Aid Volatility: Is It a Problem in Tuvalu?

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Abstract

Empirical evidence on aid volatility shows that it adversely impacts recipient countries. This study seeks to find if aid volatility matters in Tuvalu—a small aid recipient country in the Pacific. The study finds that, with a coefficient of variation of 0.49, aid volatility in Tuvalu is significant. It is also found that project aid is more volatile than aid that goes to budget support and routine programs such as scholarships. Aid volatility results in incomplete projects, high transaction costs, ‘Dutch disease’ and fiscal planning problems. To manage the adverse impacts of aid volatility, Tuvalu needs to strengthen its Consolidated Investment Fund to buffer for any disruptions in aid disbursements, provide a sound policy and institutional climate, target aid to budget support and programs instead of specific projects, and implement large infrastructure projects in phases.

Key words: aid volatility, foreign aid, coefficient of variation, donors, Tuvalu

1. Introduction

The issue of aid volatility is lightly covered in the aid literature. Studies on foreign aid have often been dominated by the aid and economic growth link. However, aid volatility is an equally important issue, considering its various implications for and impacts on recipient countries. For instance, empirical evidence on aid volatility shows that it has harmful effects on economies, governments and livelihoods of people of recipient and aid-dependent countries (Lensink & Morrissey 2001; Bulir & Hamann 2008; Hudson & Mosley 2008). For example, Lensink and Morrissey (2001) observe that, when highly volatile, rather than achieving the intended effect of encouraging economic growth, aid actually impedes it as recipient countries limit future investment activities fearing that aid disbursements may be not forthcoming from donors.

The thin literature on foreign aid in small island economies in the South Pacific suggests that aid is highly volatile in these economies (Clarke et al. 2008). The problem is compounded because these economies heavily depend on foreign aid (Knapman 1986; Laplagne et al. 2001; Feeny & McGillivray 2003; Hughes 2003; Jayaraman & Choong 2006; Sugden & Pavlov 2006; Connell 2010). The cross-country study by Clarke et al. (2008) on aid volatility in Pacific island countries observed that, relative to other countries in other regions, aid volatility in Tuvalu is significant at the coefficient of variation (CV) of 0.67. Moreover, Tuvalu faces a high degree of volatility in total government revenue, which includes foreign aid (Asian Development

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Bank (ADB) 2007). However, there has not been a detailed study to determine the volatility of aid relative to other revenue and aid volatility by donor, type and sector in Tuvalu. Past studies on aid volatility have primarily focussed on cross-country analyses, with little attention to individual recipients and the various components of aid. This article seeks to identify if aid volatility is a problem in Tuvalu—a small aid-dependent country in the Pacific—and, if so, how it can be managed to reduce its adverse impacts.

2. Background

2.1 Economic Overview

Tuvalu, a tiny, remote atoll nation in the South Pacific, has nine small scattered islands totalling 26 square kilometres of land and with a population of just over 10,000 (United Nations (UN) 2009). The distance to the nearest metropolitan country, Australia, with whom Tuvalu has very close economic ties, is about 4,000 kilometres (International Monetary Fund 2010).

Tuvalu has a dual economy consisting mainly of a large traditional sector based largely on fishing and harvesting of few agricultural crops and a smaller modern and cash-oriented sector. However, the modern sector is progressing quickly (ADB 2007).

Tuvalu is also a migration, remittances, aid, bureaucracies nation.2 The majority of government revenues and private incomes are received from abroad through distributions from the Tuvalu Trust Fund (TTF),3 proceeds from fishing licences granted to foreign fishing vessels to fish in Tuvalu waters, revenues from the .TV,4 remittances and foreign aid (UN 2009). Yearly inflows from these sources have fluctuated significantly over the years because of their proneness to external factors.

2.2 Foreign Aid in Tuvalu

Foreign aid in Tuvalu is designed to assist in the achievement of progress in Te Kakeega II: National Strategies for Sustainable Development, 2005–20155 eight strategic areas (good governance, economic growth and stability, social development, outer island development, employment and private sector development, human resource development, development of supportive infrastructure and utilities, and natural resources) (GOT 2006).

Tuvalu’s major development partners (over the period 2001–2008) were the ADB, Australia, European Union (EU), Japan, New Zealand and the Republic of China (ROC-Taiwan) (GOT 2009). Table 1 lists aid contributions from Tuvalu’s development partners from 2001 to 2008.

