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Paradise Lost

The Costs of State Failure in the Pacific

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Abstract

Globally, state failure is hugely costly. We estimate the total cost of failing states at around US$276 billion per year. In this paper we apply our global framework and methodology to analyse the cost of failing states in the Pacific Ocean. Globally, failing states inflict very large costs on their neighbours and this both justifies and requires regional intervention in decision processes that would normally be the sovereign domain of nation states. Our analysis suggests that islands do not have neighbours in this economic sense. In this respect the Pacific region is distinctive, because its countries are islands, the neighbourhood spillovers that normally generate these costs do not apply. Due to the lack of spillovers we estimate the cost of state failure at US$36 billion. However, our results also indicate that failing states themselves suffer

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Keywords: Pacific islands, governance, costs, growth, civil war

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considerably more in terms of income losses if they are islands. This may be due to the greater openness of islands, implying greater flight of financial and human capital. We conclude that because neighbours are not directly affected by state failure in the Pacific, any possible interventions should be centred on the humanitarian concern rather than be guided by self-interest of the other countries within the Pacific region.

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1 Introduction

In this paper we estimate the costs of a 'failing state' and apply this concept specifically to the island states in the Pacific Ocean. This study draws closely on the results obtained in our companion paper on the cost of failing states globally (Chauvet, Collier and Hoeffler 2006). There we estimate the total cost of failing states at around US$276 billion per year.

States can 'fail' in two distinct senses. The most basic role of the state is to provide physical security to its citizens through maintaining a monopoly of organized violence within the society. Where the government fails to do this and rival organizations of violence emerge, the state descends into civil war. However, in the modern world the demands legitimately placed upon the state extend beyond this basic function of security. Governments in all modern societies play some role as regulators of private economic activity, and as suppliers of public goods such as transport infrastructure, health and education. The quality of regulation and public goods is important for the capacity of citizens to earn a living. Increasingly, as globalization makes economic activity more mobile between countries, the quality of government matters in a relative rather than an absolute sense: governments that are much worse than others are likely to lose economic activities and this will rebound upon their citizens. Hence, a state can fail because its government provides a quality of regulation and public goods which is markedly worse than that provided by other governments. Henceforth, we will refer to the provision of regulation and public goods by the shorthand term 'governance'.

Our paper is concerned with the costs of state failure. Evidently, the costs of failure arising from organized violence are likely to be different from the costs arising from a failure of governance. We measure each separately. In estimating the cost of failure to the countries of the Pacific there are two possible approaches. One, which is the route commonly taken by country specialists, is to focus on a few countries in detail. Our approach is radically different but complementary to this country-focused approach. We start from our global analysis, and investigate whether there are reasons to believe that the Pacific is distinctive from the global pattern. The major advantage of this approach is that because global analysis provides far more observations, we are able to use far more sophisticated and robust techniques for estimating the 'counterfactual': how societies would have evolved had they not 'failed'. The risk in the approach is that it might miss distinctiveness: reasons why global patterns do not apply in the Pacific. Part of our analysis is designed to do just this. Indeed, we find that in one very important respect the Pacific is distinctive, so that the costs of a failing state are considerably lower than implied by the global pattern.

Our approach is complementary to a country-focused approach but not an alternative to it. Comparative global statistical analysis necessarily omits much of importance that can only be understood by serious immersion into area-specific knowledge. Hence, the limitations of our analysis must be understood alongside its strengths.

Failing states generate many different types of costs. If there is large-scale organized violence, people are killed, people flee, people get sick as diseases spread, and the economy is damaged. Many of these costs are difficult to quantify and attempts to do so would consequently be contentious. Rather than make inevitably fragile estimates of the costs of incommensurable effects, we confine our analysis to the readily quantified costs of failure, focusing primarily upon the costs to the economy. These estimates are

therefore a lower bound to the true costs and should be understood as such rather than as a central estimate of all likely costs.

In this total cost estimate we distinguish three distinct costs of a failing state: the costs to citizens of such states of poor policy and governance, the costs to these citizens of civil war, and the cost of both these types of failure to neighbours. The largest component of the cost of failing states is the effects on their neighbours: 86 per cent of the total cost of failing states are costs which are inflicted on other countries. Around 12 per cent of the total cost is borne by the citizens of the failing state and the additional risk of civil war accounts for about 2 per cent of the total cost.

