ESTABLISHING A PETROLEUM FUND

FOR TIMOR-LESTE

PUBLIC CONSULTATION DISCUSSION PAPER

MINISTRY OF PLANNING AND FINANCE

October 2004

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The discussion paper has been prepared by advisers and staff in the Ministry of Planning and Finance, drawing on resources and experiences from other organizations in both Timor-Leste and abroad. Questions on technical aspects of the Petroleum Fund can be directed to Mr Thomas Ekeli, tekeli@mopf.gov.tp. Questions on technical aspects of the petroleum revenue forecasts can be directed to Mr Bruce Taplin, btaplin@mopf.gov.tp. Questions in other languages than English can be directed to Mr Cristino Gusmao, cgusmao@mopf.gov.tp.

FOREWORD

As Prime Minister I am pleased to put forward for public consultation this discussion paper on the establishment of a Petroleum Fund for Timor-Leste. The aim is that the Petroleum Fund will be a tool that can contribute to a wise management of Timor-Leste's petroleum resources, to the benefit of both current and future generations.

When establishing a Petroleum Fund there are many issues to consider, but particularly three questions stand out:

- How much should we spend of the petroleum wealth now, investing in infrastructure and human development, and how much should we save for the future?
- How should the Petroleum Fund be designed and managed?
- How can we ensure transparency and broad public support for the management of Timor-Leste's petroleum wealth?

Experiences from other countries show that petroleum wealth can easily become a curse instead of a blessing. In fact, many countries have ended up poorer and societies more divided after they discovered oil and gas.

In order for Timor-Leste to achieve a good management of the petroleum resources, it is important that people are well informed and that we can establish a strategy with as broad an agreement as possible. It is crucial to develop a clear sense of ownership of the Fund amongst the Timorese people.

With this discussion paper I invite and encourage all people of Timor-Leste and other interested parties to make themselves familiar with the idea of a Petroleum Fund, and to come forward with constructive comments to the issues raised in this discussion paper.

Following a broad public consultation, the Government intends to propose to Parliament early next year an act establishing the Petroleum Fund. Subject to the approval by Parliament and promulgation by the President, the Petroleum Fund can be operational from 1 July 2005, which is the start of the 2005-2006 fiscal year.

Dr Mari Alkatiri
Prime Minister

Contents **Page**

I. EXECUTIVE SUMMARY

Timor-Leste possesses substantial wealth in the form of petroleum reserves in the Timor Sea. If managed wisely, this petroleum can be a catalyst to further wealth creation and deliver higher living standards to the Timorese people. However, the petroleum reserves are not unlimited and may be exhausted within a period of just 20-30 years. Furthermore, the income from the extraction of petroleum is uncertain and is likely to fluctuate a lot over the years.

At the same time, Timor-Leste faces substantial economic and social expenditure demands. It is crucial that the right balance is struck between current expenditures – that can help deliver economic growth, social services and political stability over the medium term – and the entitlements and choices of future generations. In this effort, a Petroleum Fund can be a useful instrument to conduct economic policy consistent with a wise management of the petroleum wealth.

The Petroleum Fund that is proposed in this discussion paper builds on international best practice and is based on the Petroleum Fund model used in Norway. The main features of the proposed Petroleum Fund for Timor-Leste are as follows:

- **The Fund's income**: all of Timor-Leste's petroleum revenues will flow into the Fund, as well as the return on the Funds's investments.
- **The Fund's expenditure**: the outflow from the Fund will be the amount necessary to finance the government budget deficit (excluding petroleum revenues). There is therefore a direct link between the budget policy determined by Parliament and the development of the Fund. Since sound budget policy is key to the management of the petroleum wealth, the Government has established *a longer-term fiscal policy* as a benchmark for how much money should flow out of the Fund.
- **Management of the Fund**: the savings in the Fund are to be invested securely in low risk financial assets abroad. The Minister of Planning and Finance has overall responsibility for the management of the Fund, and will be advised by an Investment Steering Committee. The operational management will be delegated to the Banking and Payments Authority.
- **Measures to safeguard a wise management of the petroleum wealth**: there will be a high degree of transparency of operations, including comprehensive and accessible reporting requirements – both on the management of the Fund and on whether the spending of petroleum revenues is consistent with long-term considerations. One can also consider establishing an independent *Council of Eminent Persons* to inform Parliament on the operations of the Fund, acting as a "watchdog" and contributing to an informed public debate and a sound management of the petroleum wealth.

The Petroleum Fund does not guarantee a wise management of the petroleum wealth, but it can be a useful tool – provided it goes hand in hand with a fiscal policy framework that strikes the right balance between current consumption, investing in physical assets (infrastructure and human development) and saving in financial assets.

A detailed treatment of the key question in this regard – when and how much of the petroleum revenues should be spent – goes beyond the scope of this discussion paper. This paper focuses on the establishment of a Petroleum Fund as a **savings instrument**. However, the paper also summarises the Government's **savings policy** that will determine the balance between saving and spending.

The Government's savings policy aims to maintain the real value of the petroleum wealth. This policy suggests a gradual increase in government expenditures based on current estimates of the petroleum wealth. This room for fiscal maneuver should be used wisely to invest in human capital and infrastructure, which can deliver stronger economic growth and improved public services. This policy would at the same time ensure that sufficient financial savings are deposited in the Petroleum Fund so that in later years one is able to withdraw an equal amount from the Fund. Such a savings policy can therefore be seen to strike a good balance between the interests of current and future generations.

