

Dutch Disease in the Western Pacific: an overview of the FSM economy under the Amended Compact of Free Association

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It is argued that in the Federated States of Micronesia (FSM) US aid has distorted consumption, expenditure and relative prices to such an extent that tradable production is practically non-existent. These 'Dutch Disease' impacts of aid are so dire that the economy is beyond the point of self-correction and targeted intervention by FSM governments and international development partners could be the only way to overcome the structural failings. Use of the remaining US compact infrastructure grant funds to invest in telecommunications infrastructure could increase the annual GDP growth rate by up to 0.6 per cent. Investing these funds in transportation infrastructure could increase the annual GDP growth rate by 0.67 per cent. Overcoming Dutch Disease in the FSM is no easy task, but ways forward exist for policymakers who are willing to tackle the infirmity at its core.

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The United States can trace its history with the islands now known as the Federated States of Micronesia (FSM) to nineteenth-century whaling fleets. The unique relationship between the two countries, however, began in earnest in 1947 when the United States was delegated to be trustee for the territory by the United Nations. In 1979, four of the trustee states

ratified a constitution to become the FSM. The trusteeship formally ended in 1986, at which time the United States and the FSM entered into a Compact of Free Association. Under this agreement, the United States assumed responsibility for defence of the FSM and subsequently provided roughly US\$1.5 billion in economic assistance over 15 years.



In 2004, the arrangement was extended for a further 20 years under an amended compact that provides some US\$2.1 billion in assistance. In response to economic stagnation during the first 15-year period, however, and perceived misuse of original compact funds, the United States instituted strict conditionality on the use of the amended compact's funds—institutionalised in the Fiscal Procedures Agreement (FPA) that accompanied the amended compact. Although the compact and the amended compact are largely security arrangements, the intent of the economic assistance under Title Two of the amended compact is made clear in the opening article, which states 'to promote the economic advancement, budgetary self-reliance, and economic self-sufficiency of [the FSM's] people...the United States shall provide assistance on a sector grant basis for a period of 20 years' (Public Law 108-188 [2003]).

In order to facilitate use of the funds, six grant 'sectors' were established, each overseen by a US grant manager from the Office of Insular Affairs. The sectors are health, education, infrastructure, the environment, private sector development, and public sector capacity building. By statute, the infrastructure sector receives 30 per cent of all sector grant funding, although as of March 2010, only US\$27 million of the roughly US\$155 million had been expended (Government of the Federated States of Micronesia 2010; Author's calculations). The two largest of these sectors—health and education—dominated expenditures by accounting for more than 80 per cent of all money spent from 2004 to 2008. The majority of grant funding was spent on salaries and wages, while contractual services and consumables were other major expenses (Government of the Federated States of Micronesia 2005, 2006, 2007b, 2008, 2009a; Author's calculations).

In spite of more than US\$400 million dollars in assistance during the first five years of the amended compact, little economic development has occurred. Gross domestic product has stagnated and the private sector shows few signs of life. The economic largess has prompted observers such as Hezel (2006) to ask of the FSM economy: 'Is that the best you can do?' The author suggests it is, and that the FSM should resign itself to the status of a 'MIRAB' state—one whose economy is based on migration, remittances, aid and bureaucracy. Hezel's view of the FSM economy is supported by Friberg, Schaefer and Holen (2006), who, in comparing the FSM with the Republic of the Marshall Islands (RMI), find that US economic assistance under the compact has led to large-scale migration and bureaucracy, but the economy has yet to develop a strong system of remittances. These authors also imply that the FSM economy would be best served by restructuring institutions to increase remittances and therefore become a fully fledged MIRAB economy.¹

At first glance, the assessment that the FSM is a MIRAB economy appears correct. A more detailed empirical investigation, however, suggests that economic under-performance in the FSM can be attributed at least in part to 'Dutch Disease'—an economic process of declining tradable production brought on by inflows of foreign aid, as described by Arellano et al. (2009). Although the concept of Dutch Disease has a long intellectual history, Arellano et al. are the first to put it in a dynamic general equilibrium environment in the context of foreign aid.² Generally speaking, the assistance provided under the amended compact has changed the underlying macroeconomic incentives facing producers and consumers in the FSM. Armed with this recognition, this study suggests that directed government and international action in the areas of infrastructure, institutions and investment



can indeed propel the FSM economy to greater heights.

Dutch Disease in the FSM

A review of national accounting indicators (Table 1) reveals a mixed story of macroeconomic performance over the first five-year period of the amended compact. By and large, the indicators have changed very little, although a few of the series show noticeable trends. The main indicator of economic health—real GDP—has declined in every year but one during the amended compact period and is down 0.5 per cent over the five-year period. Real private consumption has, however, shown some growth, expanding by 1.6 per cent from 2004 to 2008. This growth was due to a 6.5 per cent decline in the real trade deficit, a 2.8 per cent increase in real gross national disposable income and a 16.8 per cent reduction in real government expenditures as a result of a targeted policy effort. Thus, despite the declining GDP, the movement of the other macroeconomic indicators indicates an improvement in specific macroeconomic sectors—in particular, the trade deficit and the size of the government sector.