Donors in Table 1 have different aid focuses, except for Australia and New Zealand, which have similar interests in the education sector (scholarships), outer island development and economic development. For instance, Japan targets mostly large capital projects in the fisheries sector. ROC contributes directly to the government national budget (both for recurrent and capital purposes). The

| Donor      | Disbursements (AUS$’000) | % of total aid |
|------------|-------------------------|----------------|
| ADB        | 3,325                   | 3              |
| Australia  | 21,553                  | 17             |
| EU         | 8,493                   | 7              |
| Japan      | 36,990                  | 30             |
| New Zealand| 15,033                  | 12             |
| ROC        | 30,312                  | 25             |
| Others     | 7,487                   | 6              |
| Total      | 123,193                 |                |

Note: (a) Real value adjusted to 2001 prices using the Tuvalu Customer Price Index.
Source: Tuvalu Aid Statistical Report 2009.
ADB, Asian Development Bank; EU, European Union; ROC, Republic of China.
EU focuses on infrastructure projects (including water and sanitation), while the ADB targets fiscal management, including state-owned enterprise reform.

As Figure 1 shows, foreign aid plays a significant role in Tuvalu’s economy: the ratio of foreign aid to gross domestic product (GDP) ranged from 23 per cent to 88 per cent during the 1996–2008 period.

### 3. Literature Review

#### 3.1 Significance of Aid Volatility

Bulir and Hamann (2003) argue that aid is substantially more volatile than domestic revenue. Their argument is consistent with findings of Gemmell and McGillivray (1998) and Hudson and Mosley (2008). Bulir and Hamann (2003) also observe that those countries that are more dependent on aid also experienced higher aid volatility.

It is commonly argued that high aid volatility has adverse implications for the economy, government and people of an aid recipient country. For instance, Rajan and Subramanian (2008) note that shortfalls in foreign aid funding of capital projects in poor countries may stall the implementation process unless there are other funding sources available. Similarly, Hudson and Mosley (2008) observe that aid volatility increases the number of uncompleted projects. Such situations do not help recipients because they result in job losses and lower project benefits and the rate of return. Moreover, Rodrik (2001) suggests that volatile aid creates an unpredictable policy environment, which deters both domestic and foreign investment. According to Heller et al. (2006), this makes macroeconomic planning difficult in recipient countries.

After investigating the variations in sector and program aid allocated to 44 small island states in the period 1973–2004, Clarke et al. (2008) observe that small island countries have experienced a significant degree of aid instability in relation to other aid recipient countries. Moreover, they find that aid is more ineffective if flows are unstable. Chowdhury and Vidyattama (2008) also suggest that the instability of aid disbursements and the divergence between donors’ commitments and their disbursements result in diminishing returns to aid and lack of aid effectiveness in small island economies. They further argue that aid volatility can cause significant problems for project implementation and the government budget.

#### 3.2 Causes of Aid Volatility

There are two main causes of aid volatility identified in the literature. First, Arellano et al. (2005) observe that aid commitments are often shaped by the relative bargaining capabilities of donors and recipients. For instance, they argue that donors (especially...
multilaterals) that have substantial portfolios outstanding to recipient countries may not be prepared to make additional commitments.

Second, ineffective administration of aid programs may also cause aid volatility. For instance, Arellano et al. (2005) contend that ‘bad donor planning, unexpected delays in implementing programs, and a slower-than-anticipated speed of disbursement are possible reasons for aid shortfalls’. For example, according to Celasun and Walliser (2008), between 1990 and 2005, annual aid disbursements in sub-Saharan Africa deviated from aid commitments by 3.4 per cent of GDP. They further observe that other regions have disbursements and commitments diverging by 1.7–2.4 per cent of GDP. These observations were also shared by Easterly (2002).

While the two contentions on causes of aid volatility above are credible, they are unfairly biased towards blaming donors. Therefore, it is important to find if recipient countries, like Tuvalu, are also contributing to the causes of aid volatility.

3.3 Consequences of Aid Volatility

According to the literature, there are four major consequences of aid volatility in recipient countries. First, according to Kharas (2008), aid volatility raises the costs of financial management because of weak aid coordination systems in recipient countries. This can result in donors supporting one sector in one year and then moving to a different sector in the next year. He argues that donors are unaware of each others’ operations and often duplicate analytical work. According to Kharas, the lack of coordination produces volatility, waste and overlap of activities because of an inability to predict resource flows.

Second, Aghion et al. (2005) argue that aid volatility adversely affects investment and thus reduces welfare in recipient countries. They suggest that volatility in domestic liquidity changes the composition of domestic financing away from growth-enhancing, long-term investment towards short-term investment and consumption. They further argue that this effect is largest when domestic financial markets are less developed (a characteristic of most aid-dependent countries). Furthermore, they contend that suboptimal decisions are made in the composition of investment because of risk aversion by investors. Moreover, they observe that aid shortfalls force governments to reduce investment, while aid windfalls typically lead to increases in government consumption, which, unlike investment spending, can be adjusted quickly.

