

Appendix

RESPONSE TO NATIONAL PARLIAMENT QUESTIONS ON SEGMENTATION AND RECOMMENDATIONS

[18 October 2021]

Recommendation 1: The Petroleum Fund's Governance structure and the role for Câmara das Contas

The Petroleum Fund Law, approved by Law No. 9/2005, of 3 August, amended by Law No. 12/2011, of 28 September, establishes in paragraph 1 of article 14 that "The Minister [of Finance] establishes the Fund's investment policy...". This diploma provides for the mandatory prior consultation of the Investment Advisory Board on decisions relating to the investment strategy and management of the Petroleum Fund, and their presentation to the National Parliament. The diploma does not provide for consultation of the Câmara de Contas, nor does the Organic Law of the Câmara de Contas, approved by Law No. 9/2011, of 17 August, amended by Law No. 3/2013, of 7 August, assign this competence to the Câmara de Contas, so there is no legal basis for requesting technical opinions from the Câmara de Contas on the investment policy of the Petroleum Fund.

Recommendation 2: That the Minister of Finance be asked to urgently answer the written questions given to him at the hearing and estimate the net return associated with the investment to be made for three consecutive years, including the current year, on the investment of part of the wealth which until recently, the Petroleum Fund was being invested in assets with a variable rate of return (equity) in the new Liquidity Portfolio, as well as additional government responsibilities related to the management of the new three-year Liquidity Fund (2021 to 2023).

Question 1. What are the Minister of Finance's general comments on the Petroleum Fund's segmentation on the Liquidity Portfolio and low risk?

The reasons why the Petroleum Fund needed to be segmented into a liquidity and growth portfolio are clearly set out in the Explanatory Statement that was provided to National Parliament on 2 June 2021. It is worth revisiting the points made there and some of the history relating to the Fund's asset allocation.

The Petroleum Fund's design followed Norway's sovereign wealth fund, including the concept of permanent income. When the government's withdrawals are limited to the expected real return on the Fund's investments, the real value of the Fund can be maintained in perpetuity. The result is an even profile of withdrawals that balances the need for immediate expenditure and national development with maintaining savings for future generations.

The PF Law sets 3% of Petroleum Wealth as Timor-Leste's sustainable level of withdrawals. However, the Law in 2005 largely constrained the Fund to low-risk investments in order to allow time for the Fund's institutions to develop expertise and also build public confidence in the Fund. The changes in the PF Law that were introduced in 2011 correctly recognised that the equity allocation of the Fund needed to increase significantly to earn a 3% real return. The Law was amended to allow up to 50% of the Fund to be invested in equities. The Minister of Finance, adopting the advice of the Investment Advisory Board and with analytical support from the investment consulting firm Willis Towers Watson, decided in 2012 on an actual allocation to equities of 40%. The increase in equities was implemented incrementally and completed in the middle of 2014. Importantly, at that time, the fiscal framework meant that the Petroleum Fund was seen as a very long-term investor and therefore able to withstand the short-term volatility that necessarily comes from investing in equities.

Since then, the equity allocation has performed in line with expectations and has been the driver of the Fund's returns. The volatility in the Fund's performance has also increased with the higher weight in equities, which resulted in annual losses in 2015 and 2018. The fixed income portfolio, which includes cash and bonds issued by the US Government and other developed countries, has helped to offset the volatility in equity returns. When equity markets have fallen, government bonds have generally increased in value.

The Explanatory Note sets out how the Fund's circumstances have changed and the need therefore to segment the Fund. The Note identified three reasons why the Fund's balance is expected to decline over the coming years:

1. Withdrawals have averaged about 5% of Petroleum Wealth and 8% of the Fund's balance since "front-loading" was introduced. Front-loading means that expenditure will necessarily exceed the ESI guideline. While this was originally intended as a temporary phase to invest in infrastructure and human capital to enable national development, it has continued for 13 years and there is no commitment to reduce expenditure to sustainable levels. In the absence of other guidance, continued high expenditure and withdrawals need to be assumed when setting the investment strategy.
2. The petroleum revenue from Bayu-Undan is far lower than the inflows in the peak years of 2011 to 2013 and will soon end. The future and timing of the Greater Sunrise project is uncertain. High petroleum revenue allowed the Fund to grow in previous years when withdrawals were well in excess of the ESI.
3. Future investment returns are expected to be much lower than the Fund's historical returns. This is the result of the low interest rate environment and high valuations, which is addressed in our answer to question 8.