Preliminary GDP estimates for 2009 suggest that the FSM largely escaped the brunt of the global economic downturn. While most of the rest of the world experienced negative growth—in both real and nominal terms—it is estimated that the FSM economy expanded slightly. Forecasts for 2010 show a 1 per cent increase in nominal GDP, although in real terms this could translate into a slight decline as the global economic recovery will likely lead to a recovery in price levels. Projections for GDP from 2011 to 2019 are based on US GDP projections for the same period, adjusted for historical growth and inflation levels in the FSM. These projections suggest that nominal growth will eventually be outstripped by inflation, resulting in economic stagnation over the next decade (Figure 1). Although these projections do not account for any cyclical dynamics, the general trend is consistent with the performance of the FSM economy over the past 10 years.

In order to assess the macroeconomic impact of the amended compact, it is necessary to understand the role it plays in the macro-economy. The amended compact, which has made up roughly 35 per cent of GDP throughout the past five years, has inevitably impacted on the macroeconomic indicators discussed above. Total amended

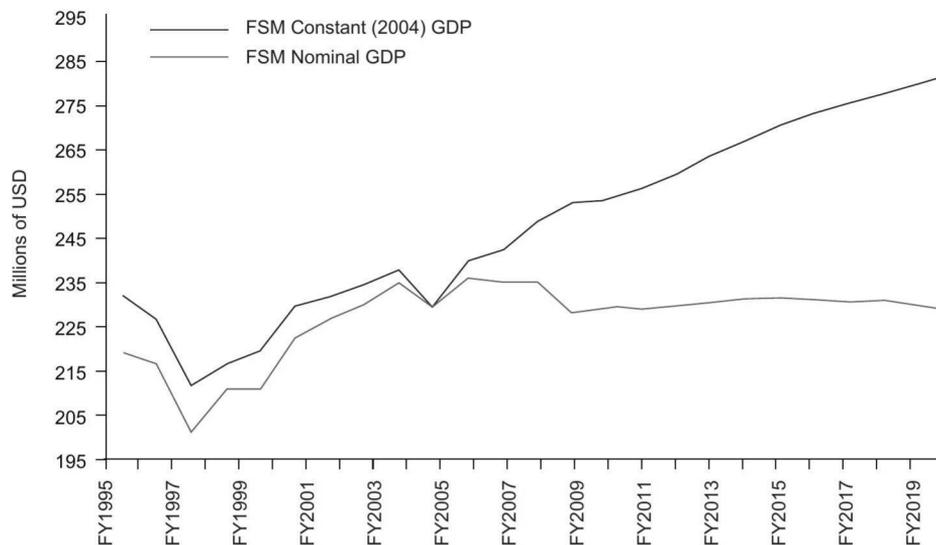
Table 1 **Macroeconomic indicators for Federated States of Micronesia** (2004 US\$ million)

Indicator	2004	2005	2006	2007	2008
Gross national disposable income	354.0	375.8	362.1	376.3	363.9
Government expenditure	169.5	147.4	149.7	144.7	141.0
Gross domestic product	229.6	236.4	235.5	235.4	228.5
Gross private consumption	198.7	209.3	206.5	212.5	201.9
Secondary income	113.9	129.3	114.6	124.0	122.0
Trade balance	-148.4	-141.2	-136.6	-130.6	-133.7

Sources: Author's calculations; Government of the Federated States of Micronesia, 2009b. *Fiscal Year 2008 Economic Review*, Government of the Federated States of Micronesia, Palikir.

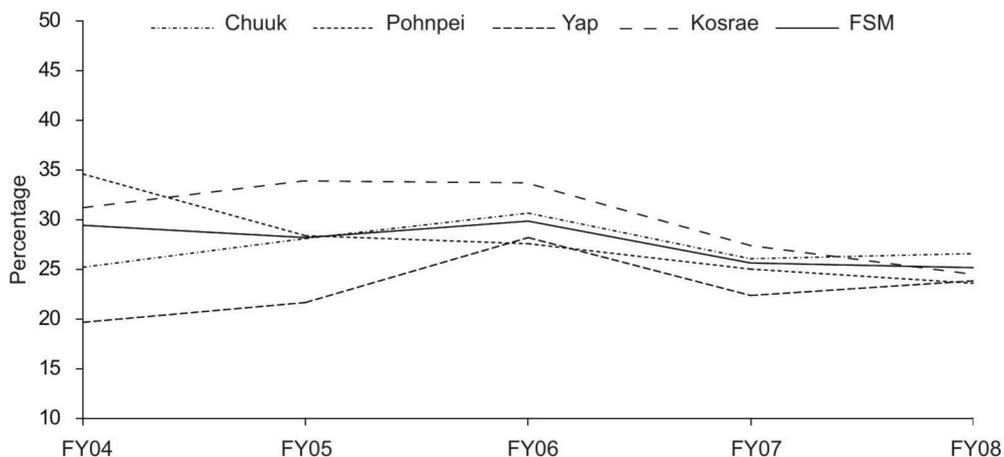


Figure 1 FSM Gross Domestic Product: historical, forecast and projection



Sources: Author's calculations; Government of the Federated States of Micronesia, 2009b. *Fiscal Year 2008 Economic Review*, Government of the Federated States of Micronesia, Palikir.

