Are Pacific countries coping with surging oil prices?

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The Pacific island countries rely almost exclusively on oil-based fuel for their energy needs. The recent surge in oil prices has exposed the vulnerability of these countries to the vagaries of world oil markets. The implications for import bills and for national incomes are considerable. This paper investigates these implications and explores measures for mitigating the impacts.

The setting

The Pacific island economies are among the most vulnerable in the world to shifts in world oil prices. Energy in the Pacific for electricity generation and transport is sourced nearly entirely from oil-based fuels. Pacific island countries are therefore at the mercy of developments in world markets for a single commodity. In contrast, most other countries, including developing countries, are more diversified in their primary energy sources, with coal, gas and hydro being particularly important sources of energy for electricity generation.

Oil prices have been rising consistently and rapidly since 2001. The indicator West Texas Intermediate (WTI) crude oil price averaged about US$64 a barrel in September 2006 compared with US$26 a barrel four years earlier. Annual price changes for diesel fuel and for gasoline—the key oil-based fuel products imported into the Pacific—exceeded 30 per cent in 2004 and 2005. Average prices in 2006 to September were 20 per cent higher than in 2005 (Figure 1).

Diesel fuel is the main energy source in the Pacific for heavy machinery and for electricity generation. Gasoline is the main energy source for light-vehicle transport. As is to be expected, movements in diesel and gasoline prices are largely in line with movements in crude oil prices. The 250 per cent rise in imported fuel prices since 2001 converts to a 250 per cent rise in the value of energy imports for Pacific island countries in order to maintain in 2006 the level of energy consumption of the early 2000s.

Official forecasts of the US government are that WTI crude oil prices will average US$65 a barrel in 2007, fall slightly in 2008 and stabilise thereafter (Energy Information Agency). These forecasts point to little respite to the prevailing high prices in the short or medium term. Underpinning this is
continued pressure on global production capacity—in oil production and refining—with new capacity coming on stream relatively slowly. Moreover, continued strong growth in emerging economies is expected to keep world demand for oil high. Futures prices remain high, with prices in September 2006 above US$60 for all months until 2012.

More recently, prices have become highly volatile. This volatility is underscored by the tight supply situation. The lack of flexibility in supply means that fluctuations in demand—for example, due to seasonal variations—are manifested in sharp price movements. This situation is augmented by the dynamic nature of heightened geopolitical tensions in the Middle East. Price volatility is likely to continue until at least the end of 2007, after which capacity build-up is expected to begin relieving supply pressures (ABARE 2006).

The exception—Papua New Guinea

Papua New Guinea produces and exports oil, and refines oil at the recently commissioned Napanapa oil refinery for export and domestic consumption. This places it in a unique position among Pacific countries. The recent surge in oil prices has made a substantial contribution to the sharp improvement in Papua New Guinea’s terms of trade (the price of exports relative to the price of imports). Export earnings from oil and refined oil products represent about one-quarter of all commodity exports and are equivalent to about 15 per cent of GDP. The
rise in oil prices has therefore had considerable positive implications for Papua New Guinea’s national income.

As oil production in Papua New Guinea is characterised by foreign ownership with little use of local inputs, most of the linkage to the domestic economy is via income tax and other revenue flows into the national budget. The sharp rise in oil prices has therefore made a big contribution to the fiscal position of the national government. By the middle of 2006, the rapid rise in revenues from the oil-producing industry helped the budget surplus to run at about 2 per cent of GDP (Bank of Papua New Guinea 2006).

With the benefits to Papua New Guinea of the surge in oil prices being channelled through the government budget, the extent to which this can be converted to benefits for the country as a whole is contingent on how well the windfall gains are managed. Developing countries that achieve long-term development after a resources boom are the exception rather than the rule (Gelb 1988; Auty 1993). This ironic outcome is due typically to the influx of funds leading to wasteful and unsustainable government expenditure on consumption, subsidies and ill-conceived investments. The resources boom in Papua New Guinea in the early 1990s is a case in point. Management of the windfalls this time around appears to have been appropriate, but it is imperative that this continues.