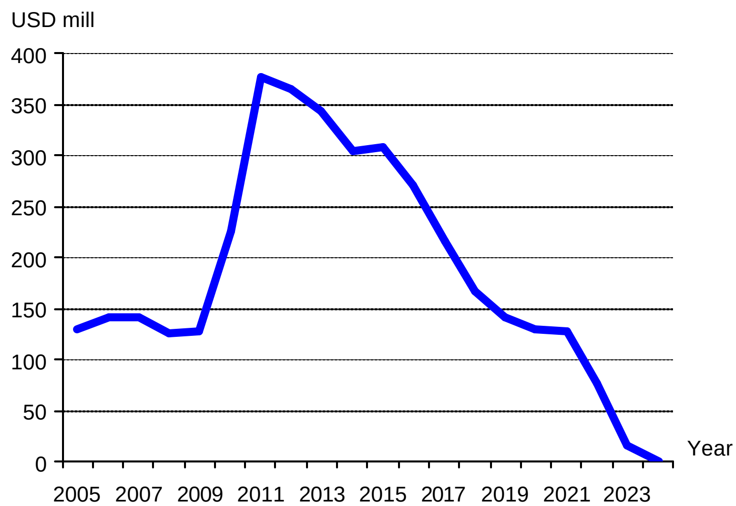
II. TIMOR-LESTE'S PETROLEUM WEALTH

Timor-Leste has significant petroleum resources that are owned by the State. Since revenues from the extraction of oil and gas will play a vital role in facilitating development of Timor-Leste's economy, great importance is being placed on building a sound framework for the management of these resources.

A. Large, but uncertain, oil and gas revenues

Production of oil and gas in the Timor Sea is already providing Timor-Leste with significant revenues[1], and the outlook is for these revenues to rise for the next decade or so – before tapering off as the petroleum reservoirs are depleted. Updated projections on petroleum revenues show the following development:

Figure 1. Petroleum revenue projections



Significant uncertainty

However, it is important to bear in mind that the exact value of the petroleum resources is uncertain, and this uncertainty needs to be taken into account when designing a strategy to manage the petroleum wealth. We can list at least four important types of uncertainty:

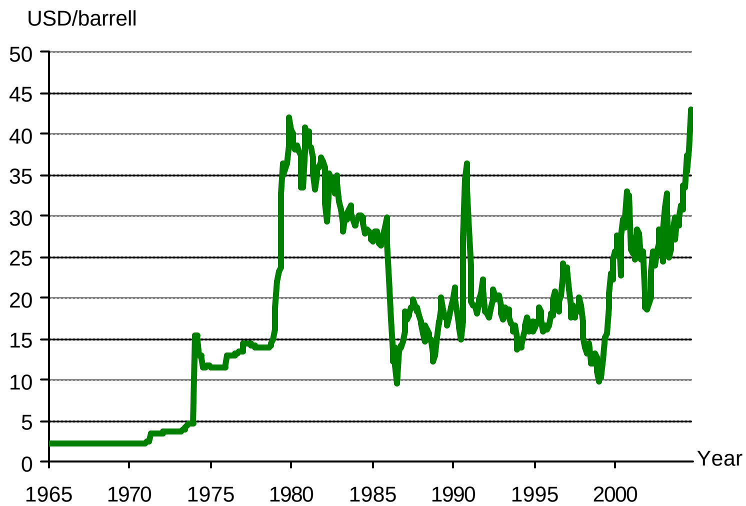
- **Geology**: We do not know for certain the size of Timor-Leste's oil and gas reserves. The reserves that can be extracted from already known oil and gas fields can prove

[1] Total Timor Sea revenues for the 2004-05 fiscal year are currently estimated at $ 129 million. This compares to total expenditures (in the Combined Sources Budget 2004-2005) over the central government account (CFET) of 75 million, total combined sources expenditures of 245 million (which also includes activities through the UN and other development partners), and GDP at less than 350 million. And the dominance of petroleum revenues is likely to rise in the years to come as petroleum production picks up.

smaller or larger than originally estimated, and there may be discoveries of new fields.

- **Legal**: There is legal uncertainty regarding the maritime boundaries between Timor-Leste and Australia, and negotiations are currently going on to settle the issue. A clarification here may affect the estimate of petroleum reserves.
- **Operational**: Petroleum activities can be complex, and there is uncertainty surrounding the pace and costs of extracting oil and gas.
- **Oil price**: Petroleum prices have historically shown large fluctuations, and there is great uncertainty surrounding which price Timor-Leste will get from the sale of oil and gas in the future. The chart below illustrates the variability of oil prices (which also affect prices of other petroleum products).

Figure 2. Historical oil prices



The above mentioned factors give rise to a significant degree of uncertainty regarding the size of Timor-Leste's petroleum revenues. Updated revenue projections (which assume the oil price falling gradually towards USD 27 per barrel) show petroleum revenues of around $ 3.7 billion.

However, the estimate of the petroleum revenues shrinks to about $ 2 billion if you assume oil prices turn out USD 5 per barrel lower. And the estimate rises to about $ 5 billion if oil prices are correspondingly higher. Similarly, estimates of the petroleum revenues could be significantly altered if other oil and gas fields were to be included.

While these various estimates for the petroleum wealth are large relative to Timor-Leste's economy, it is important that people do not form unrealistic expectations that petroleum will solve all our problems. The key to achieving a strong and sustainable growth in living standards rests instead with the development of human resources.

B. Petroleum wealth – a blessing or a curse?

Significant petroleum resources can be seen as a gift from mother nature to Timor-Leste, a gift which has the potential to improve the standards of living of its people. However, even if the petroleum wealth is managed wisely, it also important to bear in mind that petroleum activities can make the economy more vulnerable to instabilities and cost pressures. Spending of petroleum revenues normally leads to structural changes[2] in the economy, where some groups lose out (such as agriculture and manufacturing industry). The presence of petroleum wealth also tends to contribute to a degree of "laziness", in the sense that there is often less attention paid to the continuous need to reform work practices in the economy.

There is a distressing amount of evidence that petroleum wealth in many instances is not managed wisely. To a large number of the petroleum producing countries, one can indeed question whether petroleum has been a curse instead of a blessing. Mr Juan Pablo Perez Alfonso, former Venezuelan oil minister and a founder of the Organisation of Petroleum Exporting Countries (OPEC), reportedly made the following statement in the early 1970s:

> *"Ten years from now, 20 years from now, you will see, oil will bring us ruin. It's the devil's excrement."*

Sadly, this statement has come true in many petroleum producing countries. It appears that the presence of petroleum wealth often leads people to engage in activities to acquire benefits from the petroleum wealth, but where the activities are not conducive to improving the welfare of the country. Many petroleum producing countries are associated with negative developments like:

- Poverty and lower economic growth
- Prone to conflict, war and civil strife
- Corruption
- Unrepresentative government

It is imperative that Timor-Leste avoids these threats. This demands prudent policies, transparency and accountability in a wide range of areas. This includes the design of the regime to manage the extraction of oil and gas, payments of royalties and taxes by oil companies, planning and execution of government budgets, and the management of the financial savings in a Petroleum Fund (see Section IV).