Figure 2 Percentage of GDP attributable to amended compact



Source: Author's calculations.



compact expenditures, including expenditures from federal programs, from 2004 to 2008 were roughly US\$420 million. Using fiscal multipliers, calculated by state and year, Figure 2 displays the percentage of economic activity—from 2004 to 2008—directly attributable to the amended compact.³

While the amended compact's share of the economy varies from state to state, across the FSM it accounts for roughly 28 per cent of all economic activity. Accordingly, an economic assessment of the relationship between the amended compact and price levels, resource use, consumption and investment is vital to understanding the FSM economy. The nature and direction of those relationships, however, are unclear. Relatively little work has been done on assessing the impact of the 'shock' of the amended compact on the FSM economy.

The theoretical model used to understand the impact of the amended compact on the FSM economy is the dynamic general equilibrium model presented by Arellano et al. (2009). The neo-classical dynamic general equilibrium model is a standard tool for assessing the macroeconomy, which solves for all the standard features of the macroeconomy, production, consumption and investment, in terms of external impacts on the economy, such as productivity or income transfer shocks. The model presented in Arellano et al. is that of a small economy—like the FSM—with two productive sectors: tradable⁴ and non-tradable goods.⁵ The main innovation of the model is that in addition to income received from labour and capital rents, the economy also receives a stochastic transfer of aid, in the form of tradable goods, in each period. As amended compact funding has accounted for the lion's share of gross aid receipts from 2004 to 2008, examining the impact of the amended compact is a good means by which to assess the impact of the aid transfers to the FSM.⁶

The results of the Arellano et al. modelling suggest the amended compact has three important impacts on the FSM macroeconomy. First, the amended compact contributes to a form of Dutch Disease, which, as described above, means a decline in tradable production in the FSM economy. The supply of tradable goods is increased by foreign aid, which, *ceteris paribus*, lowers their price. At the same time, the income effect of the transfer increases the demand, and therefore the price, of non-tradable goods. As a result, resources are transferred from tradable to non-tradable sectors. This relative price change is described, in detail, in Rajan and Subramanian (Forthcoming). The second implication is that constant streams of aid, such as the amended compact, are reflected primarily in consumption—that is, 'permanent' increases (decreases) in aid lead to 'permanently' higher (lower) levels of consumption. The third implication is that as the proportion of aid relative to GDP increases, aid becomes an increasingly influential factor in the economy.

Summary statistics of the FSM macroeconomy largely support the model results described above. Consumption increased during the five-year amended compact, without any matching increase in production. Labour, which is assumed to be more mobile between tradable and non-tradable production, has largely shifted from the tradable sector to the non-tradable sector over the period of the amended compact. Private employment dropped by 2.5 per cent during the amended compact period. Employment in tradable goods industries—only 5 per cent of total employment in 2004—has fallen from 887 in that year to 372 in 2008, a drop of some 58 per cent, and accounted for just 2.5 per cent of the workforce in 2008. Even though the tradable sector employs just a fragment of the total labour force, these losses accounted for more than half the private sector job



losses during the amended compact period. During that same period, employment in the relatively low value-added, non-tradable retail industry rose from 3,085 to 3,205—an increase of nearly 4 per cent (Government of the Federated States of Micronesia 2009b). Thus, underneath the marginal decline in total employment is a substantial decline in tradable sector employment, with a shift of at least some of this labour to the non-tradable sector. These factor shifts have been mirrored by corresponding shifts in the earnings of the tradable and non-tradable sectors from 2004 to 2008 (Figure 3).⁷

During the same period, the relative price of non-tradable goods in terms of tradable goods has increased. While the consumer price index (CPI) adjusted price of tradable goods increased by 15.3 per cent over the period, the CPI-adjusted price of non-tradable goods increased by 23.7 per cent. As the official currency of the FSM is the US dollar, and the FSM's imports are mainly in dollars, the traditional Dutch Disease price effect of a real exchange rate appreciation is not in play here. Accordingly, differences in the relative domestic price levels of tradable and non-tradable goods act as the primary price mechanism for the Dutch Disease in the case of the FSM.⁸

Furthermore, consumption, as a percentage of GDP, remains high, averaging 88.6 per cent of GDP during the five-year period. Since the amended compact largely maintains the level of aid transfers of the initial compact, this high proportion of income devoted to consumption indicates that the impact of the amended compact is reflected through consumption. The importance of the amended compact to the FSM economy is further evidenced by the apparent 'insulation' of the FSM economy from global economic trends. The 2008–09 global economic downturn largely bypassed the FSM and this result could be attributed to the fact that the FSM economy