In this paper we turn our attention specifically to the island states of the Pacific. Out of the 11 Pacific islands on which we have some data, two have been categorized as failing for some years during 1977 until 2004.[1] In section 2 we discuss our definition of state failure, and in section 3 the implications of the composition of the costs generated by failing states for the sovereign powers of the government of the failing state, and hence the basis for external intervention. In section 4 we estimate the consequences of state failure for the economy of the failing state itself. First we summarize the global pattern and then investigate whether costs are likely to be distinctive in the islands of the Pacific. In section 5 we turn to the consequences for neighbours. Again, we start from the global pattern and then investigate whether the islands of the Pacific are different. In Section 6 we bring our analysis together, applying it to the costs of state failure among the islands of the Pacific. Section 7 concludes.

2 Defining a failing state

Our concepts of state 'failure', organized violence and bad governance, are continua. The scale of organized violence in a society can range from being a minor irritant, as in youth gangs in a city, to a devastating scourge, as with the Khmer Rouge in Cambodia; similarly, limitations in the quality of governance can range from occasional malfunctions in implementation to gross systematic deficiencies. However, it is often helpful analytically to impose thresholds that thereby create distinct categories of failing states: where the level of non-government organized violence exceeds some level, or where the quality of governance falls short of some level. We have done this globally, and we apply these same concepts to the Pacific.

For organized violence we use the standard definition of a civil war, which adopts a threshold of at least 100,000 combat-related deaths during a year. An advantage of using the standard definition is that we are then able to use datasets which have classified countries globally according to it.

Recall that by bad governance we mean that the provision of public goods is inadequate relative to the underlying capabilities of the society to pay for them, and that regulatory policies are dysfunctional. Economic policies and governance differ massively between countries. Poor policies and governance are themselves the consequence of other factors

[1] The 11 islands are: Fiji, the Federal States of Micronesia, Kiribati, the Marshall Islands, Palau, Papua New Guinea, the Solomon Islands, Tonga, Vanuatu and Samoa. The two islands which have been classified as failing are Papua New Guinea and the Solomon Islands.

such as particular configurations of interest groups. These deeper factors may reduce growth directly as well as via policies and governance. As a result, an apparent improvement that is divorced from underlying change may have only modest effects on growth. For example, interest groups may use other instruments to achieve their objectives and these may also be detrimental to growth. The poor policies and governance that define failing states should thus probably be regarded as the observable manifestations of a dysfunctional society. They can be thought of as lying on a continuum determined by their likely consequences for growth and poverty reduction. Potentially, a government fails if it adopts policies and governance that persistently fall below some low threshold and so inflicts slow growth or even absolute economic decline on its citizens. We adopt the World Bank criterion for low-income countries under stress (LICUS) as defining such a threshold (World Bank 2002) and combine it with a concept of *persistence* of such poor policies and governance. To meet our criterion of persistence a country must fall below the LICUS threshold for a continuous period of at least four years. This is designed to exclude from the category of failing states those that merely suffer a temporary crash. Analogously, we wish to retain in the category of failing states those that having been below the LICUS threshold temporarily or weakly improve policies and governance a little above the threshold. A country exits the category of failing state only if it achieves a decisive improvement, by which we mean sustaining a level of policies and governance clearly above the threshold for at least two years.

3 What are the limits to sovereignty?

In part a quantification of the costs of failing states is of interest because this is a necessary first step towards a cost-benefit analysis of remedies. However, the costs of a failing state also have a more fundamental significance. Although the term 'failing state' is sometimes used loosely, its distinctive meaning is that the government of such a state should not have the usual untrammelled rights of national sovereignty. The limits to government sovereignty come through two distinct types of argument. One, exemplified in the new United Nations concept of the *Responsibility to Protect*, is that beyond some point, if a government harms its own citizens this breaches international norms of acceptable standards and the international community has an obligation to intervene to arrest the harm. The other, exemplified in the international treaties on global public goods, such as *Kyoto*, is that a state does not have the right to harm the citizens of *other* countries. Thus, if failing states generate large costs for neighbours, this gives the neighbouring states some rights of intervention to curtail the harm. A failing state would, in this case, be a regional public bad, needing regional collective action to resolve it analogous, for example, to the regional water authorities that override national sovereignty where a river flows through several countries.