The design and operations of the Petroleum Fund is in this respect important. By introducing a high degree of transparency and contributing to an informed public debate, the Petroleum Fund can bolster broad support for the strategy of managing the petroleum wealth to the benefit of all Timorese – now and in the future.

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[2] The term "Dutch disease", which originated in the Netherlands after the discovery of North Sea gas, is often used to characterize how the discovery of a natural resource leads to deindustrialization. The mechanism is that the discovery of natural wealth raises domestic spending, which leads to higher inflation and an internationally less competitive economy.

III. THE DESIGN OF THE PETROLEUM FUND

Petroleum revenues complicate fiscal policy. Petroleum revenues are a blessing if they are well managed, but a curse if they are poorly managed. Unlike other revenues, petroleum revenues will eventually run out and are particularly volatile and uncertain. The corresponding fiscal policy challenge is to save part of the revenues (the savings challenge) and to stop the volatility damaging the economy (the stabilization challenge).

Both theory and experience teach us that a Petroleum Fund is no guarantee that the petroleum wealth will be well managed. A Petroleum Fund cannot be a substitute for good fiscal policy. A poorly designed fund will do more harm than good, but a well-designed fund can help the government achieve its sound fiscal policy objectives.

A. Reasons to establish a Petroleum Fund

An important reason for establishing a Petroleum Fund is the fact that petroleum revenues are different from other revenues the government collects:

- **Petroleum revenues are not income in the usual sense**, since they involve a depletion of a non-renewable resource. Production of oil and gas can be seen as merely transforming the government's petroleum assets into financial assets.
- **Government petroleum revenues are different from other tax revenues**. While domestic tax revenues reduce spending in the private sector, petroleum revenues do not. An increased use of petroleum revenues may therefore result in too high economic activity, generating cost pressures and weakening the basis for those sectors of the economy that are exposed to international trade.
- **Revenues from the petroleum sector show greater variations over time** than other revenues, partly as a result of fluctuations in the price of oil. The dependence on petroleum revenues implies that the fiscal budget should be sufficiently robust to withstand a temporary decline in oil prices without having to substantially alter economic policy.

The nature of petroleum revenues, combined with the fact that they are so large relative to Timor-Leste's economy, means that they pose a particular challenge for fiscal policy. In that effort, a Petroleum Fund can be a useful instrument to build popular support for sound fiscal policy and a wise management of the petroleum wealth.

The key rationale why a fund could help countries manage their petroleum wealth well is political. Saving petroleum revenues means spending less, something which can be notoriously difficult. It often means running large and long-lasting budget surpluses, which is hard to justify when a country may so urgently need development and politicians want to be popular and re-elected (even if they see the case for saving the petroleum wealth). Funds can help crystallize public support for saving petroleum resources, let the public see how much petroleum revenue is being saved, and allow politicians to justify budgets that build up fund resources by referring to the need to save for future generations.

B. Design principles

From theory and international experience[3], some best-practice design principles for a Petroleum Fund emerge.

- **The fund should be coherently integrated into the budget process.** This is best achieved by ensuring the fund operates only as a government account rather than a separate institution[4]. Budget formulation and reporting should focus on the consolidated presentation, and expenditure should be executed by the Treasury (within the Ministry of Planning and Finance). The fund should ideally be a "financing" fund, where the fund's balance reflects the government's saving of its petroleum wealth and is presented in the context of all the government's financial assets and liabilities.
- **Fund assets should be prudently managed, coordinated with other government financing operations and invested offshore.** Funds can accumulate large amounts of money and excessive risk-taking would not be appropriate. Holding the assets offshore helps diversify risk and also reduces the impact on the domestic economy. Funds should also not lend or otherwise encumber their assets.
- **The rules and operations of the fund should be transparent with stringent mechanisms to ensure accountability and prevent misuse.** This requires regular and frequent disclosure and reporting on the principles governing the fund, its inflows and outflows, and its investment strategy and return on assets. The fund's activities should be audited by an independent external agency, and investment performance should be periodically evaluated.

C. Proposed Model for Timor-Leste

The Petroleum Fund that is proposed in this discussion paper builds on international best practice and is based on the Petroleum Fund model used in Norway[5]. The main features of the proposed Petroleum Fund for Timor-Leste are described below.

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[3] The following two publications give a more comprehensive review of petroleum funds, fiscal policy and international experiences: (i) "Stabilization and Savings Funds for Nonrenewable Resources: Experience and Fiscal Policy Implications," Occasional Paper 205, IMF (2001). (ii) "Fiscal Policy Formulation and Implementation in Oil-Producing Countries" by Davis, J. M., R. Ossowski, and A. Fedelino, eds., IMF (2003).

[4] A trust fund approach, with an institution operating separately from the rest of the government, would undermine the newly-created institutions and create additional demands on limited domestic capacity. Moreover, a trust fund approach would not guarantee that future governments would save the petroleum wealth and would probably complicate, rather than facilitate, fiscal policy. One lesson from other countries appears to be that a trust fund approach tends to work better in a situation where the fund is mature with limited revenue flows, rather than in a situation where most of the revenues are in the future (as is the case for Timor-Leste).

[5] Information on the Norwegian Government Petroleum Fund can be found at the website of the Ministry of Finance (http://www.odin.dep.no/fin/engelsk/) or the central bank (http://www.norgesbank.no/english/).