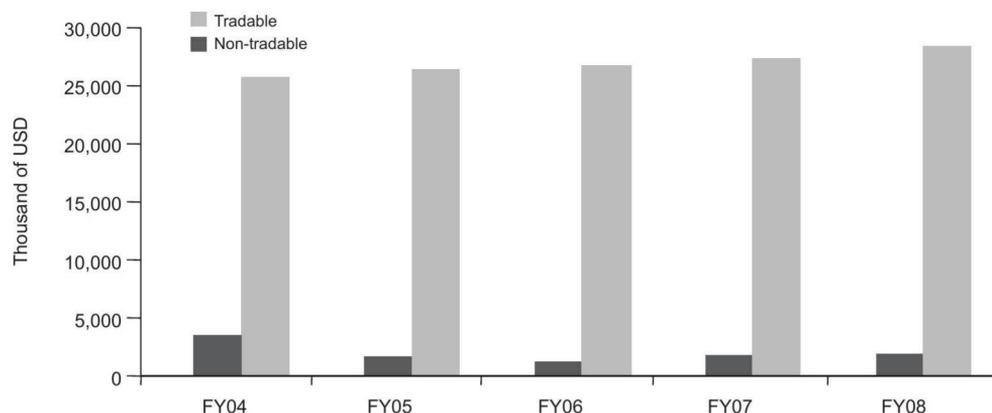
is not 'linked' to the global economy in any meaningful way, as aid represents such a large part of the FSM economy. While this shields the FSM from global downturns, it also inhibits the FSM from taking part in periods of global growth.

In order to examine the impact of the aid transfers on the macroeconomy, Arellano et al. (2009) calibrate their model using statistics from the Cote d'Ivoire economy. Cote d'Ivoire is described by the authors as an 'aid-dependent' country, with an aid-to-GDP ratio of 6.51 per cent. Other countries that are considered aid dependent have aid-to-GDP ratios that range anywhere from 0.8 to 37.5 per cent (Arellano et al. 2009; Rajan and Subramanian Forthcoming). In the FSM, the ratio is roughly 35.5 per cent. Based on the Cote d'Ivoire calibration, the authors conduct 'aid sensitivity analyses' that simulate a number of ratios of aid-to-GDP.

In order to further understand the impact of the amended compact on the FSM macroeconomy, I have calculated the economic ratios used in the Arellano et al. simulation and presented them alongside the simulated results (Table 2). While the work of Arellano, Bulir, Lane and Lipschitz simulates only economic ratios for an aid-to-GDP ratio of 20 per cent, the FSM's values are calculated at an aid-to-GDP ratio of 35.5 per cent. Matching these results with the simulated results produces a few interesting observations. First, when fitting a polynomial trend to the data in Table 2, the inclusion of the FSM's data points induces a third-order effect (Figure 4). In other words, as the aid-to-GDP ratio rises, the intensity of the Dutch Disease impacts appears to worsen. Taking note of the relative price of non-tradable goods, however, it appears that this third-order effect is not driven by a continuing appreciation in the relative price of non-tradable goods. In fact, the FSM's relative price of non-tradable goods—at an aid-to-GDP ratio of 35.5 per cent—is



Figure 3 Private sector earnings in the FSM



Sources: Author's calculations; Government of the Federated States of Micronesia, 2009b. *Fiscal Year 2008 Economic Review*, Government of the Federated States of Micronesia, Palikir.

Table 2 Aid sensitivity simulations and FSM's actual performance

	Aid as a percentage of GDP is equal to				
	0	10	15	20	35.5
<i>Means</i>					
Tradable output to GDP	44.52	37.01	33.03	28.79	1.67
Non-tradable output to GDP	55.48	62.99	66.97	71.21	98.33
Non-tradable to tradable output	1.246	1.702	2.028	2.473	58.88
Investment to GDP	13.37	12.71	12.12	11.42	8.49
Tradable consumption to GDP	31.15	34.43	36.02	37.59	55.29
Tradable to non-tradable labour	112.91	83.2	70.68	58.91	5.29
Relative price of non-tradable goods	40.3	45.06	48.13	51.99	51.77
<i>Correlations with aid</i>					
GDP	n.a.	0.29	0.48	0.66	0.73
Consumption	n.a.	0.43	0.59	0.71	0.68

n.a. not applicable

Sources: Author's calculations; Arellano, C., Bulir, A., Lane, T. and Lipschitz, L., 2009. 'The dynamic implication of foreign aid and its variability', *Journal of Development Economics*, 88:97–102; Government of the Federated States of Micronesia, 2009b. *Fiscal Year 2008 Economic Review*, Government of the Federated States of Micronesia, Palikir.