These projections mean that the Fund's investments **no longer have the benefit of a very long horizon**. The 2021 Budget Book projected that the Fund will be exhausted in 2033 and, in the interim, investments will need to be sold each year to finance withdrawals.

As a general rule, a longer investment horizon increases an investor's ability to bear risk. This is reflected in the asset allocations of other sovereign wealth funds; savings funds have longer horizons and higher equity allocations, while stabilization funds have a shorter horizon and hold more fixed interest. The Petroleum Fund's investment strategy needs to reflect its expected cash flow profile and investment horizon.

Our concern about net cash outflows first arose in 2015 after a sudden fall in oil prices and petroleum revenue projections in the previous year. In 2016, the IAB advised the Minister to introduce a cash allocation to finance the next 12 months of expected net outflows. A larger allocation to finance withdrawals, similar to the current three-year liquidity portfolio, was also carefully considered. However, at that time, there was some uncertainty in the projections for both government spending and future revenue so there was value in waiting for new information and adapting the investment strategy accordingly. The cash allocation was later amended to 5% of the Petroleum Fund, which was in line with expected annual outflows.

Withdrawals well in excess of the ESI have continued since then. The projections in the 2021 Budget were for continued drawdowns from the Fund resulting in a life of about 10 years. On this basis, the IAB advised the Minister that it is critically important to manage risk during the expected decumulation phase. Withdrawals over the next few years can be held in a separate portfolio invested in highly liquid, low-risk securities. We refer to this as the liquidity portfolio but it could also be referred to as the withdrawals

portfolio and will be transferred to CFET when required. Please note that the annual transfer from the Petroleum Fund to CFET is limited to the approved amount set by the Parliament.

The remainder of the Fund will continue to be invested in the current asset allocation of 65% fixed interest and 35% equities, noting that the 40% equity allocation was reduced by 5% to account for the government's decision for the Fund to invest in Timor Gap E.P. in 2019. The growth portfolio has a longer horizon and is better suited to equity's higher volatility. The investment risk in the total Petroleum Fund is reduced because the liquidity portfolio does not hold equities. The equity weight in the total Fund, excluding the Timor Gap loan, was reduced from 35% to just under 30%. The expected volatility of the Fund reduces as does downside risk; the liquidity portfolio will not decline in value if there is a sharp fall in equities.

Segmentation also means that each portfolio now has clear investment objectives that correspond with the Fund's dual objectives of financing and saving. The liquidity portfolio's role is to finance withdrawals over the next three years and is therefore comprised of very liquid and low risk assets. The growth portfolio includes equities and is thereby expected to earn higher returns but will be subject to higher volatility.

Segmentation reconnects the Fund's investment strategy with fiscal policy. When withdrawals over the next three years are expected to be higher, more money will be held in the liquidity portfolio. If withdrawals are expected to be lower, less will be held in the liquidity portfolio.

Q2. Excellency Minister, in the segmentation of the Petroleum Fund, you say “the proposal of the segmentation of the Petroleum Fund was approved by the Council of Ministers on the 19th of May 2021”, was it really an approval or a presentation? If it was approved by the Council of Ministers then why are there no approval documents.

It is useful to start with the governance structure provided by the Petroleum Fund Law. Under the Law, the Minister of Finance is responsible for making decisions on the Fund's investment strategy and management. (Article 11.1, 11.2) The Minister of Finance is acting on behalf of the Government and may choose to consult with the Council of Ministers before making a decision about the Fund.

In the case of this decision, the Minister of Finance and his staff from the Petroleum Fund Policy and Management Office (PFPMO) presented on segmentation to the Council of Ministers on 14 April 2021. This followed advice from the IAB in November 2020 to segment the Fund. The Council of Ministers approved the segmentation of the Petroleum Fund into a liquidity and growth portfolio when it met on 19 May 2021. The Council of Ministers confirmed that the details on implementing segmentation were to be decided by the Minister of Finance with advice from the IAB and in consultation with the Banco Central de Timor-Leste.