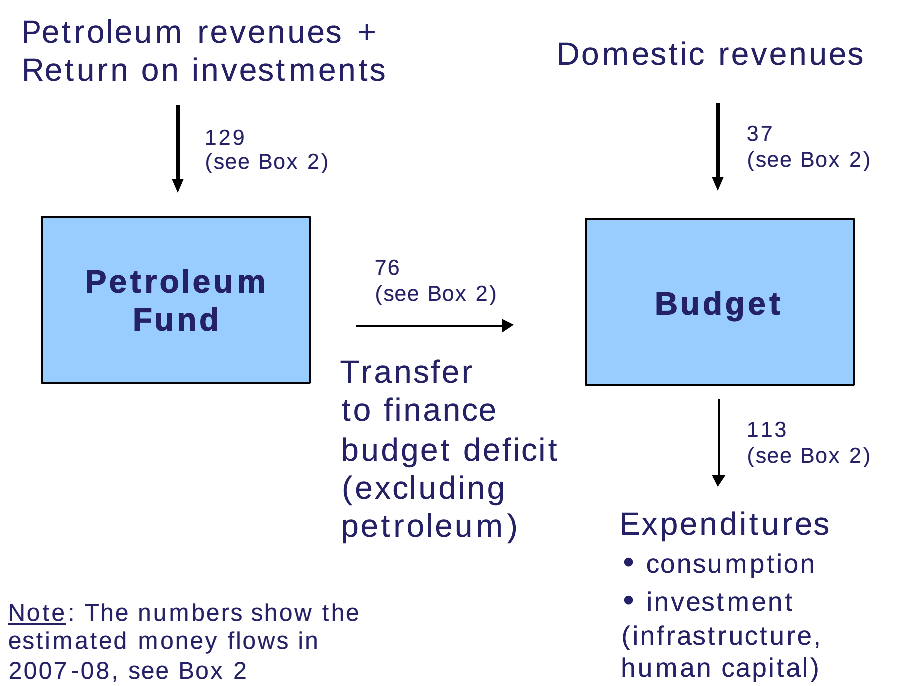
The Fund's income

The income of the Petroleum Fund consists of all of Timor-Leste's petroleum revenues (ie, all taxes and payments related to petroleum resources in the Timor Sea, including the royalty component First Tranche Petroleum - FTP). In addition, an important starting capital of the Petroleum Fund for Timor-Leste will be the accumulated FTP savings, which are the result of the Government's policy to set aside all FTP until a Petroleum Fund is in place. Finally, the return on the Fund's investments will be added to the Fund.

The Fund's expenditure

The outflow from the Fund will be the amount necessary to finance the government budget deficit (excluding petroleum revenues). This design creates a direct link from the budget deficit (excluding petroleum) and the use of the Fund's capital. Increased government expenditure or lower tax incomes (from domestic activities) result in smaller net allocations to the Fund. (Box 1 shows how the Fund works, with numbers taken from the illustrations in Box 2 of how the Fund is integrated into the government budget.)

Box 1. An illustration of how the Petroleum Fund works



The design of the Petroleum Fund means that it is the regular budget procedure that addresses the key questions:

- how much of the petroleum revenues should be spent and how much should be saved.

- how the petroleum revenues should be saved – by investing in 'physical assets' (in infrastructure such as roads, in human capital such as education) or by investing in financial assets (bank deposits, bonds, equities).

The government budget decides the level of domestic tax revenues and spending – be it on current public consumption or on investment in infrastructure and human capital. The budget thereby also determines (as a residual) the net allocation to the Petroleum Fund that gets invested in financial assets. The savings accumulated in the Fund therefore depend on the government budget that has been passed by Parliament.

This again illustrates that budget policy is key to the management of the petroleum wealth. It may therefore be appropriate also to establish *a longer-term fiscal policy guideline* as a benchmark for how much money should flow out of the Fund (see Section V). If one implements such a fiscal policy guideline, this means that the level of expenditure in the government budget would need to be adjusted according to the rule.

Box 2. The Petroleum Fund and the budget – illustrative tables

The Budget and the Petroleum Fund	2006-07	2007-08
Total revenues		166
Revenues from petroleum activities		117
Return on the Petroleum Fund's investments		12
Domestic revenues		37
Total expenditures		113
Expenditures on petroleum activities		0
Domestic expenditures		113
Total budget balance (before transfer to/from the Petroleum Fund)		53
- *Net petroleum revenues*		*129*
= *Budget balance excluding petroleum*		*-76*
+ *Transfer from the Petroleum Fund*		*76*
= *Budget balance (after transfer to/from the Petroleum Fund)*		*0*
Memo: Capital in the Petroleum Fund at end of fiscal year (market value)	*224*	*277*

The Petroleum Fund	2006-07	2007-08
Total revenues		129
Net petroleum revenues		117
Return on investments		12
Total expenditures		76
Transfer to the government budget		76
Surplus in the Petroleum Fund		53
Accumulated capital in the Petroleum Fund at end of fiscal year (market value)	224	277

The discussions above have not explicitly considered how (in the context of the Petroleum Fund) to treat issues like budgetary support (from development partners) and government borrowing (for example concessional loans). To the extent that these sources of funding are cheaper than drawing on the Petroleum Fund, it may make sense to take advantage of them. It is nonetheless important that the assets of the Fund are presented and assessed in the context of the government's net financial wealth, taking into account any borrowing[6].

Investment of the Fund

The Petroleum Fund's savings are to be invested securely in low risk *financial assets abroad*[7], so that they are available when there is a need to draw on them. By investing a large part of the petroleum revenues securely in international financial markets, one reduces the risk of the Fund's savings ('not all eggs in one basket'). This strategy also has the benefit of putting less pressure on the domestic economy and contributes to a balanced economic development. (Had the Fund invested large savings in assets in Timor-Leste, these activities could contribute to a rapid increase in prices and accelerate the structural changes in the economy frequently associated with the use of petroleum revenues.) There is also a concern that investing domestically may increase the risk of corruption and bad governance.

Management of the Fund

The success of the proposed Petroleum Fund – in terms of capital accumulation, financial returns and public perceptions – will depend in large part on the quality of management and the transparency of its operations. The Fund will not be a separate institution, but fully integrated with government finances and its savings deposited in a separate account with the Banking and Payments Authority (BPA, which carries out central bank functions).