The implications for national sovereignty versus international and regional intervention thus rest, to an extent, on who bears the costs of a failing state. If the costs of failure are essentially borne by the citizens of the failing state, the basis for external intervention is a breach in international norms. Where this occurs the authorizing environment for intervention is, in some sense, the global community. The actual operation of intervention may be devolved from the international community to some regional actor but the latter is empowered by the international norms. In contrast, if the costs of failure are substantially borne by neighbours of a failing state, then the neighbours have a

direct right of intervention that does not rest on any actual or notional global authorization. By the principle of *subsidiarity*, regions have the prime responsibility for organizing the provision of their own regional public goods, and correspondingly for curtailing their own regional public bads. Hence, a critical issue for the Pacific region is who bears the costs of failure.

4 The costs of state failure to the citizens of failing states

We now estimate the costs of state failure to the citizens of failing states. Our approach is to quantify the loss to growth resulting from each of the types of state failure, and then to cumulate these losses over the period during which the state is failing. In Chauvet, Collier and Hoeffler (2006) we set out in detail how we estimate these costs. Here we provide a brief overview of our estimation results for the global sample before extending the analysis to the context of the Pacific islands.

Based on a comprehensive global sample of countries over the period 1974-2001 we estimate a standard growth regression and introduce into it a dummy variable for failing states. Because we wish to have a single regression that can be used for all the costs to be considered, we confine the present concept of failing states to those which are at peace, and introduce a second dummy for those which are also in civil war. We also include dummy variables for neighbourhood spillovers. These other dummy variables are discussed in subsequent sections. Our core regression is OLS. However, to check the robustness of the results we repeat the regression using GMM.[2] The results of both regressions are reported in Table 1. The GMM results coincide with those of the OLS: being a failing state at peace significantly reduces the growth rate by 2.6 per cent relative to being at peace with adequate policies and governance. The 90 per cent confidence interval around this estimate, which we can use to provide confidence intervals around our estimates of cost, is also shown in the Table. The last column of Table 1 also shows the results when using the World Development Indicators instead of the Penn World Tables data. This is because more islands are included in the sample when using the WDI dataset, which is thus used in the remaining of the paper.

Having arrived at the annual cost in terms of reduced growth, the remaining dimension of cost is likely persistence of these losses. Our criteria of persistence have excluded by definition both temporary crashes that swiftly rebound and temporary improvements that quickly collapse, but they do not necessarily imply that the phase of inadequate policies and governance is prolonged. Chauvet and Collier (2005) use a logit regression to estimate the probability that a failing state will achieve a decisive exit from the condition. A few characteristics make exit significantly less likely: a small population and a low incidence of secondary education. In effect, turnaround is made harder if there are in absolute terms few well-educated people in the society. Compared with other developing countries, the typical failing state indeed has both of the characteristics that predict persistence. The typical failing state has a population of only 15 million as compared with 42 million for elsewhere, and a far lower proportion of its population have completed secondary education: 3 per cent against 12 per cent for other developing

2 Chauvet, Collier and Hoeffler (2006) also provide some robustness checks on the specification. Including education, investment and democracy in regression (1) of Table 1 does not alter the results.

countries. At the mean of failing-state characteristics, the predicted annual probability of exit is a mere 1.7 per cent. In turn, this probability can be converted into the mathematical expectation of the duration of being a failing state: in effect, how long the typical failing state will remain in the condition. The expectation is 59 years. Hence, the typical low-income failing state will indeed experience a prolonged period in which policies and governance are inadequate and so a high incidence of poverty is likely to be prolonged.