Third, volatile aid flows may affect growth through their implications for the design of intertemporal fiscal policies by recipient governments. For instance, volatile aid may deter recipient countries from formulating ambitious domestic investment and consumption plans. Additionally, volatile aid may also be harmful to the business climate and thereby slow private investment (Tressel & Prati 2006; Schnabel 2007; Fatas & Mihov 2008).

Fourth, volatile aid flows, which can give rise to windfalls of funds, may impact adversely on the competitiveness of the receiving economy through causing the exchange rate to appreciate—a phenomenon called ‘Dutch disease’ (Tressel & Prati 2006).

3.4 Dealing with Aid Volatility

Most recommendations for dealing with aid volatility refer to donor behaviour, on the assumption that aid shortfalls (or windfalls) are primarily due to the inability or unwillingness of donors to make long-term commitments to recipients (Desai & Kharas 2010). Thus, Eifert and Gelb (2005, 2008) propose that donors should move away from fragmented, conditionality based funding and make multi-year pre-commitments, with safeguards, to ensure a longer time planning horizon. Moreover, donors should promote harmonisation, which will contribute to high correlation among their aid flows (Desai & Kharas 2010).

Recipient countries can also help themselves deal with aid volatility. Tressel and Prati (2006) suggest that recipients can protect themselves from fickle donors by developing a
range of cushioning devices such as reserves and/or stabilisation funds’. This suggestion is supported by Eifert and Gelb (2008) who argue that recipients could cushion expenditure against exogenous fluctuations in disbursements by using active reserve management. They argue that a moderate reserve buffer can help to cushion a good deal of exogenous volatility in aid.

Furthermore, Levin and Dollar (2005) and Collier (2002) suggest that recipient countries can reduce aid volatility by improving their institutional and policy environments. They argue that ‘donors react to improvements or deteriorations in recipient countries’ policy climate by increasing or decreasing aid’ (p. 23). Similarly, Bulir and Hamann (2003) and Clarke et al. (2008) argue that aid volatility could be reduced if donors and recipients comply with objectives of programs, improve program design, and enhance cooperation and coordination.

4. Aid Volatility in Tuvalu

4.1 Methodology

Because of time constraints on data collection, the data used for examining aid volatility relative to other major government revenues are limited to 1996–2008. They were obtained from Tuvalu National Budget documents, the ADB’s Statistical Database System, and the Tuvalu Aid Statistical Report 2009 (GOT 2009). Data used for analysing aid volatility by donor, type and sector are restricted to 2001–2009. These data were obtained from the Tuvalu Aid Statistical Report 2009 (GOT 2009). Clarke et al. (2008) suggest that ‘four to five years of unstable aid can potentially have significant impacts on a country’s growth and development’ (p. 190). Data from the OECD database (Organisation for Economic Co-operation and Development/Development Assistance Committee (OECD/DAC) 2010) were also used to supplement and cross-check aid data from Tuvalu National Budgets (GOT 2005, 2007b, 2008), the ADB database and the Tuvalu Aid Statistical Report 2009 (GOT 2009).

This study uses the simple year-on-year variations method and the CV method to determine the degree of aid volatility in Tuvalu. Yearly aid receipts by donor, type and sector determine year-on-year fluctuations in aid allocations. The simple year-on-year variations method was used in Clarke et al. (2008) while the CV method has been used in many aid volatility studies, including by Levin and Dollar (2005), Vargas-Hill (2005, and Clarke et al. (2008).

4.2 Aid Volatility Analysis

4.2.1 Analytical Narrative of Year-on-Year Aid Variations in Tuvalu

Figure 2 (which is drawn from Figure 1 in Section 3) shows the simple year-on-year variation of foreign aid receipts to Tuvalu from
1996 to 2008. As argued by Clarke et al. (2008), there is some value in analysing aid volatility using this method, especially for analytical research and if there is a problem with data.

Figure 2 illustrates that aid disbursements to Tuvalu have fluctuated a great deal since 1996, with yearly reductions and increases ranging between 35 and 182 per cent. Therefore, it is apparent from this analysis of simple year-on-year variations that aid in Tuvalu has been fluctuated significantly.

### 4.2.2 Aid Volatility Relative to Major Government Revenue

There are four main sources of government revenue in Tuvalu: foreign aid, tax revenue, proceeds from fish licences, distributions from the TTF and payments from the .TV (GOT 2006). All of these revenues are generated offshore, except for tax revenue.

Table 2 shows the significance and instability of foreign aid in Tuvalu through its share in government revenue from 1996 to 2007. It shows that aid’s unstable contribution to government revenue ranged from 18 per cent in 2001 to 76 per cent in 2007.