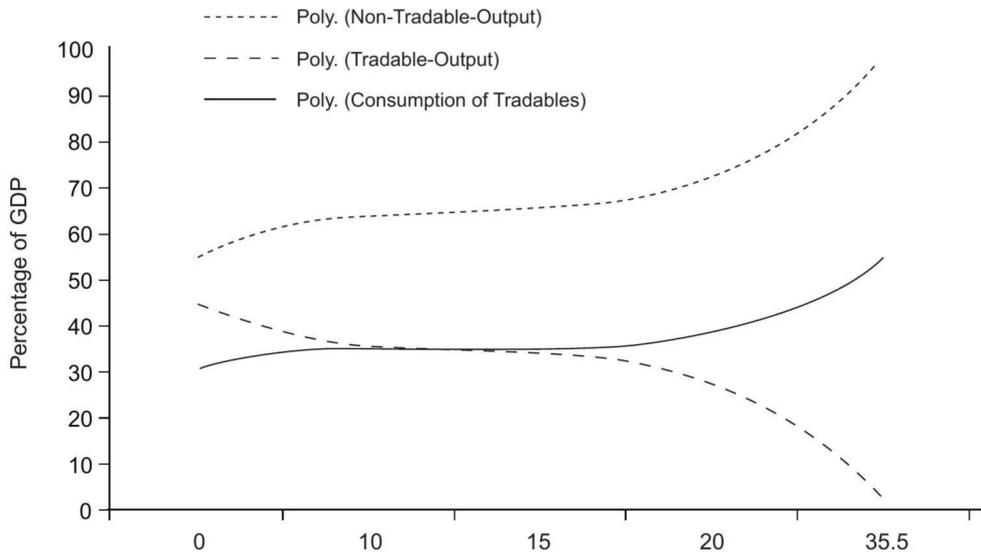
roughly that of the simulated relative price of non-tradable goods at an aid-to-GDP ratio of 20 per cent. This implies that something other than changing relative price drives the Dutch Disease at aid-to-GDP ratios of greater than 20 per cent.

This conclusion is corroborated by the fact that the correlation between consumption and aid decreases as the aid-to-GDP ratio increases from 20 to 35 per cent, even though, as a percentage of GDP, tradable consumption increased over the same interval. One plausible interpretation of this result is that at aid-to-GDP ratios in excess of 20 per cent the diminishing marginal return on consumption of non-tradable output has become severe enough to curtail further consumption of non-tradable goods. Thus, additional aid is used to fund consumption

of tradable goods, the prices of which are more or less fixed by world supply. The relative price of non-tradable goods does not decrease, however, due to the fact that absolute consumption of non-tradable goods does not diminish.

A second interpretation is that at aid-to-GDP ratios in excess of 20 per cent, domestic tradable production has been so thoroughly dismantled that there is no longer a sufficient base from which to respond to the levelling off in the terms of trade. In other words, just as tradable production can be fostered through *learning by doing*, it can be hobbled by *forgetting by not doing*. As a country shifts from tradable to non-tradable production, knowhow in the tradable sector is lost, exacerbating the shift. This effect, combined with the fact that productive

Figure 4 Tradable and non-tradable output to GDP



Source: Author's calculations; Arellano et al. 2009. 'The dynamic implication of foreign aid and its variability', *Journal of Development Economics*, 88:97-102; Government of the Federated States of Micronesia, 2009b. *Fiscal Year 2008 Economic Review*, Government of the Federated States of Micronesia, Palikir.



factors are still receiving high levels of rents in the non-tradable sector, ensures that there is not a shift back into tradable production, even when the relative price mechanism ceases to drive the Dutch Disease effects. Under either of these explanations, it appears that there could be a 'point of no return' for economies infected with severe Dutch Disease—a point past which the economy cannot correct itself, even if the cause of the Dutch Disease, the relative price mechanism, abates. An implication of this conclusion is that a non-market 'cure' might be needed for severe cases of Dutch Disease. Institutional changes could be necessary in order to ensure that amended compact funds are used to their full potential.

Thus, the main implication of the descriptive statistics and the simulated model results presented above is that aid has the tendency to be used to finance consumption, rather than investment or productive enterprise, and this tendency increases with the proportion of aid relative to GDP. Of the US\$420 million in amended compact funding between 2004 and 2008, approximately US\$230 million—or 55 per cent—went to finance household consumption.⁹ The bulk of the remainder of this compact funding was spent on non-domestic government procurement or contractual services. To the extent that the amended compact finances consumption, rather than investment or enterprise, it is unlikely to foster long-term, sustainable economic growth. This is due to the fact that investment, especially in tradable production, is a key driver of economic growth. Simply reducing amended compact funding levels will not, however, spur growth in the economy. Rather, such action would increase volatility and lead to significant welfare losses. This is due to the fact that amended compact funding has accounted for such a large proportion of both government revenue and household income streams, which are used to making

inter-temporal allocation decisions based on amended compact income.

Don't just treat the symptoms

As suggested above, the FSM economy is unlikely to change course on its own accord. The allocation of resources has been so grotesquely distorted by 20 years of massive aid inflows that it is unlikely they will rapidly adjust, even if relative prices swing back in favour of tradable goods. Treating the Dutch Disease by simply increasing transfers would boost economic performance but only by exacerbating current consumption patterns, while doing nothing to address the underlying structural issues. In order to take the FSM off 'economic life support', the FSM government, the United States and other international development partners need to make concerted efforts to improve infrastructure, institutions and investment.