We then combine the annual loss of growth with our estimate of the probability of a decisive turnaround from the condition, namely 1.7 per cent per year. For example, if a

Table 1
Growth effect of failing states, 1974-2001

	OLS			SYS-GMM	OLS
	PWT			PWT	WDI
	(1)	90% confidence interval		(2)	(3)
Income per capita, t-4	-0.008 (3.50)***	-0.012	-0.005	-0.005 (1.08)	-0.008 (4.61)***
Dummy non-failing states countries at war	-0.013 (3.02)***	-0.021	-0.006	-0.008 (0.83)	-0.013 (2.14)**
Dummy failing states at war	-0.042 (4.87)***	-0.056	-0.028	-0.033 (2.56)**	-0.051 (4.06)***
Dummy failing states at peace	-0.026 (6.96)***	-0.032	-0.020	-0.024 (3.64)***	-0.022 (6.22)***
Proportion of neighbours being FS at war	-0.018 (2.20)**	-0.032	-0.005	-0.062 (3.09)***	-0.016 (1.88)*
Proportion of neighbours being FS at peace	-0.018 (3.70)***	-0.026	-0.010	-0.021 (1.94)*	-0.021 (4.61)***
Constant	0.105 (4.89)***	0.070	0.140	0.077 (2.22)**	0.090 (6.26)***
Observations	600			600	664
R-squared	0.17				0.14
Number of countries	105			105	118
Number of FS	45				49
Number of islands	19				25
Number of FS islands	5				6
Number of Pacific islands	2				6
Number of FS Pacific islands	1				2
Hansen test of over-identification (p-value)				0.79	
Number of instruments				116	
AR(1) (p-value)				0.001	
AR(2) (p-value)				0.507	

Note: Regression (1) and (3) are estimated with OLS. Regression (2) is estimated with System-GMM (Blundell and Bond 1998). All right-hand side variables are instrumented. Robust t statistics in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. Dependent variable: Growth rate of real income per capita, Penn World Tables 6.1. In regression (1) and (2) and World Bank (WDI) in regression (3). All regressions include time dummies.

Table 2
Cost of failing states

	NPV as a proportion of initial income that is lost due to failure (in %)	NPV of loss for typical FS/typical neighbour, in terms of the average GDP of FS at peace (US$5.5 bn)/ neighbour of FS (US$39.7 bn) (in billion dollars)	NPV of losses of all neighbours of typical FS (n=3.5) (in billion dollars)	NPV of losses generated by global total of FS (N=23) (in billion dollars)
Failing state				
Growth loss=-0.026	506	27.8		640 (a)
Growth loss=-0.032	585	32.2		740
Growth loss=-0.020	416	22.9		526
Violence				
Growth loss	64.4			70
DALYs				74
Total loss				144 (b)
Neighbours				
Growth loss=-0.006 (1)	148	59	206	4732 (c)
Growth loss=-0.009 (2)	206	82	287	6598
Growth loss=-0.003 (2)	86	34	119	2727
Total NPV (a) + (b) + (c)				5516
Cost per year				276

Note: Shaded: calculations using the 90% confidence interval results of Table 1.

(1) Coefficients given in table 1 (0.018) multiplied by the average proportion of neighbours that are failing states (0.33).

(2) Calculated from the confidence interval for the proportion of neighbours that are FS at peace (0.026*0.33 and 0.010*0.33).

failing state is very fortunate, in the first year it will lose 2.6 per cent of GDP relative to the counterfactual of adequate policies whereupon it will achieve a decisive turnaround. The ultimate costs of having been a failing state then depend upon what is assumed about post-turnaround recovery. At one extreme, growth post-turnaround is merely the same as if the country had always had adequate policies. In this case the loss is perpetual: every year in the future the country is 2.6 per cent worse off than if it had not had the phase of inadequate policies and governance. We adopt the more hopeful, and probably more reasonable, assumption that during the recovery phase growth is unusually rapid: the economy recovers to where it would have been without the failing-state phase, and the recovery takes as many years as that phase has lasted. The cost of having been a failing state is then the loss of GDP in each year until the economy attains the level it would have reached had it not been a failing state, discounted to the present. We adopt a discount rate of 5 per cent. We allow for the possibility of turnaround in each year, weighted by the probability that a turnaround will occur in that year, and sum across all of these possible paths of development. This generates the mathematic expectation of the discounted present value of the cost of being a failing state, viewed from the first year in which the country enters the condition. Appendix 1 presents in detail the calculation of the cost. Our central estimate of the costs of the typical failing state at peace is about five times of their average GDP, with the 90 per cent confidence interval from the growth regression giving a range of 4.2 to 5.8 times their GDP. Table 2 summarizes these results.