The approval of the Council of Ministers on 19 May 2021 was also sent to the PN on 2 June and is referred to by the Commission C report in paragraph 2 on page 4.

Q3. As per the information on the Segmentation of the Petroleum Fund and as required by paragraph 5 of article 14, “the Minister of Finance, as responsible for the overall management of the Petroleum Fund, shall inform the National Parliament of changes to the principal asset allocation prior to their implementation ” and which in our mere opinion on the contrary, since its implementation was already on July 1, 2021, which did not comply with this law, as this is an investment that should be analysed very carefully in what it says respect in its implementation. Please comment.

Recommendation 3: That the Minister of Finance be requested to urgently submit to the National Parliament its interpretation regarding the legal content of the provisions of paragraph 5 of article 14

of the Petroleum Fund Law and to do so in writing and preferably by the date of the “presentation” of the 2022 State Budget proposal to the National Parliament.

Article 14 paragraph 5 of the PF Law states that *“O Ministro apresenta ao Parlamento Nacional uma síntese da sua proposta de política de investimento do Fundo Petrolífero juntamente com o Relatório Anual do Fundo Petrolífero ou antes da tomada de quaisquer decisões que impliquem alterações na afetação dos principais ativos.”*

Thus, the Minister should present the Petroleum Fund's investment policy proposal to the National Parliament at two different times: 1) together with the Petroleum Fund's Annual Report and 2) before taking decisions that involve changes in the principal asset allocation.

As for the first case, under the terms of paragraph 1 of article 23 of the Petroleum Fund Law, “[The] Government shall present to Parliament, in each Fiscal Year, an Annual Report on the Petroleum Fund, at the same time as it presents to the Parliament the annual financial statements for that year.”, which must occur “within seven months from the end of the financial year” as provided for in paragraph 1 of article 45 Law no. 13/2009, of October 21, Budget and Financial Management, amended by Law No. 9/2011, of August 17, and by Law No. 3/2013, of August 7th.

Thus, the investment policy must accompany the Annual Report on the Petroleum Fund to be sent to Parliament by July of each year.

In the second case, the investment policy should be sent before *“...da tomada de decisões que impliquem alterações na afetação dos principais ativos.”*

In this case, Parliament were notified of the change and its implementation date and provided an explanatory note from the Ministry of Finance setting out the reasons for the change. The advice from the IAB recommending the change in the investment strategy was also provided to National Parliament. The proposal had been carefully considered by the Minister and the Petroleum Fund’s institutions over a number of months.

Notification of the Parliament is sufficient under Article 15(4) and this is in line with the legal interpretation of the legal team in the Parliament as cited in the Commission C conclusion in their first paragraph.

Informing Parliament prior to a material change in the Fund’s asset allocation ensures transparency, which is identified as a fundamental principle in Article 32 of the PF Law. The PF Law clearly provides that it is the Minister’s responsibility to make decisions on the Fund’s investments and management and sets out the rules for establishing the investment policy in Article 14. It is not Parliament’s role under the Petroleum Fund Law to approve changes in the Fund’s investments. -Parliament’s role is to enact the PF Law, which includes specifying the framework for the Fund and key guidelines such as the asset allocation limits in Article 15. Parliament also assess and vote on the State Budget and the consequent withdrawals from the Petroleum Fund.

What constitutes a “change to the principal asset allocation” under Article 14(5) is not defined in the PF Law. The Ministry of Finance interprets the provision as applying to a material change in the risk-return properties of the total Fund. The Ministry of Finance and the Council of Ministers decided that the National Parliament should be notified in advance of the segmentation of the Fund, notwithstanding that the reduction in the Fund’s equity allocation was slightly more than 5%. It was important for members of the Government and National Parliament to understand the implications of government expenditure and withdrawals on the Fund’s investments and how segmentation will address this in July and going forward.