In order to entice factors of production to move into tradable production, it is essential that the appropriate economic infrastructure is in place. Surveys of academic and policy literature show strong cross-country evidence that increased levels of infrastructure lead to economic growth (Briceno-Garmendia, Estache and Shafik 2004; Calderon and Servén 2004). Studies of sectoral infrastructure investment reveal that some sectors perform better than others. There is widespread evidence that telecommunications and transportation are the most fruitful sectors for infrastructure investment, as they tend to reduce transaction costs for firms and households, while service and welfare sectors contribute less to economic growth (Briceno-Garmendia, Estache and Shafik 2004). Based on previous empirical studies, using the remaining compact infrastructure grant to invest in telecommunications infrastructure could

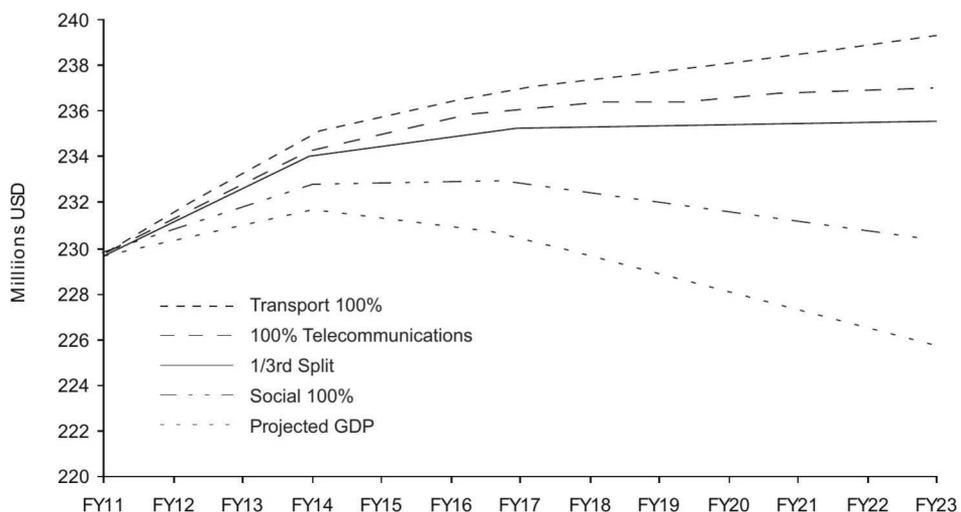


increase the annual GDP growth rate up to 2023 by 0.60 per cent. Investing these funds in transportation infrastructure could increase the annual GDP growth rate by 0.67 per cent, while the same investment in social infrastructure has the potential to increase annual GDP growth by 0.37 per cent.¹⁰ Simulated growth paths for each of these three investment options, as well as a ‘combined’ investment approach where infrastructure funding is allocated evenly across the three sectors, are presented (Figure 5).¹¹ These GDP projections do not take into account the fiscal boost from expending additional infrastructure funds; rather, they simply reflect changes in the underlying growth trends of the economy.

Figure 5 shows that any infrastructure investment, regardless of sector, will boost GDP growth rates vis-à-vis the current projected GDP path. Following a strategy of ‘market-expanding’ infrastructure—that is, telecommunications and transportation—

significantly outperforms a strategy that focuses solely on social infrastructure. The estimates in Figure 5 are conservative due to the fact that they draw on growth impact rates derived from Organisation for Economic Cooperation and Development (OECD) country infrastructure investment. There are decreasing returns to infrastructure investment and, as the FSM has relatively low levels of infrastructure stock, they are likely to benefit more from investment than OECD countries that already have more established infrastructure. Diminishing returns and cross-sector linkages, however, also suggest that it could be prudent to diversify infrastructure investment, and as such the ‘one-third split’ approach shows a growth path based on directing infrastructure investment equally between telecommunication, transportation and social projects. While this growth path is not quite as high as the ‘market-expanding’ infrastructure, it is an approach that is less

Figure 5 Real GDP projections via types of infrastructure spending



Source: Author’s calculations.



likely to run into diminishing returns on infrastructure investment.

Although not discussed above, the role of energy infrastructure is also shown to be important in the economic development literature (Ferguson, Wilkinson and Hill 2000; Toman and Jemelkova 2003). This is intuitively plausible as reliable energy sources are necessary for other forms of market-expanding infrastructure, such as telecommunications, as well as for the production and provision of most goods and services. Without energy, an economy cannot run. The immediate energy situation in the FSM ranges from serious to critical. Power generation in each state is operating either near or at capacity, often with equipment that is nearing the end of its serviceable life.

Quantifying the impact of energy infrastructure on growth is, however, quite difficult due to causality issues between energy and GDP. The two measures are highly correlated and there is a substantial body of literature that suggests a significant amount of the causality runs from energy to GDP, especially in developing countries (Obas 1996). In the absence of specific estimates, it is plausible to assume that the GDP impact of energy is at least of the magnitude of the telecommunications impact, as the former is a precondition for the latter. Accordingly, it is reasonable to include energy in the conceptualisation of 'market-expanding' infrastructure, and to recommend that it be considered in the 'two-thirds' share with telecommunications and transportation.

Funding for these projects is available as the amended compact mandates that at least 30 per cent—or roughly US\$22 million in constant 2004 dollars—of amended compact grant allocations be used to support infrastructure projects. Full expenditure of this funding during the first five years of the amended compact has been slowed by logistical and other obstacles. Of the

projects that have been approved, however, a disproportionate share has been social projects, such as schools and dispensaries. Any economic infrastructure projects that have been approved have largely been 'emergency' projects—stop-gap solutions to crucial transportation or energy needs. To date, there has been little systematic planning of economic infrastructure investment or financing. Putting in place reliable and appropriate roads, ports and communications and power networks is the first step in keeping the FSM economy from succumbing to Dutch Disease.