Another concern is that the boom in oil export revenues will have led to a stronger real exchange rate than would otherwise have prevailed, causing a reduction in the export competitiveness of more labour-intensive sectors, in particular, agriculture. The result is a structural shift in the economic

Figure 2  Fuel imports as a percentage of merchandise exports in Pacific island countries, 2004–06 (per cent)

* figures for Samoa and Tonga refer to the right axis.

Note: The estimates for 2006 are based on two assumptions: fuel imports increase in line with average price rises that have occurred up to September 2006 so that fuel import volumes are constant; and merchandise export growth is 5 per cent.

Sources: Central bank bulletins of each country.
fortunes within Papua New Guinea away from broad-based economic activity and towards enclave activity. This has the potential to accelerate migration from rural areas and, through this, increase urban unemployment and crime (Chand and Levantis 2000). Appropriate management of the windfall gains therefore requires government to redirect these revenues to investments improving the enabling environment in rural areas.

The exposure of the Pacific island economies

The island nations of the Pacific do not produce or refine oil, so they rely on imports of refined oil products. Oil-based fuels represent by far the biggest component of merchandise imports for Pacific island countries. In 2005, fuel imports as a percentage of total merchandise imports ranged from 14 per cent in Vanuatu to 30 per cent in Solomon Islands.

More telling is to gauge the role that the importation of fuel is playing in the balance of trade of the Pacific island countries by comparing the value of fuel imports with merchandise exports. In Tonga and Samoa, the value of fuel imports was more than double the aggregate of all merchandise exports in 2005 (Figure 2). For the remainder of the larger Pacific island countries—Fiji, Kiribati, Solomon Islands and Vanuatu—fuel imports as a percentage of merchandise exports in 2005 ranged from 42 per cent for Solomon Islands to 85 per cent for Kiribati. In Fiji, fuel imports in 2005 were equivalent to 66 per cent of merchandise exports.

Figure 3  Fuel imports, 2004–06 (per cent of GDP)

![Fuel imports, 2004–06 (per cent of GDP)](image)

**Note:** The estimates for 2006 are based on the assumption of fuel imports increasing in line with price rises that have occurred up to September 2006 so that fuel import volumes are constant.

**Sources:** Central bank bulletins of each country and the International Monetary Fund’s *World Economic Outlook* database for nominal GDP estimates.
(including re-exports). Much has been said of the impact of the decline in the export-based sugar and textile industries in Fiji and the risks associated with gold. In 2005, the combined total exports of sugar, textiles and gold were half the value of fuel imports. The impact of the rise of fuel prices between 2004 and 2005 was to add about F$150 million to the import bill. This price effect alone was bigger than the export value of the entire textiles industry, and about 70 per cent of the value of exports of sugar.

For all Pacific island countries, the share of export earnings spent on fuel imports has increased sharply and will continue to do so in 2006 (Figure 2). In 2006, based on the rises in fuel prices that have already occurred, the fuel import bill for Fiji will rise by about F$160 million, which is equivalent to about 13 per cent of merchandise exports and represents about 30 per cent of Fiji’s foreign reserves. A story of dramatic implications of the recent rises in fuel prices since 2005 can also be told of the other Pacific island countries.

A further indicator of the vulnerability of the Pacific island countries to world oil and associated fuel prices is the value of imports of oil-based fuels as a share of GDP. In 2004, fuel imports were equivalent to 20 per cent of GDP in Kiribati (Figure 3). By 2006, this share is expected to rise to 29 per cent. For other Pacific island countries, the magnitude of fuel imports in the economy is less, but still substantial. It is estimated that fuel imports in 2006 will rise to 18 per cent of GDP in Fiji, 15 per cent of GDP in the Solomon Islands and about 10 per cent of GDP in Samoa and Tonga (Figure 3). Vanuatu appears to be the least directly exposed to rises in fuel prices, although it has a significant tourist industry (equivalent to 17 per cent of GDP) that could be affected if fuel costs remain high.

