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# The Timor Leste Petroleum Fund, veterans and white elephants: Fostering intergenerational equity?

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## ABSTRACT

Timor Leste which emerged as a sovereign nation in 2002, is one of the most oil dependent countries in the world but with limited oil reserves. In 2005 it set up a Petroleum Fund to provide a stable source of revenues for the budget over the long term and to preserve intergenerational equity. Ten years later, the petroleum fund balance fell for the first time due to falling output, lower oil prices and lower returns on investment. With its oil production expected to cease in 2023 and withdrawals from the fund far exceeding the estimated sustainable income level it is imperative that revenues are spent wisely. This study focuses on examining the pattern of oil revenue expenditures and concludes that expenditures on veterans' payments and large scale infrastructure projects have thwarted the stated aims of the fund particularly that of preserving intergenerational equity. The paper concludes by examining the policy implications of the findings.

## 1. Introduction

Timor Leste emerged as a post-conflict sovereign nation in 2002, as one of the poorest countries in the world. It was a Portuguese colony for over two hundred years until 1975, when Portugal surrendered its colonies. Later that year the Indonesian army invaded the country and declared it to be the twenty seventh province of Indonesia. After 24 years of armed conflict against the occupation, and a vote for independence in a referendum in 1999, Indonesian troops withdrew with the retreating forces damaging an estimated 70% of its infrastructure and displacing the majority of its population. Timor Leste was then governed by the UN until it became independent in 2002.

Timor Leste is one of the most oil dependent countries in the world with oil accounting for over 70% of GDP and 90% of government revenues. However, its oil reserves are limited and this is more a reflection of the fact that its non-oil GDP is extremely small by comparison. The resource curse has stymied development in numerous oil-rich economies, and there is widespread recognition of this in Timor Leste.<sup>1</sup> In 2005, a Petroleum Fund was established to ensure that withdrawals from this fund for government budgets are in line with the estimated sustainable income (ESI) of the fund.

The ESI for a given fiscal year is defined as the maximum amount that can be appropriated and transferred from the Petroleum Fund to the budget while retaining sufficient resources to appropriate an equal amount in all subsequent years (see IMF, 2009). While the ESI can be seen as a fiscal rule it does not have a rigid ceiling. The law stipulates that actual withdrawal may exceed the ESI as long as it is approved by parliament.

This principle of withdrawals in line with the ESI has been adhered to until 2008 and since that time withdrawals above the ESI has been the norm. In 2015, the Petroleum Fund experienced a fall in its petroleum fund balance for the first time due to falling oil prices, lower output and lower returns on investment. With its oil production expected to cease in 2023 and withdrawals from the fund far exceeding the estimated sustainable income level it is imperative that revenues are spent wisely. This is critical to determining if Timor Leste achieves its goals set out in the Timor-Leste Government's Strategic Development Plan (SDP) for achieving upper-middle income country status by 2030 or whether it becomes yet another resource cursed state.<sup>2</sup>

This study focuses on examining if the pattern of oil revenue expenditures is consistent with the stated aims of the petroleum fund of spending in line with the absorptive capacity of the economy, as well as

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<sup>1</sup> The resource curse in a narrow sense refers the correlation of high levels of resource dependence with lower growth rates. A number of important surveys have summarized and evaluated the resource curse literature. More recent surveys include Venables (2016) Gilberthorpe and Papyrakis (2015) Van der Ploeg and Poelhekke (2017) and Badeeb et al. (2017). The survey by Badeeb et al. (2017) includes a survey of surveys.

<sup>2</sup> Since Independence, Timor-Leste had gone through three broad phases of development planning. It commenced with the National Development Strategy (NDS) in 2002. The second was in the post-2006 crisis period when the National Priorities framework was adopted and the third was with the launch of the Strategic Development Plan (SDP) in July 2011. This plan sets out targets and indicators to be fulfilled in the next two decades on the road to achieving upper-middle income country status. It is based on four pillars, social capital, infrastructure, economic foundations and institutional framework.

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to preserve inter-generational equity. The second section of this paper discusses the literature on intergenerational equity as it relates to natural resource sovereign wealth funds. The third section discusses the Timor Leste Petroleum Fund and the pattern of oil revenues expenditures. Section four discusses the implications of the current pattern oil revenue expenditures for intergenerational equity while section five concludes by examining the policy implications of these findings.

## 2. Natural resource funds and intergenerational equity

Oil revenues are marked by volatility and they are also exhaustible. Revenue volatility can result in pro-cyclical expenditures, i.e. high levels of expenditure when oil prices are high and low levels of expenditure when oil prices are low leading to large fluctuations in economic performance. One mechanism that can decouple spending from oil price fluctuations are precautionary savings that can be used to stabilise expenditure. Savings during times of high oil prices and spending some of this when prices are low can smooth out expenditure and private consumption. Medium term fiscal rules regarding budget expenditures should also be considered.

Resource exhaustibility gives rise to intertemporal decisions about how much of the resource wealth to consume and how much to save with implications for intergenerational equity and long term fiscal and external sustainability. (see IMF, 2012a p.6). Saving part of the revenues and obtaining a return from their investment in financial instruments can be an effective way of providing benefits for future generations, i.e. it can help to smooth oil revenue expenditure to ensure that future generations benefit when oil revenues are exhausted.