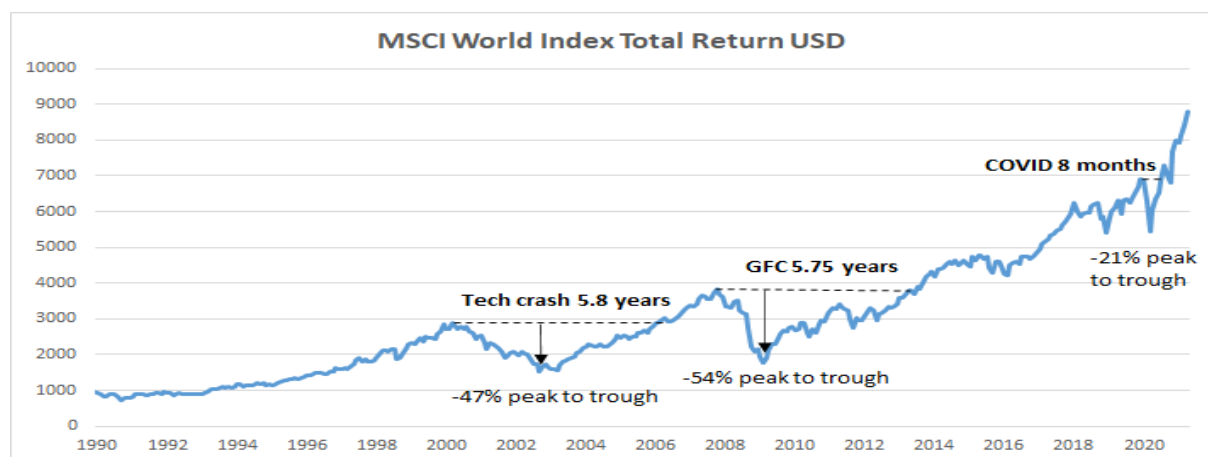
Lastly, the Ministry of Finance would have liked the opportunity to meet with Parliament prior to 1 July 2021. This was referred to in the Minister’s letter to the Prime Minister. When dealing with the Fund’s investments, the Ministry of Finance needs to carefully balance timeliness of implementing changes to the Fund’s investments with the desire that Parliament and other stakeholders are fully informed on the Fund’s developments. In the circumstances, it was thought that the one-month notice period to Parliament with the detailed explanatory note was appropriate. It was critical for the Ministry of Finance to act as quickly as possible to manage the risk in the Fund after it received the IAB’s advice on the details for implementing segmentation on 2 June 2021. A sudden fall in equity markets would have been a bad outcome for the Petroleum Fund.

To be clear, the notification process in Article 14.5 of the PF Law only applies to changes to the investment policy that comply with the other parameters in the Petroleum Fund Law. Where it is proposed to amend the Petroleum Fund’s investment strategy by modifying the Petroleum Fund Law or other legislation, a longer consultation period would be warranted with the objective of seeking consensus.

Q4. Excellency Minister, the world is going through the COVID-19 pandemic which could have implications for the market price. Please provide a comment regarding this investment

The reaction of financial markets to the COVID-19 pandemic illustrates the volatility that comes with investing in equities. The Petroleum Fund’s equity portfolio lost over 20% in quarter 1 of 2020. At the same time, the Fund’s fixed interest portfolio rose by about 4%, which helped to offset some of the losses in equities. The quarterly return for the total Fund was -4.7%, an investment loss of \$844 million.

After an equity market crash, it will usually take investors a number of years to recover their losses. For example, it took developed equity markets almost 6 years to return to the levels that preceded the Tech Crash and the Global Financial Crisis and Great Recession (please refer to slide 17 of the presentation made to Commission C and D on 14 and 15 July). In this instance, the Petroleum Fund was very fortunate that global equity markets recovered in record time. This resulted from extraordinary levels of fiscal and monetary policy support; an expectation that economic activity could quickly recover once public health restrictions were ended; and optimism that successful treatments and vaccinations could be developed. Investor sentiment was boosted in the fourth quarter of 2020 with the announcement of positive news on vaccinations, which helped the Fund’s equity portfolio return about 14% for the year. This was truly a remarkable turnaround from the losses in the first quarter.



Source: Bloomberg, PFPMO calculations.