**Will the Pacific island countries cope?**

In view of the magnitude of fuel imports, the surge in prices will have a profound impact on the Pacific island economies. First and foremost, the price rises will have a substantial direct impact on national incomes. The shifts in fuel import shares of GDP represented in Figure 3 indicate the direct impacts of the rise in fuel prices on national income for the various Pacific island countries. For example, the estimated rise in the import share from 26 per cent of GDP in 2005 to 29 per cent in 2006 for Kiribati can be interpreted as a short-term direct impact on national income equivalent to approximately 3 per cent of GDP. For Fiji, the estimated direct impact on national income is about 2 per cent of GDP, and for the other Pacific island countries the estimated impacts are about 1 per cent of GDP.

The direct impact on national incomes of the rise in fuel prices will, in the longer term, be mitigated to the extent that alternative energy sources or more energy-efficient economic activities can be found. More immediately, the direct impact on national incomes will be mitigated by shifts in demand away from energy, induced by the rise in prices for energy. In countries with flexible exchange rate regimes, the impacts would be softened further as a result of the exchange rate depreciation that would follow the deterioration in the terms of trade (due to the rise in fuel prices). This outcome would make imports more expensive on the local market and exports more attractive in international markets, leading to reductions in demand for all imports (including fuel) and a rise in demand for exports. But fixed exchange rate regimes are operated in the Pacific island countries that have their own currency, undermining the ability of the economies to accommodate the rise in fuel prices.
Fixed exchange rates mean that rises in fuel prices have to be accommodated by depletion of foreign reserves. As a result, foreign reserves have declined rapidly in Fiji (Figure 4). This is despite the recent rapid growth in remittances and tourism; both have more than offset lost foreign exchange earnings due to weakness in sugar and textile exports. Support to foreign reserves provided by the peak tourism season in the September quarter is likely to have delayed a more rapid depletion of foreign reserves until later in the year and into early 2007. In September 2006, to avert severe stress on foreign reserves and restore credibility in the currency, the Fiji government raised foreign capital through an international bond issue.

In Samoa and Tonga, reserves have dipped below four months of import cover in the second half of 2006. This is considered by the Central Bank of Samoa to be the minimum safe threshold. The reserve situation in these countries is not as precarious as in Fiji, but further unforeseen rises in fuel prices could change that. Samoa and Tonga are also experiencing strong growth in tourism and in remittances, which have offset some of the impacts on foreign reserves and will continue to do so. Oil imports are less important to the Samoan and Tongan economies compared with Fiji (Figure 3), and so Samoa and Tonga are less exposed to movements in fuel prices.

Despite the rise in fuel prices and despite the fixed exchange rate regime, foreign reserves have risen in Vanuatu and are at relatively healthy levels (Figure 4). Surging tourism receipts, increased inflows of aid and the attraction of speculative foreign investment into the flourishing real estate market have more than compensated for the increase in the fuel importation bill. The Solomon Islands too has a healthy level of foreign reserves.
supported by post-conflict recovery in exports and inflows of aid.

It is important to note that while foreign reserve levels and economic growth in Solomon Islands and Vanuatu are healthy, their growth rates and foreign reserve levels would have been stronger if their exposure to rises in world fuel prices had been reduced. It is also a concern that, tourism aside, the main contributors to foreign reserves offsetting the losses associated with fuel price rises are not associated with increased exports and hence economic activity.

The micro-states of the Pacific do not have their own currencies, so they do not have foreign reserves or exchange rates. For these countries, the economic impact of rises in fuel prices will be more profound as adjustments in foreign reserves cannot be used as a mechanism to soften the impacts. There is no price mechanism to help stimulate exports to offset the impacts, and many of these countries have not tapped into the tourism industry. For the remittance-dependent micro-states, the continuing expansion of remittances will alleviate the impact on national incomes, and economic recession might stimulate further increases in remittances.

The primary mechanism by which the micro-states can alleviate the impact of reductions in national income in the short term will be to increase foreign borrowing by governments, or reduce holdings of foreign assets. This approach will not, however, be sustainable if fuel prices remain high in the longer term. Kiribati has substantial holdings of foreign savings and so has the option of reducing these holdings or increasing foreign borrowing to reduce the impact of rising fuel prices on living standards. Nauru does not have scope to do either and must rely on donors to alleviate the impact. Most fuel imported to Nauru is already provided in kind by donors.