We now investigate whether the Pacific conforms to this global pattern. There are two ways in which a region might be distinctive from the global pattern, which we might think of as cultural and structural. A cultural account of distinctiveness would be that because of certain culturally-specific features of the Pacific, the consequences of civil war or bad governance would be different from elsewhere. A structural account of distinctiveness would be that because the economies of the Pacific had important structural differences from the global norm, the consequences would be different. In principle it is possible to test for each of these statistically. Unfortunately, in the case of the Pacific it is not possible to check for the cultural account of difference. This is because there are too few failing states in the region to rely upon the statistical approach. It is therefore better for regional specialists to apply their judgment to this issue. However, typically, culturally-specific explanations turn out to have much less force than might be imagined. For example, because Africa has many states, many of which are failing, it is possible to test for cultural specificity using the statistical approach. For Africa, cultural specificity can generally be rejected once structural specificity is properly included. Obviously, it does not follow that because the cultural distinctiveness of Africa does not matter for the estimation of the cost of failing states that the cultural distinctiveness of the Pacific does not matter. However, it does suggest that any such argument needs to be well-grounded in evidence.

It is far easier to incorporate structural as opposed to cultural distinctiveness in our statistical analysis. This is because, although all Pacific countries may have a particular structural characteristic that is less common elsewhere, they will not be the only countries that have this characteristic. The structural question is not whether Pacific islands are distinctive, but rather whether countries with this characteristic are distinctive, in which case the Pacific will be distinctive from the global average.

One structural characteristic of Pacific countries that may have important consequences for the costs of being a failing state is that Pacific countries are islands. The cost of

failure might be higher than average in small islands because they are atypically highly exposed to the global economy. In effect, far from being atypically isolated, small islands might be atypically integrated into global or regional markets. In particular, both capital and labour are likely to be highly mobile internationally in small islands. Such factor mobility would tend to increase the cost of bad governance because of the amplified exit that it entailed. Whether this is correct is entirely an empirical matter. To test it we create a dummy variable for countries that are islands and investigate whether its interaction with our dummy variable of failing states is significant in the growth regression. To avoid confusion with any direct effect of being an island on growth performance, we also include the island dummy directly in the regression. We report this in Table 3, column 1. The interaction term is significant and negative: island failing states suffer substantially larger losses than do other failing states, around an additional 2.1 per cent reduction in the growth rate.

Table 3
Growth effect of islands

OLS estimations	(1)	(2)	(3)	(4)
Income per capita, t-4	-0.009 (5.16)***	-0.009 (5.17)***	-0.009 (5.08)***	-0.010 (5.14)***
Dummy non-failing states countries at war	-0.011 (1.83)*	-0.011 (1.87)*	-0.011 (1.89)*	-0.011 (1.89)*
Dummy failing states at war [1]	-0.049 (3.89)***	-0.049 (3.86)***	-0.049 (3.85)***	-0.048 (3.82)***
Dummy failing states at peace [1]	-0.018 (4.98)***	-0.019 (5.06)***	-0.018 (4.95)***	-0.018 (4.90)***
Proportion of neighbours being FS at war (excl. islands) [2]	-0.015 (1.76)*			
Proportion of neighbours being FS at peace (excl. islands) [2]	-0.023 (4.92)***			
Dummy island	0.011 (2.78)***	0.011 (2.74)***	0.012 (3.15)***	0.008 (1.84)*
Dummy FS island	-0.021 (2.70)***	-0.021 (2.67)***	-0.021 (2.70)***	-0.021 (2.72)***
Proportion of neighbours being FS (excl. islands)		-0.021 (4.68)***		
Proportion of neighbours being FS (incl. islands)			-0.021 (4.35)***	-0.023 (4.49)***
Proportion of neighbours being FS islands				0.023 (1.65)*
Constant	0.096 (6.65)***	0.096 (6.67)***	0.095 (6.57)***	0.097 (6.61)***
Observations	664	664	664	664
R-squared	0.15	0.15	0.15	0.15
(1) probability that the two coefficient are equal	0.01			
(2) probability that the two coefficient are equal	0.35			

Note: All regressions include time dummies. Robust t statistics in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. Dependent variable: Growth rate of real income per capita World Bank (2004).

Before accepting this result we need to consider alternative explanations. One possibility is that it is due to a compositional effect: islands happen to suffer disproportionately from the more costly form of failure, namely organized violence. In fact, the opposite is the case, so this is not the explanation. There seems some basis for accepting that state failure in islands inflicts considerably larger costs on citizens than is the case elsewhere in the world. At the least, it seems reasonable to conclude that the global cost is a lower bound to the cost for islands.