Table 3 shows the degree of aid volatility relative to the volatility of other sources of government revenue. It shows that, with a CV of 0.49, aid volatility is just below the volatility of other major government revenue sources.

| Year | Aid (Aus$’000) | Gov rev (Aus$’000) | Aid/gov rev (%) |
|------|---------------|--------------------|----------------|
| 1996 | 9,676         | 25,834             | 37             |
| 1997 | 4,312         | 24,301             | 18             |
| 1998 | 12,153        | 22,020             | 55             |
| 1999 | 10,463        | 22,267             | 47             |
| 2000 | 9,264         | 33,639             | 28             |
| 2001 | 23,115        | 64,234             | 36             |
| 2002 | 19,776        | 32,398             | 61             |
| 2003 | 18,182        | 39,925             | 46             |
| 2004 | 9,177         | 26,646             | 34             |
| 2005 | 8,916         | 18,290             | 49             |
| 2006 | 12,247        | 25,488             | 48             |
| 2007 | 19,247        | 25,410             | 76             |
| 2008 | 12,533        | 24,799             | 51             |
| Total| 169,061       | 385,251            |                |

Note: Real value adjusted to 2001 prices using the Tuvalu Consumer Price Index.

Source: Author’s calculations based on Tuvalu National Budgets, ADB Statistical Database and the Tuvalu Aid Statistical Report 2009.

| Source       | CV  |
|--------------|-----|
| .TV          | 1.41|
| Fishing licence | 0.74|
| Foreign aid  | 0.49|
| Tax          | 0.20|
| TTF distribution | 0.96|

Source: Author’s calculations based on Tuvalu National Budgets, ADB Database and the Tuvalu Aid Statistical Report 2009.

CV, coefficient of variation; .TV, is the internet country code top-level domain (TLD) for Tuvalu operated by the VeriSign Company in the US; TTF, Tuvalu Trust Fund.

(fisheries licences, TTF and .TV) over the period 1996–2008, save for tax revenue.

These findings are not surprising because revenues from fisheries licences, TTF and .TV—like aid—are also generated from offshore and are highly prone to external factors (economic and environmental) that are beyond the control of the government. For example, revenues from fisheries licences depend on the catches of foreign fishing companies that have been granted licences to fish in Tuvalu waters. Changes in temperature in Tuvalu’s exclusive economic zone (EEZ) usually affect the movement of tuna into or from Tuvalu’s EEZ. This affects fish catches and accordingly affects revenues from fisheries licences. Revenues
from the TTF are also affected by fluctuations in global capital markets because the TTF is invested offshore. For instance, the recent global financial crisis resulted in the TTF not making any distributions or returns between 2009 and 2013. Therefore, just like aid, revenues from these other sources are expected to be highly volatile.

Aid volatility is much higher than the volatility of domestic revenue (tax), which has a CV of 0.20. This is consistent with the findings of Gemmell and McGillivray (1998), Bulir and Hamann (2001, 2003) and Hudson and Mosley (2008).

The data suggest that aid volatility is generally not countercyclical to fluctuations in non-aid revenue. As Figure 3 shows, movements in aid offset movements in non-aid revenue only in 1997 and 2007, and aid volatility has not generally been offset by fluctuations in non-aid revenue. This observation is consistent with findings of Pallage and Robe (2003), Gemmell and McGillivray (1998) and Bulir and Hamann (2003) that aid is not countercyclical but follows recipients’ business cycles.

4.2.2 Aid Volatility by Donor

Figure 4 shows year-on-year variations in the aid to Tuvalu from its major bilateral donors over the period 2001–2008. Disbursements over the period from New Zealand and Australia were more stable than those from Japan and ROC.

Figure 5 shows year-on-year aid flows from Tuvalu’s multilateral donors for the period 2001–2008.
Generally, it shows that disbursements from all multilateral donors to Tuvalu fluctuate considerably over time.

Table 4 summarises the volatility of aid flows from different donors. The CVs for aid flows for the period 2001–2008 from Japan, ROC, ADB, World Health Organization (WHO), UN Development Programme (UNDP) and Pacific Islands Forum Fisheries Agency (FFA) at above 0.90 are high relative to aid flows from Australia, New Zealand and the EU, which have CVs under 0.40. There are a number of reasons why aid flows from Tuvalu’s major development partners vary significantly between years. In the case of Japan, as discussed in Section 2, most of its aid to Tuvalu is for large infrastructure projects with costs ranging from just a few hundred thousand dollars to tens of millions of dollars. For example, in 2001, Japan provided Tuvalu with an inter-island vessel that cost more than US$14 million. In 2002, Japan also provided funding of more than US$11 million for the new hospital on Funafuti. Another major project (US$7 million), the Funafuti Power Station begun and completed in 2007, was also funded by Japan. However, in between these years, Japan funded smaller projects such as the Community Fishing Centres Upgrading Project in 2003, which had a cost of US$160,000 and the Fuel Grant Project of more than US$1 million in 2006, 2007 and 2008 (GOT 2009).