The Minister of Planning and Finance will have overall responsibility for the management of the Fund, and will report to the Prime Minister. The Minister of Planning and Finance will be advised by an *Investment Steering Committee*. Members of this advisory committee will be key staff from the Ministry of Planning and Finance (MoPF) and the BPA, supplemented by external members, some of whom should have experience from the financial services sector. The rationale for setting up such a committee is to strengthen the quality of advice preceding decision making on the management of the Fund.

The operational day-to-day management of the Petroleum Fund will be delegated to the BPA, who will manage the Fund separately from its other assets and according to guidelines set by the MoPF. The financial return of the Petroleum Fund account with the BPA will be determined by the return on the assets the BPA has invested (in its own name) on behalf of the Fund. It is important that people have confidence in the management of the Petroleum Fund. The BPA must therefore carry out the operational management professionally, perhaps strengthening its own institutional capacity by external expert assistance if necessary.

[6] It can be risky borrowing against future petroleum revenues, which are uncertain and volatile.

[7] With the current dollarization, investment abroad in USD securities carries no exchange rate risk. The question of expanding the Fund's investments to assets like equities with increased risk, and a correspondingly higher expected return, should be revisited in a few years, depending on the size and the investment horizon of the Fund.

IV. Transparency and Accountability - Measures to Safeguard a Wise Management of the Petroleum Wealth

Probably the most effective measure to secure a wise, long-term management of the petroleum wealth is to build a national consensus on the basis of an informed public debate, and to develop a clear sense of ownership of the Fund amongst the Timorese population.

To achieve this, it is important that relevant information relating to the management of the petroleum wealth is presented in an accessible format, and that there is transparency and accountability across a wide range of areas. This is particularly relevant for the following areas:

- The design of the **regime to manage and tax the extraction of oil and gas** (where a thorough public consultation has recently been conducted).
- Transparency in the **payments by oil companies** of royalties, taxes etc. In this respect, the Government's policies are consistent with the principles in the "*Extractive Industries Transparency Initiative*". This international initiative seeks to promote transparency of payments by companies to governments as well as transparency over revenues received by host country governments ('publish what you pay and publish what you receive').
- Planning and execution of **government budgets**.
- Management of the financial savings in the **Petroleum Fund**.

This discussion paper and the design of the Petroleum Fund is intended to contribute to this effort of building confidence, transparency and accountability in the management of the petroleum wealth:

- There is to be a **high degree of transparency** in the operations of the Petroleum Fund and there will be comprehensive and accessible reporting.
- The **Ministry of Planning and Finance** will report on the Petroleum Fund through the regular budget documents and a separate annual report. The Ministry will describe the inflow and outflow of the Fund, and also comment on whether the outflow (spending of petroleum revenues) is consistent with long-term considerations. The Ministry will report the return and the accumulated value of the Fund, and present any other important issues concerning the management of the Fund. The assets of the Fund need to be presented and assessed in the context of the government's net financial wealth.[8]

[8] Since the government can borrow, Petroleum Fund assets may not reflect the government's actual saving of petroleum revenues. If the government borrows, debt should be subtracted from the Fund's assets to see the development of actual savings.

- The **Banking and Payments Authority** will report regularly (probably every quarter) on the operational management of the Fund, both to the Ministry of Planning and Finance and to the public.
- There will be independent **external, independent audits** to bolster confidence that money going to, from or remaining in the Petroleum Fund are not misappropriated.
- One can also consider establishing an independent **Council of Eminent Persons** to monitor and inform Parliament on all aspects of the operations of the Fund. This council could act as a "watchdog", where the aim is to contribute to an informed public debate and a sound management of the petroleum wealth. The council could comprise a few eminent persons in whom there is a wide degree of trust and respect within the Timorese community. One could also contemplate including someone widely respected internationally, with integrity and knowledge about the management of petroleum wealth, who could contribute with an international perspective.

Box 3. A Petroleum Fund for Timor-Leste – Key Principles

1. A fund which receives all revenues accruing to the Government of Timor-Leste from its ownership of petroleum resources.
2. A fund with strong inter-generational equity objectives.
3. A process, or mechanism, for drawing on the fund which will enable it to support fiscally responsible levels of budget expenditure over the long term.
4. A design of the fund that strenghtens the role of the budgetary process and existing institutions, with clear lines of responsibility and maintaining democratic accountability.
5. A high degree of legislative protection from governments of the day for the objectives of the fund, including its major institutional arrangements for custody and management.
6. The investment of fund resources to be exercised according to written and approved guidelines which emphasize a conservative, low risk, approach to the placement and management of funds.
7. Implementation of the investment guidelines to be assigned to a carefully selected group of professionally competent persons, drawing on appropriate experience, advice and quality information.
8. Maximum transparency of fund operations to parliament and the public through frequent, highly accessible and easily understood reporting.
9. Institutional arrangements which may incorporate a role for eminent persons who are widely trusted within the Timorese community.

V. When and How To Spend The Petroleum Wealth

Since oil and gas are exhaustible resources, it follows that a significant part of the current cash flows should not be regarded as ordinary income, but as a resource rent. Furthermore, this revenue source is both volatile and uncertain. Correspondingly, the exploitation of the petroleum resources is a question of how to manage the wealth, also taking into account the significant uncertainty. The approach chosen in Timor-Leste, as in most petroleum producing countries, is that the government manages the petroleum wealth on behalf of its citizens. The most important issue then relates to how much of the wealth should be spent now and how much should be saved for the future. The Government's savings policy is outlined below. However, this issue of a savings policy should be seen as separate from a decision to establish the Petroleum Fund, which is the savings instrument that can accomodate any savings policy.

A. Saving in 'physical' or financial assets

We can save either by investing in 'physical assets' (eg, infrastructure like roads, education to improve the human capital) or in financial assets (eg, bank deposits, bonds and equities – channeled through the Petroleum Fund). To determine how much is invested in physical assets compared to financial assets, an important consideration is which type of investments that are expected to be most profitable.