In 2021, equity markets continued to perform strongly as successful vaccination programmes enabled many developed economies to open up. For the year until June 2021, the Fund’s equity portfolio has

returned almost 14%. Many commentators are concerned that equity prices are now too high relative to their economic and corporate fundamentals. When equity valuations are high, there is a risk of a correction, leading some commentators to suggest that now is a good time for investors to reduce their equity exposure.

However, the Ministry of Finance's decision to segment the Petroleum Fund was a strategic consideration that the Fund's equity risk needed to be reduced given the likely withdrawal profile and associated investment horizon. The Fund is managed on the basis that correctly timing markets is very hard and we do not seek to forecast short-term market movements. While it was not driven by a view on the outlook for financial markets, selling equities in July 2021 locked in some of the strong gains of the past two and a half years. This is a good outcome in light of the crash in equities in the first quarter of 2020.

Q5. Excellency Minister, in addition to investment advice "Willis Tower Watson" on the projection of return, do you still have more than one advice for your analysis?

The Investment Advisory Board (IAB) advises the Minister of Finance on the Fund's investment strategy. The Board includes members with significant investment expertise, a requirement in the PF Law. By way of example, one member has many years of international experience in investment management and was part of team which set up the PF in 2005. Another member is a professor in finance who also has many years of practical investment experience. The IAB is supported by a Secretariat comprised of Petroleum Fund staff from the BCTL and the Ministry of Finance. This includes national staff with international qualifications as well as two specialist international advisors with significant experience in financial markets.

The Ministry of Finance has followed best practice and the requirements in the PF Law. The Ministry of Finance acted on the advice of the IAB to reduce investment risk and segment the Fund. The IAB considered an independent investment expert's analysis before making its recommendation in November 2020. Willis Towers Watson's report supported segmenting the Fund. The IAB's advice was provided to the Parliament on 2 June 2021 along with the explanatory note.

It is worth highlighting that the Ministry followed a similar process prior to amending the PF Law in 2011 to allow for a higher equity allocation and in 2012 when the decision was made to increase the equity allocation to 40% of the Fund. At that time, the IAB advised on the changes and WTW was also engaged to provide supporting analysis. The IAB and the consulting firm agree that the Fund's circumstances are now very different and that risk needs to be managed.

Q6. Minister, in the FP segmentation, page 1. It says "the creation of the Liquidity Portfolio is to finance the withdrawals in the next three years", the question is why only and not more than three years. Please comment

The Petroleum Fund serves two objectives: 1) financing government expenditure; and 2) saving any excess. The purpose of the liquidity portfolio is to put aside funds to finance withdrawals over the next few years in low-risk investments. The main change under segmentation is that the Fund holds about three years of withdrawals in very low-risk assets rather than about one year of withdrawals in Cash prior to the change.

As described in the explanatory note, the liquidity portfolio needs to be topped up at the beginning of each year to cover the next three years of withdrawals. This involves selling securities, both equities and bonds, from the growth portfolio. It is worth noting that the Fund's equity holdings are also very liquid in that they can easily be sold but prices are more volatile. The size of the annual transfers from the growth portfolio to the liquidity portfolio depends on the return in the growth portfolio. When the return is

negative, the transfer is limited to 50%; when there is a high return, the transfer increases to 150%. This rule will help to limit selling equities after periods of poor performance and sell more after strong performance.

The Ministry of Finance, the IAB and WTW considered putting aside more than three years of withdrawals in the liquidity portfolio. Covering three years of withdrawals was thought to provide a good balance between reducing the risk in the Fund to finance withdrawals via the liquidity portfolio and maintaining exposure to the upside from equities that comes via the growth portfolio. This reflects the higher uncertainty about the future fiscal policy and withdrawals from the Fund as the projection period increases.

Q7. Minister, in the PF segmentation says “high liquidity and low liquidity bonds”, could you explain a little about this issue.

The explanatory note on segmentation explained that the liquidity portfolio is comprised of high liquidity and low risk securities. The portfolio will be invested in US dollar cash and money market instruments and short-term US Government Treasury bonds. The bonds are highly liquid, meaning they can be quickly sold and converted into cash. The bonds are low risk in two senses: they are issued by the US government and therefore have little or no credit risk; and they have short maturities of 1-3 years meaning there is low interest rate risk. The nature of the investments in the liquidity portfolio corresponds with the expected investment horizon.