The significant CV for aid flows from ROC can be attributed mainly to the significant increase in aid in 2003 when it provided funding of more than US$9 million for the construction of the new government building. Otherwise, yearly aid flows from ROC have been fairly stable as they have been basically providing direct financial support to the government’s budget.

Figure 5 Multilateral Donors’ Year-On-Year Variations in Aid to Tuvalu, 2001–2008 (AUS$’000)

Notes: (a) Real value adjusted to 2001 prices using the Tuvalu Consumer Price Index.
(b) The three loans from the ADB to Tuvalu totalling US$7.82 million have not been accounted for in this table as they were not in the Tuvalu Aid Statistical Report 2009.
Source: Author’s calculations based on the Tuvalu Aid Statistical Report 2009.

Table 4 Coefficient of Variations by Donor, 2001–2008

| Donor     | Mean (Aus$’000) | STD  | CV   |
|-----------|-----------------|------|------|
| New Zealand | 1,879           | 386  | 0.21 |
| Australia  | 2,694           | 754  | 0.28 |
| EU         | 1,062           | 372  | 0.35 |
| ROC        | 3,789           | 3,564| 0.94 |
| UNDP       | 183             | 186  | 1.02 |
| FFA        | 108             | 113  | 1.05 |
| Japan      | 4,624           | 5,914| 1.28 |
| WHO        | 195             | 357  | 1.83 |
| ADB        | 416             | 834  | 2.01 |
| Bilateral  | 13,136          | 5,607| 0.43 |
| Multilateral | 2,265       | 734  | 0.32 |

Notes: (a) Real value adjusted to 2001 prices using the Tuvalu Consumer Price Index.
(b) The three loans from the ADB to Tuvalu totalling US$7.82 million have not been accounted for in this table as they were not in the Tuvalu Aid Statistical Report 2009.
Source: Author’s calculations based on the Tuvalu Aid Statistical Report 2009.

ADB, Asian Development Bank; CV, coefficient of variation; EU, European Union; FFA, Pacific Islands Forum Fisheries Agency; ROC, Republic of China; STD, standard deviation; UNDP, United Nations Development Programme; WHO, World Health Organization.
Aid flows from Australia, New Zealand and the EU have been fairly stable since 2001, scoring CVs of 0.28, 0.21 and 0.35, respectively, compared with other donors such as Japan, WHO and ADB, which have CVs of 1.28, 1.83 and 2.0, respectively. Australia, New Zealand and the EU have bilateral partnership agreements with Tuvalu specifying their commitments over the medium term. For instance, in August 2009, the prime minister of Australia and Tuvalu’s prime minister signed the Partnership for Development between the Government of Australia and the Government of Tuvalu, outlining Australia’s commitments to assist Tuvalu achieve the Millennium Development Goals (Australian Agency for International Development 2010). This agreement was a continuation from the previous bilateral agreement between the two countries. Current New Zealand assistance to Tuvalu is guided by the New Zealand-Tuvalu Development Programme Framework 2002–2007 (New Zealand Agency for International Development 2010). Assistance from the EU is guided by the Tuvalu—European Community EDF 10 Country Strategy Paper and National Indicative Programme 2008–2013 (European Community 2010). Areas of assistance from these three donors are mostly routine in nature. For instance, Australia and New Zealand have been providing yearly scholarship assistance and training programs to Tuvalu. The EU provides funding assistance for water and sanitation (including waste management) programs that are considered recurrent in the national budget. Unspent funds in yearly aid allocations by Australia and New Zealand are usually paid to the TTF at the end of the financial year.

Moreover, Australia and New Zealand are signatories and strong proponents of aid effectiveness agreements such as the Paris Declaration (OECD/DAC 2005), Accra Agenda for Action and Cairns Compact, which strongly advocate for less volatile aid (Australian Government 2011).

While ADB’s aid to Tuvalu is guided by the Tuvalu-ADB Country Partnership Strategy 2008–2012 (ADB 2008), there is still a significant degree of aid volatility, as shown by the CV of 2.0. This is because, first, a large share of ADB’s assistance went into technical assistance (TA) during 2001–2005, and this expenditure was relatively stable. In 2008, aid disbursements from the ADB increased by almost 300 per cent when Tuvalu received a one-off grant of US$2 million to assist in paying off the outstanding debts of public corporations (GOT 2008). Note, however, that three loans from the ADB to Tuvalu in 2008 totalling US$7.82 million have not been accounted for in Table 4. Otherwise, ADB’s aid allocation to Tuvalu would have been relatively stable.