A second issue in combating Dutch Disease is the need for an appropriate institutional and regulatory environment. That economic institutions in the FSM are in need of reform is no secret; this has been chronicled by numerous think tanks and intergovernmental organisations, which have also proposed a number of institutional reform packages (ADB 1997, 2006; IMF 1998). Policy adjustments can often be politically costly, and institutional reform is compounded by the fact that the FSM is a loose federation of four strong states under a relatively weak central government. Jurisdiction over many of the most important economic policy issues—such as investment, land tenure and, to some extent, taxation—falls under the purview of the states. Leadership in some states has historically been resistant to broad institutional reform and these political processes remain obstacles today.

In light of the Dutch Disease effects of aid, however, the need to reform the FSM's economic institutions is all the more pressing. This is due to the fact that in the absence of a domestic tradable sector, the ability to attract the best practices from abroad—as described by Jones and Olken (2005)—is vital to building a competitive tradable goods sector. Unless the FSM wishes to reinvent the wheel, tradable production



knowhow will have to first come from abroad. Over time, this knowhow can be absorbed by domestic producers, but the production technologies, and to some extent capital, will initially have to be attracted from abroad.

The need to attract foreign capital, or foreign direct investment (FDI), highlights the third issue that must be redressed by the FSM and its development partners in order to overcome Dutch Disease. Over the past 20 years, Dutch Disease has created incentives for capital, such as labour, to shift from the tradable to the non-tradable sector. Unfortunately, systematic data on FDI and domestic capital flows are unavailable for the FSM. Discussions with people in the banking community, however, suggest that the bulk of commercial loans are used to finance retail or wholesale enterprises. This information coincides with the labour shift described above. It also points to the dire need for capital financing in the tradable sector in the FSM.

There are two means by which the FSM and development partners can remedy the lack of investment in the tradable sector. The first is through a liberalised FDI regime. This is very much a combination of the 'institutions' and 'investment' issues. Liberalising investment rules in the tradable goods sector, along with improved economic infrastructure, would attract increased FDI to the FSM and help it combat the Dutch Disease. Liberalising the FDI regime in non-tradable goods, however, and in particular retail, is not only politically inexpedient, in all likelihood it would only worsen the Dutch Disease in the FSM. As suggested above, the FSM is already saturated with retail and wholesale commercial enterprises. This sector is broadly competitive, in that none of the major retailers/wholesalers has a dominant market position. While inviting FDI into the retail sector could lead to some marginal reduction in consumer prices, it

would further encourage consumption and exacerbate the macroeconomic situation.¹² Thus, maintaining a restrictive FDI regime in retail and wholesale is not only a popular political move, it is also quite likely prudent economic policy.

A second strategy for increasing tradable goods production would be through recapitalisation and judicious use of the FSM Development Bank. This approach might be necessary because, as Hezel (2006:20) points out, there is no guarantee that 'even if all the reforms were scrupulously implemented' the foreign investors would appear. Accordingly, the FSM Development Bank could be fitted with a government mandate to finance viable, private operations in the tradable sector.¹³ Development partners could help the FSM by providing the necessary capital for the FSM Development Bank, or by identifying joint partners with technical skills, for such an effort. If Dutch Disease has perverted market forces from investing in the tradable sectors, the FSM Development Bank could fill this investment gap.

We can do better

The forgoing analysis suggests that the amended compact, as structured, has not and will not facilitate sustainable growth in the FSM. As has been noted often, the FSM—like many small island developing states—faces numerous economic challenges, including remoteness, scarcity of land, labour and capital, and limited natural resources. In the FSM, these challenges have been augmented by an aid regime that has financed consumption and distorted relative prices such that tradable production is practically non-existent. It appears that the situation in the FSM is so dire that the economy is beyond a point of 'self-correction' and that targeted intervention by FSM governments and international



development partners might be the only way to overcome these structural failings.

In contrast with Hezel's (2006) economic study of the FSM, however, our results suggest the FSM economy can indeed do better. Market actors trying to work against the economic incentives created by Dutch Disease are like a canoeist paddling against a strong current: you might struggle trying to make headway for a while but eventually you will become exhausted, turn the boat around and go with the flow. Regional neighbours such as Samoa and Vanuatu have been able to find ways past their inherent geographic and resource limitations to embark on periods of sustained economic growth. A similar performance is possible in the FSM. Overcoming Dutch Disease in the FSM is no easy task, but ways forward exist for policymakers who are willing to tackle the infirmity at its core.

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Notes

- ¹ For more discussion of MIRAB economies, see Bertram (2006) and Bertram and Watters (1985).
- ² For a discussion of Dutch Disease, see Bulir and Lane (2003); Michaely (1981). Dutch Disease, in the classical context, occurs when a country's national income rises swiftly as a result of newly exploited natural resources. In the traditional case, the income rise leads to a real exchange rate appreciation and an

increase in imports, which increases the relative price of non-tradables vis-a-vis tradables. This change in relative prices leads to a reallocation of resources from the tradable to the non-tradable sector, where the return is higher.