Q8. In the FP segmentation on page 6, it says “the objective of the Growth Portfolio is to benefit from the higher return expected in the stock portfolio, but which is higher risk and more volatile”. How much is the return projection?

Recommendation 4: That the Ministry of Finance be requested to calculate the forecast of losses/gains arising from the new investment diversification strategy of the accumulated wealth of the Petroleum Fund.

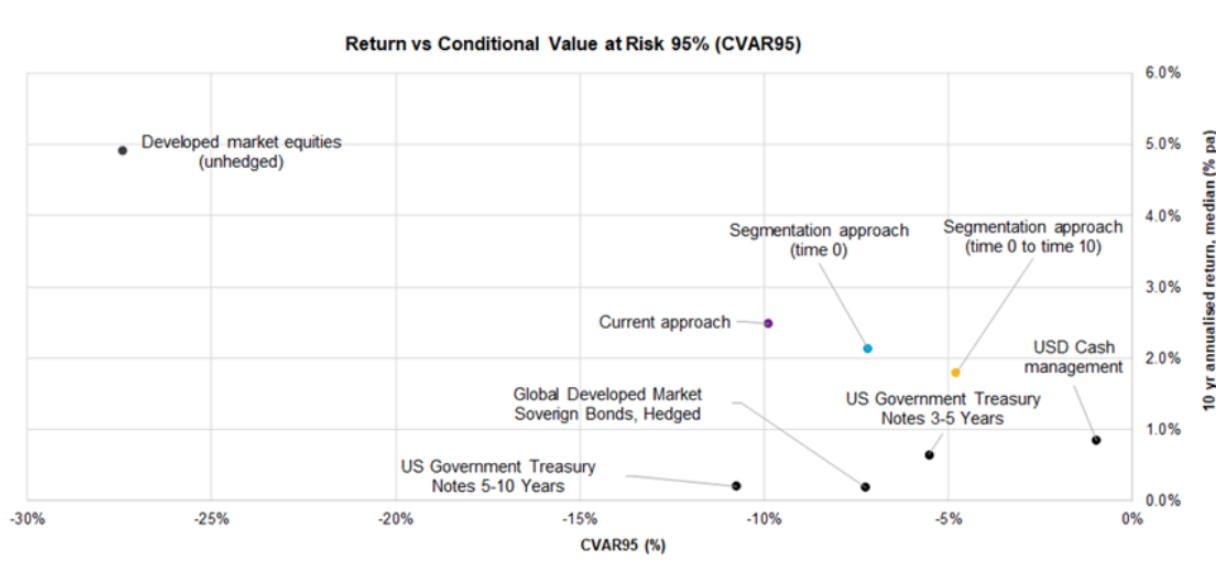
Article 14 of the PF Law refers to the Minister of Finance establishing an investment policy that applies the principles of diversification, with the objective of maximising the **risk-adjusted financial returns** after taking into account the purposes for which the Fund is established, the constraints under which it operates, and **Timor-Leste’s ability to bear risk**.

It is important to note how often that Article 14 refers to risk. Decisions on financial market investments need to take into account not only the expected return but also the asset’s risk and how it is expected to perform relative to other assets in the portfolio. Equities provide higher expected return but necessarily come with higher risk. Risk includes volatility, which is often measured by the standard deviation of returns, and also “downside risk”.

One measure of downside risk is the conditional value at risk (CVAR). CVAR95 is the expected loss if the worst 5% of returns are realised. The figure below is sourced from WTW and shows how the expected return needs to be balanced with risk when deciding on the investment policy. The “current approach” in the diagram is the risk and return parameters of a portfolio invested 35% in equities and 65% in fixed interest. That was our approach to the total Fund prior to segmentation and now applies to the growth portfolio component. The expected annualised return over the next 10 years is 2.5%, while the CVAR95 is -9.9%, which represents an annual loss of \$1,881 million on a \$19 billion fund. Segmentation involves giving up some of the expected return for a reduction in risk. When segmentation is introduced at “time 0”, the total Fund’s expected return over the next 10 years is 2.1%, while the CVAR95 declines to -7.2%, an annual loss of \$1,368 million on a \$19 billion fund. Given the Petroleum Fund’s shortening horizon, the

likelihood of recovering from sharp falls in value is lower and risk should be reduced. Hence the lower equity allocation in the total fund that results from segmentation is preferable to the 35% equity allocation.