Beyond the impacts on national incomes and foreign reserves, rises in world fuel prices have significant direct impacts on inflation and indirect pass-through effects to increased costs. Of concern is that increasing fuel prices are affecting the costs of air travel, which will impact on tourism, which is by far the most important export and foreign exchange earner for the region. The potential impact of high fuel prices on tourism in the Pacific is complex. High oil prices are partly a result of rising global incomes, including in countries relatively close to the region, such as China, so the same force that is driving world oil prices will also act to stimulate demand for tourism. But against this, the Pacific island destinations are remote, so the cost flow-through in air travel to these countries will tend to be greater than for competing destinations.

Another key issue is the impact on costs for the state-owned electricity utilities. Prices are generally regulated and the ability to pass on the rapid cost increases in a timely way could be restricted by the regulatory regime. Where the costs are not passed through to price increases, the financial positions of the electricity operations are put under stress. The utilities then find it difficult to purchase fuel and repair and maintain equipment. This leads to lower revenues or greater losses to governments, increased consolidated government debt and reduced performance of the electricity utilities. In August 2006, the Fiji Electricity Authority belatedly obtained permission to increase electricity rates by 30 per cent. However, by October 2006, this was yet to be implemented.

What can be done?

Raise interest rates

The strategy of raising interest rates in the Pacific island economies might be used to soften the impacts on foreign reserves—for those countries that have low and declining foreign reserve levels—and for reducing the impact on inflation. The concern about this
strategy is that these objectives are achieved by putting stress on the business and investment environment in the face of economic activity already weakened by high fuel prices. In fact, an alternative argument could be presented to reduce interest rates so as to mitigate the impact of rising fuel prices on economic activity.

The interest rate strategy is useful only as a short-term measure in the face of pressures on foreign exchange. It is not a medium or long-term tool for dealing with the Pacific island economies’ vulnerability to world fuel prices. In view of the magnitude of fuel imports and the impact that price rises have on the value of fuel imports, there is, in any case, the risk that raising interest rates alone will not be sufficient to prevent a foreign exchange crisis. Moreover, the investment environment will be tarnished not just by the higher rates, but perhaps more importantly, by the instability in interest rates.

Modify the exchange rate regime

The substantial direct impacts on national income and the pressures on foreign reserves—in those countries that have their own currency—have emerged as a result of the large terms-of-trade shock (the rapid rise in import prices relative to export prices). The terms-of-trade shock is large because of the substantial share of fuel imports in foreign exchange dealings.

The lesson here is that fuel prices need to be included in the pegged currency arrangements of these countries. In addition to setting the exchange rate according to a weighted sum of a range of currencies, refined petroleum prices need to be given an appropriate weight. This strategy would allow some exchange rate adjustment when oil prices change, softening the impacts on national income and helping to stabilise foreign reserve levels.

If such a policy were to be adopted by the central banks, there would be opportunity to apply the much needed currency depreciations. This could be achieved through implementation of a controlled depreciation by backdating the new formula: for example, to the beginning of 2006. Although foreign reserve levels are not a concern in Vanuatu and the Solomon Islands, depreciation might still be necessary since aid and speculative capital flows are supporting foreign reserve levels rather than sustainable growth in export or import replacement activity.

An alternative proposition to the strategy of incorporating fuel prices in the pegged exchange rate formulae would be to ‘float’ the currencies and let the market decide where they should sit. In this case, the market would depreciate the currencies to accommodate the rise in fuel prices. There are, however, important reasons for avoiding this strategy, not least of which is the exchange rate volatility that will inevitably result in such thin markets. Exchange rate volatility will deter foreign investors, dismantle any credibility in the currency and place the country on a path of volatile inflation and interest rate outcomes.

Diversification of energy sources

In the medium to long term, Pacific island countries need to adopt strategies for diversifying their energy sources. By doing this, exposure to the vagaries of the world market for oil can be diluted, making their economies less vulnerable.