- ³ An IMF survey (Spilimbergo, Symansky and Schindler 2009) of the literature reveals estimates over a range from less than 1 to more than 4. This range suggests that estimating multipliers is as much an 'art' as a 'science', but also reflects the fact that fiscal multipliers are likely to be unique to particular economies. The observations behind the 'case study' multiplier assumption in the FSM are as follows: 1) the amended compact grants are a 'fiscal stimulus', are entirely externally financed and therefore do not impact on the current or future stream of tax revenues; 2) the grants do not 'crowd out' other government or consumer spending; 3) 20 per cent of non-wage government grant expenditure goes to direct procurement of domestic value added; 4) wages and salaries are taxed at 10 per cent; 5) 95 per cent of wages and salaries is consumed (Government of the Federated States of Micronesia 2007a); 6) 5 per cent of household income is invested; 7) the marginal propensity to import is 0.64 (author calculations from Government of the Federated States of Micronesia 2006, 2007a, 2009b); and 8) the government expends all taxes. These parameters were used to calibrate a Monte Carlo simulation that iterates the multiplier until it has been expended.
- ⁴ Where tradable goods and services are traditionally understood to be those that can be sold in a location that is distant from the point of production. For accounting purposes in this article, tradable goods include those in agriculture, hunting, fishing, forestry, mining, quarrying and manufacturing, while non-tradable goods constitute production in all other sectors.
- ⁵ For a full treatment of the model, see Arellano et al. (2009).
- ⁶ It should be noted that the treatment of amended compact funding as a stochastic—that is, random—aid transfer could potentially be seen as problematic since funding levels in the amended compact have been set by



statute. This concern is mitigated, however, by two factors. First, while the total amount of amended compact funding is allocated by statute, annual grant decisions are ultimately made by the Joint Economic Management Committee (JEMCO), which can be considered a stochastic process—at least from the FSM’s perspective. Second, treatment of aid transfers as stochastic in Arellano et al. (2009) is used mainly to assess the implications of aid variability—an implication that is less important to this report than the implications of levels of aid on consumption, investment and production.

⁷ As visible in Figure 3, the tradable sector is virtually non-existent in the FSM. Agriculture, fisheries and manufacturing are the main tradable industries. Manufacturing earnings fell precipitously from US\$2.4 million in 2004 to US\$540,000 in 2005 following the closure of a garment enterprise, and have not recovered. Tradable agricultural production has not totalled more than 0.3 per cent of total private sector earnings in any year from 2004 to 2008. While tradable fisheries earnings increased from US\$467,000 in 2004 to US\$703,000 in 2008, this figure still represents only 2.4 per cent of total private sector earnings in that year.

⁸ The author thanks an anonymous reviewer for highlighting this traditional component of Dutch Disease.

⁹ Using a consumption multiplier that assumes that 20 per cent of non-wage government expenditures went to households through domestic value-added government procurement of goods and services, and a marginal propensity to consume of 0.95 as calculated from Government of the Federated States of Micronesia (2007a).

¹⁰ Social infrastructure is defined by Briceno-Garmendia, Estache and Shafik (2004) as water and sanitation, but would also plausibly include other health and education infrastructure.

¹¹ These growth paths are based on 100,000 Monte Carlo simulations that are calibrated to the FSM from infrastructure growth impact estimates from Roller and Waverman (2001) and Briceno-Garmendia, Estache and Shafik (2004). The telecommunications growth

effect is calibrated using Roller and Waverman (2001) and an initial PEN of 14, which is based on the number of Internet users per 100 people in 2007 in the FSM, from the World Bank’s World Development Indicators database (<http://www.worldbank.org>). The estimates conservatively assume that with roughly US\$325 million in nominal telecommunications infrastructure investment over the remaining 13 years of the amended compact (2011–23), the FSM can obtain the OECD mean compounded annual growth rate (CAGR) of 3.96 of PEN growth, with a standard deviation of 2.65. These moments are then used to simulate 100,000 draws of the CAGR, which are used, a la Roller and Waverman (2001), to simulate 100,000 GDP growth paths using 2011 GDP projections as a base. These estimates are conservative as both the initial PEN level and the amount of infrastructure investment as a percentage of GDP would imply a larger CAGR. It is, however, undoubtedly more costly to expand telecommunication infrastructure in the FSM, which would imply a smaller CAGR. To obtain the transport and social infrastructure growth impact estimates, the telecommunications estimate is weighted given the information presented in Briceno-Garmendia, Estache and Shafik (2004). The same simulation procedure is followed to obtain the growth paths.

¹² As anyone who has recently lived in the FSM can attest to, although there are numerous retailers, price levels cannot broadly be described as competitive or even consistent. The same items often can be found at different prices at different establishments, although no establishment seems to have uniformly the most competitive prices.

¹³ To some extent, this has been the mandate of the FSM Development Bank. Historically, however, the bank has been subject to political interference, especially in regards to funds made available under the Investment Development Fund (IDF), much of which was directed to politically influenced state ‘sub-accounts’.



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