The figure also illustrates the expected return and the downside risk measures for the individual assets, namely, equities, bonds and cash. While investing in equities provides an expected return of 4.9% over the next 10 years, almost reaching the implied 3% real return target, it brings with it much higher risk. Investors that are completely invested in equities need to be prepared to lose 27.4% of their investment if stock markets happen to have a very bad year; this is a loss of \$5,206 million on a \$19 billion fund fully invested in equities. Again, the trade-off between returns and risk is critical.



Source: WTW, 2021

Another approach for investors to balance risk and return is to assess Sharpe ratios or, similarly, the expected return scaled by the standard deviation. Those are shown below for the output from WTW’s model. Using this simple approach, segmentation is expected to provide higher risk-adjusted returns than a portfolio of 35% equities and 65% fixed interest.

	10 yr annualised return, median (pa)	Standard Deviation of 1 year return (pa)	Return/Standard deviation
Liquidity portfolio (US Cash)	0.80%	1.20%	0.67
35% equities/65% fixed interest	2.50%	6.70%	0.37
Segmentation approach (time 0)	2.10%	5.00%	0.42
Segmentation approach (average yr1-yr10)	1.80%	3.50%	0.51

Source: WTW, 2021. MoF calculations

The analysis above is for the expected performance over the next 10 years. Recommendation 2 of the National Parliament’s report requested estimating the net return associated with the investment to be made for three consecutive years. The Ministry of Finance believes that the horizon is too short to predict investment returns with any confidence. Even after 3 years, there is a significant risk that equity investments will incur a loss.

Astute readers will have noticed that the expected returns are well below the Fund's earlier implied target return of 5% in nominal terms, which is the 3% ESI and assumed inflation of 2%. The explanatory note identified low expected returns as one of the challenges to the Fund's sustainability. Returns over the next 10 years for both equities and bonds are expected to be low relative to their history and what is expected in normal market conditions. The low projections reflect the current conditions of very low interest rates and also high equity valuations. In contrast, when the PF Law was amended in 2011 and a 40% equity allocation decided on in 2012, WTW projected that a 40% equity allocation could meet the implied 3% real return target with a reasonable degree of confidence. Now even a 100% equity allocation is expected to fall just short of a 3% real return over the next 10 years.

WTW's return and risk projections are broadly similar to those of other providers over a similar forecast horizon. This is a challenging environment for all investors.

Recommendation 5: That the National Parliament seek to ascertain from the Ministry of Finance the justification for a transfer of 1.028 billion USD from the growth portfolio to the liquidity portfolio in this first year of using the newly created PF segmentation model and not 1,000 million USD according to segmentation information sent to the National Parliament (year 2021)

As mentioned in the Explanatory Notes (paragraph 1 in page 6) and as detailed in the slide 19 – *Implementasaun Segmentasaun* of the presentation made to Commission C and D, the initial transfer to the Liquidity portfolio from Growth portfolio is \$3.028 billion. That amount was rounded to one decimal place, \$3.0 billion, in the explanatory note.

This includes the transfer amount for the current year 2021, which equals the total withdrawal amount approved by the Parliament of \$1,377.6 million. This is the maximum amount that can be withdrawn from the Fund in 2021. As explained previously, up until May 2021, \$350 million had been transferred to the CFET account. The amount accounted for in the liquidity portfolio for 2021 is \$1,377.6 million minus \$350 million or \$1,027.6 million, which is rounded to \$1,028m in the presentation. The amounts for 2022 and 2023 are \$1.0 billion each year, respectively. These were the Ministry of Finance's estimates of withdrawals when segmentation was implemented. The liquidity portfolio will be adjusted in 2022 to account for the approved withdrawal in 2022 and the new projections for withdrawals in 2023 and 2024. As this process occurs each year, the Fund's investments adjust for new information about fiscal policy.

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