Imported gas for powering electricity generators is one option, but perhaps the best options relate to renewable energy sources. A recent study found that for small-grid applications, as are required throughout the Pacific, there are several renewable energy options that would cost less than diesel generation, including wind, solar/wind hybrids, biomass and mini-hydro (World Bank 2005). Moreover, this analysis was undertaken assuming oil prices about half current levels.
Converting to renewable technologies therefore has triple benefits

- reduction in the imported fuel bill and the exposure to world oil markets
- reduction in the cost base of the economies due to a reduction in the cost of electricity
- improved environmental outcomes.

Hydro generation is already being used in Fiji and there is scope for expansion. Wind generation and biomass are possibilities currently being explored. Solar is in the midst of rapid technological advancement and its flexibility and simplicity makes it the best option in remote areas. In Fiji, ethanol production is likely to be viable as production would be based on waste sugarcane, which would otherwise be used for animal feed. Legislation has been passed in the Northern Marianas requiring electricity companies to produce 50 per cent of their energy from renewable resources by 2030. In Fiji, there is currently an initiative to expand the use of renewable energy sources to 80 per cent of all primary energy sources in electricity generation.

Perhaps the most interesting energy alternative is the substitution of coconut oil for diesel. In Vanuatu, New Caledonia and Samoa, electricity generators are experimenting with using blends of diesel and coconut oil (ANZ Banking Group Ltd 2006). Importantly, coconut oil can also be used in diesel-powered motor vehicles.

Low world prices for coconuts have discouraged production and harvesting of coconuts and coconut oil. Production levels well below potential have been a characteristic across the Pacific. By using domestically sourced coconut oil for energy, not only is the exposure and vulnerability to world energy markets diminished, a stimulus is provided to broad-based rural economic development. Moreover, existing capital and technology can be retained for diesel generators and diesel-powered motor vehicles, making the energy switch feasible in the short term.

Figure 5  Wholesale fuel prices in the Pacific region, July–August 2005 (US$ per litre)

Reform the competitive environment for fuel imports and distribution

There is considerable variation in pre-tax wholesale fuel prices in the Pacific. The Singapore market prices for diesel and petrol were about US$0.40 a litre in mid 2005 (Figure 5). Pre-tax wholesale prices in Niue, however, were more than double this, while prices in the Federated States of Micronesia (FSM), Kiribati, Tonga, Tuvalu and Vanuatu were all more than 50 per cent higher than the ex-Singapore price. In contrast, prices in Samoa were only marginally above the ex-Singapore price.

Pre-tax wholesale fuel prices in Samoa confirm that isolation and small scale alone are not an explanation for the high prices in other Pacific island countries. Recent analysis has found that different regulatory and competition arrangements between countries explain much of the variation in fuel prices between Pacific island countries (Sanghi and Bartmanovich 2006; Castalia Strategic Advisers 2004). The small scale of the markets in these countries means that they are susceptible to monopolies in supply and distribution of fuel products. Samoa and American Samoa have overcome the barriers to competition in the market by developing a model of competition based on public ownership of fuel importation terminals. Every three to five years, both countries call for multinational oil companies to compete for the right to import fuel. Samoa awards this right to one company for the term of the contract while American Samoa allows two companies into the market. These arrangements rely on regular price reviews to monitor compliance with the contracts. Wholesale fuel prices in American Samoa are similar to those in Samoa.

Countries that can successfully reorganise their competitive regimes, as has been done in Samoa, will achieve considerable gains in national income. For example, if Tonga were able to reduce the margin on fuel imports to the same level as Samoa, the fuel importation bill would be reduced by about one-third or about US$9 million. Fuel imports in 2006 are estimated to be about 11 per cent of GDP, so successful reform would have a direct national income impact of nearly 4 per cent. This exceeds the current growth rate in national income. For Fiji, the direct impact on national income would also be 4 per cent, for Kiribati 9 per cent, Solomon Islands 4 per cent and Vanuatu 3 per cent.

In addition to these large direct impacts on national income, there will be gains associated with reducing business costs and, most importantly, gains in reducing the exposure of the Pacific island economies to world fuel prices by reducing their value and importance. Successful reform in these countries will be complicated. In particular, adopting the Samoan model is unlikely to be feasible given that fuel importation terminals are typically privately owned.

References


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