Timor-Leste has a pressing need to develop its physical infrastructure and human capital, and the rate of return on some proposals exceeds that which can be expected from investing in financial assets. However, the rate at which we can invest in physical assets is constrained by the capacity of local institutions to implement these projects. The sheer amount of future petroleum revenues, and the speed at which they will be received, could overwhelm any attempt to invest them in productive physical assets. The Government is committed to ensuring that public expenditure is substantial and sustainable. The Government is also committed to saving significant petroleum revenues in financial assets through the Petroleum Fund.

B. Separate income from spending

Petroleum resources allow higher consumption over time, but the key point is that the spending must be separated from the actual production/income profile. A volatile and uncertain revenue source makes fiscal management, budgetary planning and the efficient use of public resources difficult. When revenue falls sharply and unexpectedly, expenditure also typically falls sharply too, which is costly. Cutting current expenditure can be notoriously unpopular, difficult and socially damaging. Cutting capital spending might involve abandoning viable projects which could yield large returns for modest additional funds. But if spending is not cut, fiscal policy could be unsustainable. Spending sensibly when petroleum revenues rise can also be difficult, as the availability of funds can lead to inefficient projects being initiated.

If a government were to spend its petroleum revenue as it came in, not only would this damage fiscal policy, it would also impart this volatility to the broader economy. Prices and activity would rise as the government spent higher revenues and fall when spending is cut. This volatility, and the private sector's inability to make longer-term plans, would damage the performance of the entire economy.

A Petroleum Fund would serve as a useful mechanism to separate spending from the petroleum production/income profile. The Petroleum Fund does not guarantee a wise management of the petroleum wealth, but it can be a useful tool – provided it goes hand in hand with a fiscal policy framework supporting the strategy of saving a substantial part of the petroleum revenues. The key therefore is to formulate a sustainable fiscal policy framework with a sound budgetary execution.

C. Fiscal policy guidelines

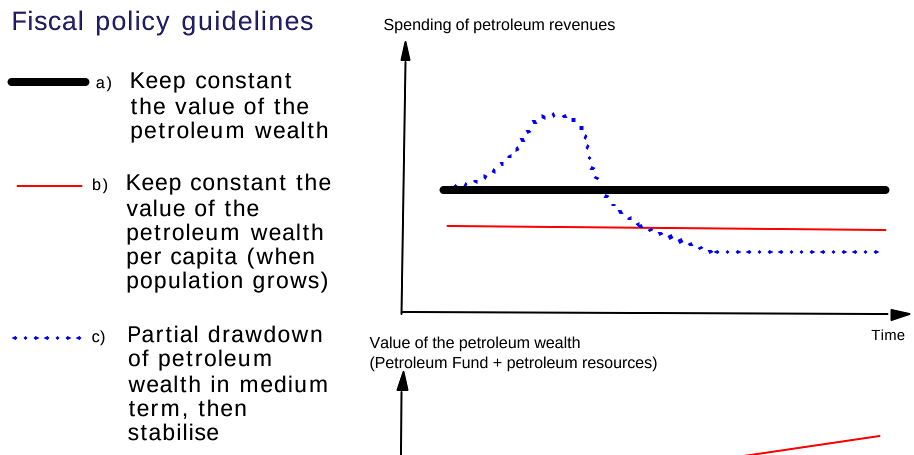
A detailed treatment of the key question in this regard – when and how much of the petroleum revenues should be spent, striking the balance between current consumption, investing in physical assets and investing in financial assets – goes beyond the scope of this discussion paper. This paper focuses on the establishment of a Petroleum Fund as a **savings instrument**. To illustrate the variety **savings policies**, however, we have outlined three scenarios. These serve as illustrations of fiscal policy guidelines that can provide a benchmark to assess the outflow from the Petroleum Fund (and thus government spending).

a) **Keep constant the real value of the petroleum wealth** (ie, the sum of the Petroleum Fund and the estimated value of the petroleum reserves). This budget strategy would allow for a withdrawal from the Fund that would leave sufficient resources for an equal amount to be withdrawn in later years. This "permanent income strategy" is a common starting point for assessing the sustainability of fiscal policy, as it suggests an even spending profile over time (see Box 4. Appendix III illustrates relevant calculations for this policy guideline.)

b) **Keep constant the value of the petroleum wealth per capita**. This budget strategy takes into account the rate of population growth. In Timor-Leste's case, this strategy would imply more saving (and less spending) since the population is growing. With a very high rate of population growth, this strategy can in theory suggest no withdrawal from the Fund.

c) **Allow for a partial drawdown of the petroleum wealth in the medium term**, and then keep the petroleum wealth stable in real terms. This strategy permits increased spending in the medium term to improve physical infrastructure and human capital, though less savings are available to fund expenditure in the long term.

Box 4. An illustration of the relationship between fiscal policy guidelines, spending of petroleum revenues and the petroleum wealth



Note: These charts are intended only as a general illustration. The actual profiles could be quite different, depending on the formulation of policy. There are also different levels of risk surrounding the profiles, which are not shown in the illustrations.

The fiscal policy guidelines mentioned above are among those that seem the most relevant options for Timor-Leste. One can also envisage other (inferior) strategies: spend a fixed share of the petroleum revenues as they arise, spend a fixed nominal amount, spend only the return on what already is in the Petroleum Fund. (Appendix I gives a brief summary of different types of petroleum funds, and Appendix II gives a summary of some fiscal policy strategies.)

A fiscal policy guideline, not a rigid rule

Many countries have introduced fiscal rules[9] in an attempt to implement good fiscal policies. Fiscal rules work by reducing the scope for discretion in fiscal policy making. If one chooses a fiscal policy guideline, this means that the level of expenditure in the government budget would need to be adjusted according to the guideline. The crucial disadvantage of rigid rules is that they do not allow future governments to react to unforeseen circumstances, such as

[9] Common rules include ceilings on budget deficits or on government debt. Fiscal rules can also have differing statutory bases, ranging from constitutional requirements to broad policy guidelines. For a country just beginning to exploit its petroleum resources, fiscal rules have the attraction of attempting to lock in "good" fiscal policy. This is only achieved at the cost of reducing the scope for discretionary fiscal policy in the future. It can also be argued that if future governments wish to pursue a different fiscal policy, they should not be constrained. Fiscal rules are also difficult to enforce and can often be circumvented, which would undermine the legitimacy and institutional structure of fiscal policy-making.

wars, epidemics, demographic changes etc. For this reason, the savings policy should not be a rigid rule.

