not be lost on rebuilding the Government's fiscal buffers.

Potential roles for the Fiscal Stability Council

The FSC has a clear leadership role as an important institution within Mongolia's fiscal framework. This project and final report recommend that a key focus for the FSC's is to build its economic and fiscal forecasting capacity to be in a position to assess the Government's forecasts and adherence to its current stated fiscal rules. Holding the Government's forecast up to independent scrutiny and testing key assumptions through sensitivity analysis to highlight risks is a key role for the FSC and should inform better decision making.

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In terms of the FSC's role to increase fiscal transparency given past developments in the Fiscal Stabilization and Future Heritage Funds the FSC could have a key role in analyzing and reporting on annual developments in these funds including analyzing the quantum of deposits and withdraws and the reasons for those withdraws, and overall balances of the funds. An annual short report by the FSC would increase transparency and ensure any changes to the fund balances are made for sound fiscal reasons.

More fundamentally, a mature FSC would be expected to be involved in any review of Mongolia's fiscal framework. Such involvement would lend considerable credibility to a review.

In the interim, the FSC could produce an analysis of the flows and use of mining revenues over the past decade to assist in understanding how government decisions have allocated mining revenues and to answer the question 'where has the mining revenue gone?' This would involve an analysis of actual mining revenue received by the government and its allocation to the consolidated budget and to the various funds including deposits and withdraws and for what reasons.

A motivation for saving a portion of Mongolia's mining revenues is to provide for future budget pressures when mining resources are exhausted. One key pressure will come in the form of retirement incomes. The Australian approach to addressing these pressures through its retirement income system provides many lessons for other countries to consider. Box B provides a summary of the Australian Government's retirement income system and provides references to legislation and two extensive revies of the system undertaken in 2008 and 2019.

Box B: The Australian retirement income system

Most developed countries have a retirement income system to support their citizens as they age and retire from the workforce. Systems vary across countries and range from non-contributory public pensions which may be universal or means tested, compulsory public pensions with contributions linked to employment income, and voluntary savings which are often supported by tax concessions.

The Australian retirement income system has evolved over the past 110 years from a system which was largely focused on poverty alleviation via the Age Pension. The system now consists of three pillars which ensure all Australians have some income support in old age and encourage individuals to make provisions during their working lives to support their retirement needs.

Purpose of the retirement income system

Australia's retirement income system aims to allow older Australians to achieve adequate income in retirement, in a way that is sustainable for current and future generations. Although individuals often focus on accumulating assets for a retirement 'nest egg', generating income to support consumption in retirement is the primary purpose of the system.

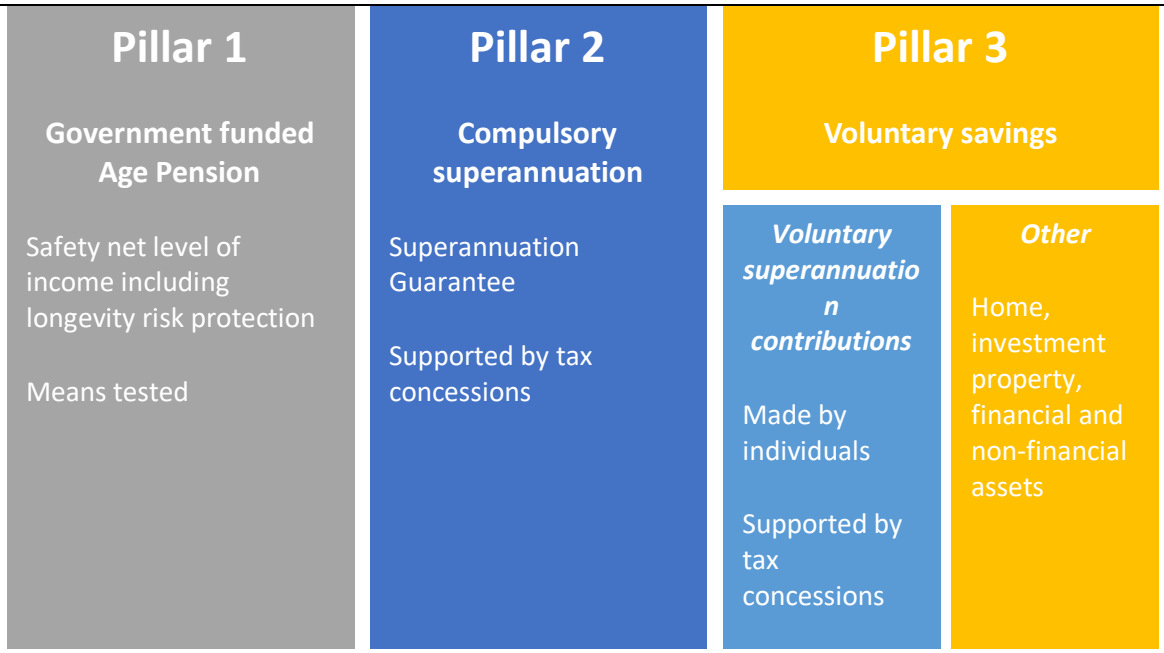
The retirement income system is not intended to boost private savings per se, nor is it intended to be a source of savings for the purchase of large assets during an individual's life (such as housing), or to assist with wealth accumulation to provide for inheritances. This is reflected in policy settings such as the restricted access to superannuation before preservation age, minimum drawdown rules for superannuation, and the means testing of the Age Pension.