Aid disbursements from WHO, UNDP and FFA have also been highly volatile during 2001–2009, as reflected in their high CVs in Table 4.

Therefore, this analysis suggests that project aid is more volatile than program and budget support aid. Accordingly, aid from donors who contribute more project aid is more volatile than aid from donors focusing on program and budget support aid. Moreover, the analysis shows that aid from multilateral organisations has been less volatile (CV 0.32) than aid from bilateral donors (CV 0.43). This finding is consistent with McGillivray’s (2006) findings, which show that multilateral aid has been much more stable than aid from bilateral donors.

### 4.2.3 Aid Volatility by Aid Type

The main reason for the higher volatility of capital aid is because capital projects are one-off in nature compared with recurrent and routine programs under budget support and program aid (see Table 5). The low volatility of TA aid is not surprising, as it is observed that most TAs have medium to long-term engagements in Tuvalu (GOT 2009).

#### Table 5 Coefficient of Variation by Aid Type, 2001–2008

| Aid type                              | CV   |
|---------------------------------------|------|
| Project aid (including capital projects) | 0.82 |
| Program aid (including Budget Support)  | 0.20 |
| TA                                    | 0.17 |

Source: Author’s calculations based on the Tuvalu Aid Statistical Report 2009.

CV, coefficient of variation; TA, technical assistance.

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4.2.4 Aid Volatility by Sector

Table 6 shows aid volatility by sector. Note that yearly aid disbursements to all sectors have been highly volatile (at CVs of more than 0.90) except for the education sector (CV 0.19). One plausible reason for stable yearly disbursements to the education sector is that most programs in this sector, particularly scholarships, in addition to being routine programs (not one-off), are largely financed by Australia and New Zealand, which have relatively stable disbursements, as shown in Table 4. Aid to other sectors is mostly for one-off capital projects, such as the Power Station Project financed by Japan in 2007.

Again, this analysis, like the analysis on aid volatility by donors, observes that program aid (e.g. scholarships and training under the education section, which are supported by Australia and New Zealand) are less volatile than project aid such as those under the fisheries sector, which are mostly financed by Japan.

This analysis also, interestingly, shows that aid to the health sector is highly volatile with a CV of 0.98. Disbursements in this sector are more for individual, one-off projects rather than for medium to long-term programs. The same applies to other sectors.

5. Policy Implications

5.1 Causes of Aid Volatility in Tuvalu

Some of the causes of aid volatility in Tuvalu have been discussed in Section 4.2. As well, aid volatility in Tuvalu is caused by problems in aid management. For example, there was a large ADB project loan—the Tuvalu Maritime Training Institute (TMTI) Rehabilitation Project—that ran into massive cost overruns and delays because, among other reasons, the chief executive officer (CEO), who had been central to the implementation of the project, was suddenly removed from his position by the government. This termination delayed the project as a new CEO had to be recruited and led to delays in disbursement (ADB 2004).

Furthermore, as discussed in the aid volatility by donor section, aid volatility can be caused by lack of agreements or lack of effective agreements between Tuvalu and its development partners. For instance, development partners such as Australia, New Zealand, ADB7 and EU usually have effective bilateral and multilateral agreements with Tuvalu, which they are often accompanied by good monitoring and evaluation, resulting in low aid volatility. However, this argument may be irrelevant to donors such as Japan that focus more of their aid on big infrastructure projects, which usually have substantial cost variations.

Third, aid is more volatile if it is project aid rather than budget support and program aid. For example, aid to the education sector is more for program activities such as human resource development (i.e. scholarships and training) and thus has low volatility. Aid to the energy, transport and infrastructure sectors is more likely to be project aid with higher volatility.

5.2 Consequences of Aid Volatility in Tuvalu

The literature argues that aid volatility is a significant problem because shortfalls in aid disbursements can result in projects not being completed (Hudson & Mosley 2008). In the case of small island countries, Chowdhury and Vidyattama (2008) argue that aid volatility can cause significant problems for project implementation and the government budget.

7. Note that the high CV for aid from the ADB is due mainly to the one-off financial grant that ADB gave Tuvalu in 2008.

Table 6 Coefficient of Variation, by Sector, 2001–2008

| Sector                | CV    |
|-----------------------|-------|
| Education             | 0.1917|
| Water and sanitation  | 0.9397|
| Environment           | 0.9404|
| Fisheries             | 0.9503|
| Agriculture           | 0.9526|
| Communications        | 0.9532|
| Energy                | 0.9750|
| Transport             | 0.9788|
| Health                | 0.9824|
| Others                | 0.9839|

Source: Author’s calculations based on the Tuvalu Aid Statistical Report 2009.