When assessing the appropriate fiscal policy strategy, one needs to consider at least the following factors:

- **Inter-generational equity**. Spending more money now entails a risk of less being available for later generations. If the use of petroleum revenues exceeds the level consistent with long-term considerations, the public sector will quickly run considerable deficits when petroleum revenues gradually decline. The need to maintain balance in public finances over time will eventually necessitate a significant tightening (ie, lower spending or higher taxes).
- **The economy's absorptive capacity**. A strategy to increase spending to improve physical infrastructure and human capital, thereby raising the economy's growth potential, needs to ensure one is actually able to target those projects with high expected returns. If the capacity or quality of the relevant institutions imply that one is not able to spend the money wisely, it is better to wait. Or as Marion Rodesky, a Swedish mineral economist, reportedly said in the early 1990s: *"No sophistication is needed for the wise decision to deposit fast-growing mineral income in the bank, pending the emergence of sensible opportunity to spend the money."*
- **Macroeconomic stabilization objectives**: In addition to longer-term considerations (of enhancing the economy's growth potential and ensuring sustainable public finances), economic policy should also be formulated to deliver a balanced economic development in the short to medium term. The dollarization means that Timor-Leste cannot rely on monetary policy (the setting of interest rates), which means that the annual government budgets need to take into account the need to boost or slow the growth rates of the economy.

D. A suitable savings policy

A fiscal guideline which aims to keep constant the real value of the petroleum wealth, while at the same time taking into account the above mentioned factors, would seem to represent a sound fiscal policy strategy. The Government therefore is adopting a **savings policy aimed at maintaining the real value of the petroleum wealth**. This means over the medium term spending the "permanent income" of the petroleum wealth each year, and saving any part of the petroleum revenues that exceeds this amount. This strategy allows for a withdrawal from the Fund that would leave sufficient resources for an equal amount to be withdrawn in later years. (Appendix III illustrates relevant calculations for this policy guideline.)

Implementing this fiscal policy on updated petroleum revenue projections (see figure 1) suggest a gradual increase in government expenditures. This room for fiscal maneuver should be used wisely to invest in human capital and infrastructure, which can deliver stronger economic growth and improved public services. This fiscal policy would at the same time ensure that sufficient financial savings are deposited in the Petroleum Fund so that in later years Timor-Leste is able to withdraw an equal amount in real terms (and a rising amount when taking into account inflation, see figures 3 and 4).

While such a savings policy can handle variations in petroleum revenues better than other policies, it is important to remember that changing circumstances will over time lead to changes in fiscal policy. Even a USD 5 per barrel change in oil prices (compared with the current assumptions) would for example result in a significant change in the permanent income and the desired level of expenditure.

Figure 3. An illustration of government expenditures and financial savings with the new savings policy

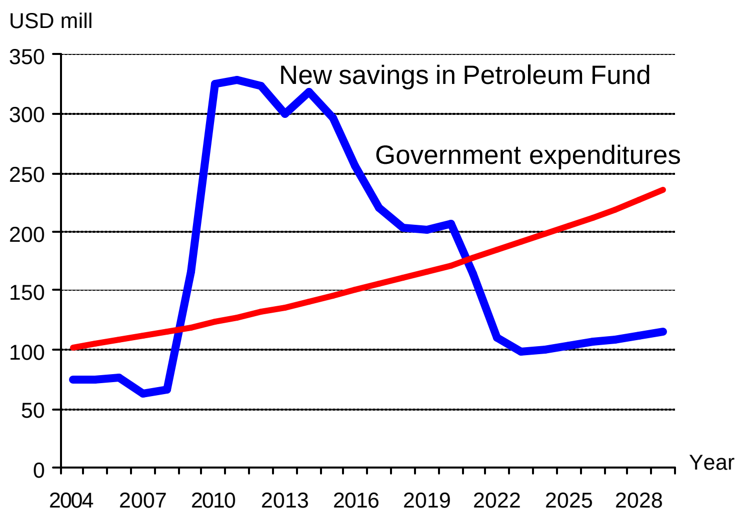
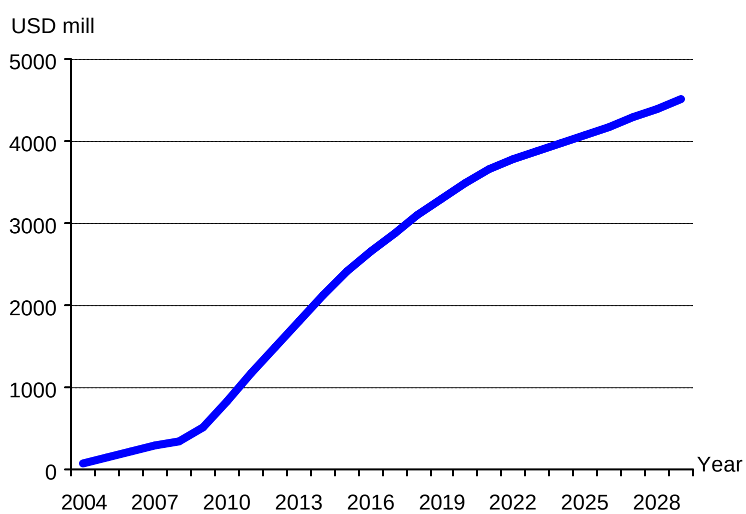


Figure 4. An illustration of the assets in the Petroleum Fund with the new savings policy



Looking to other petroleum producing countries we find plenty of evidence[10] that poor institutional capacity on the identification and execution of high-quality projects has been a serious constraint. Given high levels of poverty the government needs to work towards removing these institutional constraints, so that higher spending will be able to lift the productive potential of the economy.