The three pillars of Australia's retirement income system

The three pillars of Australia's retirement income system (Figure A) consist of:

- a publicly funded and means tested safety net in the form of the Age Pension;
- compulsory savings through the superannuation guarantee (SG); and
- voluntary savings through additional superannuation contributions and other financial or non-financial assets.

Figure A: The three pillars



Age Pension

A national Age Pension was first introduced in 1909. Eligibility for the Age Pension is subject to age, residency, and means testing requirements to target it to those who need it most. Its coverage and settings have been refined over time to reflect changes in community expectations, including through increases in the level of the Age Pension relative to average wages. It is a taxable payment, however the seniors and pensioners tax offset (SAPTO) raises the effective tax-free threshold for eligible older Australians above the rate of the Age Pension.

The maximum rate of the Age Pension is currently around $24,300 a year for singles, and around $36,600 a year for couples combined, with additional rent assistance available to non-home owners. The rate of the Age Pension is indexed twice a year to movement in prices and then benchmarked to a proportion of male total average weekly earnings (MTAWE). The eligibility age is 66 years, increasing incrementally to reach 67 years on 1 July 2023.

Compulsory superannuation

Compulsory superannuation was introduced in 1992 through the SG. Initially set at three per cent of an employee's ordinary time earnings, the SG rate has since increased to 9.5 per cent today and is legislated to reach 12 per cent on 1 July 2025. As at June 2018, 15.6 million people in Australia had a superannuation account (Productivity Commission 2018, p. 89), with median superannuation balances approaching retirement age (60-64 years) being $122,848 for women and $154,453 for men in 2016-17 (ATO 2019).

Tax concessions are provided for compulsory superannuation through a flat rate of 15 per cent tax on contributions and earnings. Low income earners (earnings below $37,000 per annum) are effectively refunded the tax on their contributions through the low income superannuation tax offset (LISTO) ensuring they do not pay more tax on these contributions than they do on their income. Contributions on behalf of high income earners (earnings of $250,000 and over per annum) are taxed at 30 per cent, which reduces the tax concession to these individuals. Earnings and income from superannuation are generally tax-exempt if aged 60 years or older. Savings

cannot generally be accessed until an individual reaches their preservation age, which is currently 57 years and is incrementally increasing to reach 60 years from July 2024.

Voluntary savings

Voluntary savings can occur through many investment vehicles, such as business assets, real estate including owner-occupied dwellings, and other financial and non-financial assets. They may be accrued inside or outside of the superannuation system. Voluntary savings serve several purposes, including wealth accumulation, and may not only be intended to provide retirement income. The choice of savings vehicles by individuals will depend on their personal circumstances and ambitions. For example, small business owners may choose to build and hold their wealth in their business assets through a trust structure due to the asset protection this structure can provide.

Voluntary superannuation contributions can be used to facilitate higher superannuation balances at retirement. However, total superannuation contributions are generally capped at $25,000 of pre-tax income and $100,000 of post-tax income each year. Voluntary superannuation contributions are a particularly important savings option for individuals who are not covered by compulsory superannuation.

Most household wealth for individuals aged 65 and over is held outside the superannuation system, with owner-occupied dwellings the largest asset for these cohorts. Outright home ownership supports retirement income by reducing ongoing expenses and acts as a store of wealth that can be accessed in retirement.

References

The legislation establishing compulsory superannuation in Australia is the Superannuation Guarantee (Administration) Act 1992.

There have been two extensive reviews of Australia's retirement income system. These are:

The Australia's Future Tax System Review (2008-2010)

Retirement Income Review (2019-2020)

Both reviews cover a significant amount of material and research and provide extensive analysis of the performance of the Australian retirement income system including recommendations for improvements.