CV, coefficient of variation.

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In Tuvalu, again using the example of the TMTI Rehabilitation Project, the delay in loan disbursements from the ADB almost resulted in TMTI being removed from the ILO’s ‘White List’. The project loan of US$1.97 million was approved by the ADB in 2002; however, because of administrative problems in Tuvalu, the loan only became effective in 2003 (ADB 2004). This delay resulted in considerable cost overruns, which required Tuvalu to seek a supplementary loan to complete the project. Fortunately, the supplementary loan application was approved; otherwise, the TMTI Rehabilitation Project would have been left uncompleted and TMTI excluded from ILO’s ‘White List’. This would result in Tuvalu seafarers becoming unqualified to work on foreign vessels. Ultimately, this would have severely affected the people and the economy of Tuvalu given the large contribution of remittances from seafarers working on overseas vessels. This is an example of the consequences of aid volatility; there are many similar happenings in other smaller aid projects.

Volatile aid flows, which give rise to revenue windfalls, may cause Dutch disease-like problems (Van Wijnbergen 1984; Caballero 2007). Such situations can be easily observed in a small country like Tuvalu when receiving funding for large infrastructure projects. For instance, in 2002 Tuvalu received funding for a large infrastructure project from Japan—the new Princess Margaret Hospital on Funafuti. The project was a year-long project and had to be completed by December of the same year. Given the magnitude of the project, workers were recruited from the outer islands in addition to those on Funafuti (capital). According to information from the National Bank of Tuvalu (where salaries of workers on the project were deposited), workers on this project received much higher wages than those working elsewhere in the country. This was because of the project’s demand for workers. Accordingly, there was a significant increase in inflation, from 1.6 per cent in 2001 to 5.2 per cent in 2002, particularly because of increased prices of non-tradeables such as housing rents (GOT 2005).

As observed in the literature, aid volatility can also affect fiscal planning in Tuvalu. For instance, late disbursements of committed aid have resulted in Tuvalu re-prioritising its projects and activities so that lower priority projects have been put on hold in order to get savings from them to finance priority projects affected by late disbursements in aid funds. Similarly, according to a Pacific Islands Forum Secretariat (2008) report, the Planning and Budget Department in Tuvalu observed that during round table meetings with donors, donors committed assistance to areas of interest, only for that to be followed by significant difficulties or delays faced in following-up on the promises.

Overall, aid volatility can have harmful effects on economic growth, macroeconomic stability, fiscal management and livelihoods of people of Tuvalu through various channels as discussed above. Therefore, although aid volatility is not as high as that of other major government revenue streams, aid is still much more volatile than domestic revenue (tax) and significantly high in respect to projects and certain sectors when disaggregated. Thus, Tuvalu has to find ways to deal with aid volatility.

5.3 Dealing with Aid Volatility in Tuvalu

The above discussion suggests that aid volatility is bad for Tuvalu. According to the literature and Tuvalu’s experience with aid volatility, Tuvalu can protect itself from aid volatility’s impacts by developing or strengthening an inventory of ‘cushioning’ devices such as reserves or stabilisation funds. Tuvalu also needs to work more cooperatively with its development partners and conform to the objectives of programs to reduce aid volatility. Tuvalu can also encourage donors to target aid more to budget support and programs rather than to individual projects.

Having a ‘reserve fund’ is important because in cases where there are problems

8. Arellano et al. (2005) argue that unexpected delays in implementing programs are a cause of aid volatility.
9. Termination of TMTI CEO’s contract by the GOT in 2003.
with the disbursement of aid, projects can continue to be funded from the ‘reserve fund’ (Tressel & Prati 2006; Eifert & Gelb 2008). The economic and social value of the projects will not be affected as their implementation will not be stalled. Moreover, there is less likelihood of incomplete projects. A reserve fund could also provide protection against instability in fiscal management, which is also a cost of aid volatility, as there would be no need to reprioritise fiscal spending if there is a problem with aid disbursements.

Currently, Tuvalu can use the Consolidated Investment Fund (CIF) as a buffer against aid volatility. The CIF (sometimes uncommonly referred to as the TTF Account B) is separate from the main TTF. The government can use savings in the account to finance the national budget. However, as this study understands, the CIF has never been used to cater for projects that have been affected by aid volatility. Moreover, as gathered from evidence in national budget documents, although there are efforts to sustain and strengthen the value of the CIF, most of the time, the account has been almost drawn to zero. Therefore, the GOT could use the CIF as a buffer against aid volatility; but at the same time, it needs to strengthen the Fund to enable it to manage aid volatility.