It is inevitable that the success of fiscal policy will depend on the quality and decisions of existing institutions. The Petroleum Fund should not be seen as a way to avoid such responsibility, but as a way to meet this responsibility by raising the standard of understanding, transparency, accountability, and debate about the use of the national petroleum wealth. Clarity of objectives, simplicity of arrangements, quality of key institutions, transparency of operations, and complementarity with fiscal policy all play an important role in allowing the Petroleum Fund to accumulate revenues without jeopardizing current development priorities or undermining fiscal discipline.

[10] See for example “The Elusive Quest for Growth: Economists Adventures and Misadventures in the Tropics” by W. Easterly, MIT press (2001).

Appendix I. Different Types of Petroleum Funds

Type of fund	***Description***	***Advantages***	***Disadvantages***
Savings fund	• Aim to build up wealth for future generations. • Inflows are typically either a fixed share of petroleum revenue or a fixed nominal contribution from the budget. • Outflows are typically discretionary transfers to the budget, but sometimes also linked to specific situations (e.g., recessions or disasters).	• Can contribute to long-term management of petroleum revenues.	• Main design flaw: Money is fungible. This means that assets in the savings fund do not necessarily represent genuine savings, since the government could be borrowing. This can make the savings fund misleading, and lead to inefficient cash management.
Stabilization fund	• Aim to reduce the impact of volatile revenue on the government and the economy. • Inflows and outflows are typically contingent on whether the petroleum revenue or price is "high" or "low," compared to some historical average or pre-determined threshold. • The idea is that the fund would receive money from the budget when petroleum revenue is particularly strong and pay out to the budget when petroleum revenue is particularly weak.	• By reducing the uncertainty of petroleum revenue for the budget, stabilization funds aim to make budgetary spending more stable and predictable.	• Also suffer from the fungibility problem. Governments could make payments to the fund when the petroleum price is high, but may not reduce expenditure if they borrow elsewhere. • Another potential design flaw is if their rules of inflows and outflows are based on rigid petroleum price thresholds that may become inappropriate.
Financing fund	• Aim to overcome the design flaw of savings and stabilization funds relating to fungibility. • Act as the government's savings account and can serve as both savings and stabilization fund. • The budget transfers all petroleum revenues to the fund and the fund in turn finances any remaining budget deficit. Thus the net inflow into a financing fund is exactly the overall fiscal balance (including petroleum revenue).	• Financing funds transparently show not only how much petroleum revenue the government is saving, but also that the amount saved depends on the government fiscal policy decisions.	• For such a fund to be a success, it requires decision making by government and parliament to be informed and long term. The challenge grows in tandem with the size of the fund.

Appendix II. Possible Fiscal Policy Guidelines for the Petroleum Fund

Name of Rule	***Description***	***Simplicity***	***Stability***	***Ability to Save Petroleum Wealth***
Sustainable Income	Maximum withdrawal equal to the estimated sustainable income from petroleum wealth, with estimates updated annually.	Medium: concept straightforward but calculation complicated, especially while petroleum revenues mainly still in the future.	Medium: Sustainable income estimate will be sensitive to revision in production outlook and petroleum prices. Lack of assets in Fund may prevent sustainable income being withdrawn.	High: derived from sound economic basis, but can still be undermined by borrowing.
Share of petroleum revenue	Fixed share of annual petroleum revenue can be withdrawn.	High: petroleum revenue is an observable fact; concept easily understood.	Low: petroleum revenues are highly volatile and unpredictable.	Low: changes in petroleum revenue outlook will undermine basis for the fixed share. Borrowing would also by-pass this rule.
Fixed nominal value	A U.S. dollar value is set for the maximum withdrawal from the petroleum fund.	High: fixed dollar value is easily understood.	Medium: if the value is set too high, the fund will eventually not be able to make the transfer. Lack of assets in the fund may also prevent sustainable income being withdrawn.	Medium: changes in petroleum revenue outlook will undermine basis for the limit. Borrowing would also by-pass this rule.
Real return	Maximum amount withdrawn from the fund limited to estimated real return on outstanding fund assets.	High: concept of only spending interest income on an asset should be fairly easily understood.	Low: in early years, very little can be withdrawn as the Fund has not accumulated assets, but the return can be expected to rise fairly gradually and predictably.	High: could work once fund is mature, but will severely restrict expenditure beforehand. Borrowing would also by-pass this rule.

Appendix III. An Illustration of a Sustainable Fiscal Policy Guideline

A fiscal policy guideline of keeping constant the real value of the petroleum wealth can be described as a strategy of spending the *sustainable income*. The sustainable income from *petroleum wealth* for a given fiscal year is the amount that can be withdrawn from the Petroleum Fund (PF) by the budget in that fiscal year and leave sufficient resources in the PF for an equal real amount to be withdrawn in all later fiscal years.

Petroleum wealth at a particular point in time is the sum of the value of PF assets and the present value of expected future PF revenues. When you calculate the present value of future revenues, a discount rate is used to adjust for inflation and take into account that more value is put on revenues closer in time.

Sustainable income for a fiscal year can be calculated through the following steps.

Collect the following data:

The value of PF assets at the end of the previous fiscal year (V)

Projections for expected PF revenues for this fiscal year (R_1) and future fiscal years (R_2 , ... , R_n)

Estimated average nominal rate of return (or interest rate) on PF investments in the future (r)

Estimated real return on PF assets in the future (i)

Petroleum wealth = $V + \sum_{t=1}^{n} \frac{R_t}{(1+r_t)^t}$

Sustainable income = *i* × *petroleum wealth*

This example illustrates a calculation of the sustainable income for this fiscal year (FY2004/05).

Data:

Value of PF (accumulated FTP in Timor Sea Account 2003/04) (V) = USD 14 million

Expected annual PF revenues as shown in Figure 1

r = 5.5%, i = 3.0% (based on historical averages)

Present value of the future PF revenues is USD 2 329 million

Petroleum wealth = USD 14 million + USD 2 329 million = USD 2 343 million

Sustainable income = 3.0% × USD 2 343 million = USD 70 million