An oil exporting country should be indifferent to whether it keeps the oil under the ground (in which case the return is the expected rise in future oil prices) and getting a market rate of return on its sale (Hotelling Rule for efficient depletion, (Hotelling, 1931)). Extracting and selling oil amounts to running down capital, unless the receipts are fully reinvested in financial, physical or human capital. (Hartwick Rule for intergenerational equity, (Hartwick, 1977)).

A major issue in allocating the proceeds from inherited oil wealth across future generations is how much to consume today. This concept involves a weighting of different generations' welfare and one view is that it would involve constant levels of consumption per capita, this view is closely related to Friedman's (1957) permanent income hypothesis (PIH). An application of PIH to fiscal policy would result in a policy prescription to hold real fiscal spending constant on a per capita basis of all total oil wealth, that is wealth that is already accumulated from resources and all future oil revenues. (See IMF, 2003 p.10). All generations are given an equal increase in consumption, addressing the question of intergenerational fairness. This concept prescribes spending based on permanent income, i.e. not just current revenues but also future revenues that will flow from natural resource reserves which have yet to be exploited. This is difficult to determine with certainty.<sup>3</sup>

Uncertainty over determining permanent income led to the proposal of the "bird-in-hand" (BIH) rule which requires a country to use all its resource related revenues to accumulate financial assets and use only the yield from the accumulated financial assets to finance expenditure. Thus the BIH approach is more conservative than the PIH approach as it is based on liquidated resource wealth and not identified natural resource reserves, this in turn results in lower levels of expenditure when the accumulated financial wealth is low. (see Samake et al., 2013 p. 6). Norway's Sovereign Wealth Fund is widely known for the application of this approach.

The PIH and BIH underlies much of the advice for the setting up of a Sovereign Wealth Fund proffered by the IMF (Davis et al., 2001;

<sup>3</sup> It also implies the spending of revenues which are yet to be realised, this requires borrowing from global debt markets to finance current consumption out of future oil revenues.

Ossowski et al., 2008). The IMF's current view is that for a country on a typical development path, future generations are expected to have higher non-resource income than current generations. This means that it may be optimal to tilt consumption towards presently poor generations.

Furthermore, as Collier et al. (2009 p. 2) point out presently poorer generations are also more likely to benefit from investing oil revenues in domestic assets, compared to foreign assets. This is based on the assumption that capital should yield a higher return in capital scarce developing countries. Collier et al. (2009) also note that corruption, rent seeking and well developed patronage networks may make it difficult to obtain high quality investments. As Robinson and Torvik (2005 p.197) note there have been many white elephant projects, because it is the inefficiency of such projects that makes them politically appealing as credible devices of redistribution.

## 3. The Timor Leste petroleum fund and oil revenue expenditures

### 3.1. The Timor Leste Petroleum Fund

Oil price movements are unpredictable and volatile, with extremely wide confidence intervals (Hamilton, 2008). Van der Ploeg and Poelhekke (2009) assert that reducing swings in government revenues will itself increase welfare due to the positive impact of consumption smoothing on total welfare. However, the usual routes to consumption smoothing, i.e., borrowing funds or hedging revenue risk, are not available due to limited access to international debt markets or incomplete markets for oil price hedging instruments.

The Timor Leste Petroleum Fund, based on the Norwegian model was established with the passing of the Petroleum Fund Law in August 2005.<sup>4</sup> It states that petroleum resources should be used "for the benefit of both current and future generations,... in a fair and equitable manner." (See Timor Leste Petroleum Fund Annual Report 2011). Other objectives include stabilising the flow of revenue and mitigating the risks to the budget and economy, from variations in oil prices and petroleum production.

Withdrawals from the fund are guided by the real rate of return on the total petroleum wealth, the so-called estimated sustainable income (ESI). The approach had the benefit of being intuitively simple, appealing from the point of view of intergenerational equity, and offering a reasonably stable source of income to the budget (IMF, 2005).

The estimated sustainable income (ESI) for a given fiscal year is defined as the maximum amount that can be appropriated and transferred from the Petroleum Fund to the budget while retaining sufficient resources to appropriate an equal amount in all subsequent years.

The ESI for a given fiscal year is calculated according to the following formula:

$$ESI = r[V + \sum_{t=0}^n \frac{R_t}{(1+i)^t}]$$

where  $r = 3\%$  is the specified real rate of return,  $V$  is the balance of the fund at the start of the fiscal year,  $R_t$  is the budget projection for petroleum revenue in year  $t$ ,  $n$  is the last year of projected receipts, and  $i$  is the discount factor specified as the nominal yield on U.S. government securities averaged over years 0 to  $n$ . The Petroleum Fund Law states that all assumptions upon which this calculation is based shall be prudent, reflect international best practice and internationally recognized standards, and certified by an independent auditor. (See Timor Leste Petroleum Fund Annual Report 2005)

Originally, 90% of the Petroleum Fund resources were to be invested in investment-grade US dollar debt instruments (e.g. bonds)

<sup>4</sup> The Timor Leste government sought the advice of several organisations on how to best manage its oil resources and adopted the advice of the IMF that it should set up a Petroleum Fund based on the Norwegian model as this model was thought to reflect best practice. See Drysdale (2010).

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