Second, Tuvalu should strengthen its policy and institutional environment as donors often react to improvements or deteriorations in the policy and institutional environment of a country by increasing or decreasing aid disbursements, respectively. Related to this argument is the need for Tuvalu to comply with the objectives of program aid and enhance coordination and cooperation with donors. These are policy suggestions by Levin and Dollar (2005) and Bulir and Hamann (2003), which this article believes can assist in minimising the problem of aid volatility and its impact in the country. This means that Tuvalu has to respect its commitments to international and regional agreements such as the Paris Declaration on Aid Effectiveness, the Accra Agenda for Aid Effectiveness and the Cairns Compact on Strengthening Development Coordination in the Pacific. Most importantly, Tuvalu needs to provide sound financial systems. These include formulating an effective procurement policy and establishing a reliable aid database to better manage aid in the country. Third, Tuvalu could arrange with its development partners for aid to be targeted more on budget support and programs rather than on specific projects. As shown from findings in the aid volatility analysis section, project aid is more volatile than budget support and program aid. This suggestion is consistent with the demands of the Paris Declaration on Aid Effectiveness, which support and encourage budget support and program aid (OECD/DAC 2005). Moreover, in cases of large infrastructure projects, it is sensible that such projects be implemented in phases. Not only would this arrangement lower aid volatility, but it also addresses issues relating to absorptive capacity, resource constraints (e.g. labour) and ‘Dutch disease’.

6. Conclusion

This study finds that aid disbursements to Tuvalu have been fairly unstable. Moreover, the volatility of aid (CV of 0.49) is significant relative to that of domestic revenue. Furthermore, when disaggregated by donor, sector and type, the volatility of aid varies significantly. For instance, aid is more volatile in project aid relative to budget support and routine programs such as scholarships. Consequently, sectors that received more capital and project aid such as the energy, transport, communications, health and economic infrastructure show higher volatility than those receiving budget support and program aid such as the education sector. Besides, aid from multilateral organisations has been less volatile than aid from bilateral donors.

It is found that aid volatility may be caused by poor administrative arrangements, weak financial institutions and systems, lack of effective bilateral and multilateral aid agreements between Tuvalu and its development partners, and the targeting of aid on projects rather than on programs and budget support.
The consequences of aid volatility include incomplete projects and cost overruns of projects, and problems in fiscal planning, Dutch disease-like problems, and lowered economic and social value of aid.

There are viable options suggested in the literature and lessons learned from Tuvalu’s own experience as discussed in this study that Tuvalu could consider in dealing with the problem of aid volatility. First, Tuvalu could consider strengthening its foreign reserves, particularly the CIF. ‘Reserve funds’ like the CIF would enable Tuvalu to cover for problems such as delays in aid disbursements, without needing to stall the implementation of aid projects and programs. Also, Tuvalu should provide a sound policy and institutional climate, as donors often react to policy and institutional conditions in recipient countries. Accordingly, Tuvalu should strengthen cooperation with its development partners and respect the objectives of aid programs. Furthermore, Tuvalu should arrange with its development partners for aid to be targeted at budget support and programs instead of specific projects because project aid is more volatile than budget support and program aid. Additionally, as large infrastructure projects contribute significantly to aid volatility, implementing them in phases would help lessen aid volatility and at the same time also help mitigate issues such as absorptive capacity, limited labour and Dutch disease-like problems.

There are remaining unanswered questions that could be considered for further research. These include issues related to political economy, governance and exchange rate in Tuvalu. For instance, Tuvalu had four prime ministers between 1999 and 2001. As new administrations often review aid programs when they come into office, it is possible that there were changes in aid disbursements as a result. Moreover, there are questions related to political motivations, particularly with respect to bilateral donors, which may contribute to year-on-year swings in their aid disbursements. For example, Tuvalu has strong diplomatic relations with ROC and has also been supporting Japan’s controversial whaling. Thus, questions can be asked whether these factors could have been important determinants of aid volatility. Furthermore, if Tuvalu endeavours to depend less on foreign aid to lessen the impacts of aid volatility, as conventional thinking suggests, what would be the impact of declining aid, and how could Tuvalu cope with these impacts. Additionally, Tuvalu uses the Australian dollar; however, a significant portion of its revenue comes in US dollar. It is plausible that fluctuations in exchange rates in the two currencies between 1996 and 2008 would have also affected aid volatility. The ‘Dutch disease’ issue is also inadequately discussed in the article and could be an important issue to expand on in future studies on aid volatility in Tuvalu.

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