If islands indeed suffer larger growth losses from bad governance, then the present value of the costs is larger than the global estimate of five times annual GDP. The total loss of growth of a failing *island* state is 0.39 per cent- adding the 2.1 per cent to the 1.8 per cent of growth a typical failing state at peace loses. Cumulating over years and discounted, this leads to a loss of 6.7 times the initial GDP. The 90 per cent confidence interval from the growth regression gives a range of 4.2 to 8.4 times the initial GDP.

5 The costs of state failure to neighbours

We now turn to the second cost, namely that inflicted on neighbours. Neighbours suffer a variety of costs from failing states, but here we concentrate upon the economic losses.

Globally, growth spills over onto neighbours. We now again investigate whether the Pacific conforms to this global pattern. As previously, the possible basis for exceptionalism is either cultural or structural. Again we cannot test for the cultural explanation, but we can test for the structural. We therefore turn to the structurally specific aspects of the Pacific. In what respects, if any, are the countries of the Pacific region likely to be structurally distinctive in a way that affects the spillover costs to neighbours? Again, the same characteristic stands out: the countries of the Pacific are islands, whereas most countries elsewhere are part of large landmasses. However, the reason why being an island might generate distinctive spillover effects is quite different from the reason why it might generate distinctive costs to citizens. The key issue is whether islands have neighbours. In a discussion with one of the authors on the subject of possible neighbourhood effects, the President of Madagascar clearly stated his view: ‘our neighbours are the fish!’ This is, in effect, the proposition to be tested.

Spillovers might arise through several different routes. For example, compare spillovers arising from trade between neighbours and spillovers arising from the reputation of the neighbourhood. Trade between neighbours is likely to be much less important for neighbours if they are islands than if they are spatially contiguous. Neighbouring islands are too similar to generate much trade with each other, and trade is limited by transport costs. Most of the costs of sea transport are end-costs: the costs of loading and unloading. Hence, being proximate to another country by sea connection is of very little advantage in trade. By contrast, the costs of land transport are both much larger and more closely related to distance: hence proximity matters. If, however, the key spillover is through the reputation of the neighbourhood with investors, then physical contiguity may be unimportant. Pacific islands might be viewed as a group and investor risks and opportunities to an extent assessed collectively, so that reputation becomes a regional public good.

To test for whether island neighbourhoods are distinctive, we first had to create the empirical concept of an island neighbourhood. We did this by recoding islands from having no neighbours, which is how they are conventionally treated, to being part of neighbourhoods within which each island was deemed to be a neighbour of every other island in the same region. Thus, in the case of the West Indies each island was treated as being in the 'West Indies island neighbourhood', and contiguous to every other member of this neighbourhood. We undertook such a coding globally, for each likely group of islands, including of course the Pacific islands. The resulting coding produced five groups of 'island neighbourhoods', with an average of seven islands in each group. This classification is reported in Appendix 2.

Having constructed these island neighbourhoods we then tested to see whether being the neighbour of other islands had similar effects to being a neighbour in the more conventionally defined sense of a contiguous land border. For this, we first pooled all the island neighbourhoods into the global data, thus reclassifying islands as having neighbours instead of being isolated. Because the joint significance test of the coefficients of neighbours at war and at peace suggests that the two coefficients are not significantly different (last row of Table 3), we aggregate neighbours at peace and at war into one variable: in column 2 the neighbour variable excludes islands while in column 3 it includes islands. Then we introduced a dummy for being an island and interacted it with the dummy for being the neighbour of a failing state (Table 3, column 4). As previously, we controlled for the direct effects of being an island and a failing island state. Indeed, these effects were investigated as part of the same regression as that previously reported.

The interaction of the island dummy with the dummy for being the neighbour of a failing state is significant and positive. Indeed, the coefficient is virtually identical, though with opposite sign, to that on being the neighbour of a failing state, a category which now includes the islands. These results are telling us that the President of Madagascar is correct: islands do not have neighbours in the sense of regional spillover costs to growth from being a failing state.

In Appendix 3, we present robustness checks on the specification. Education, investment and democracy are introduced as additional control variables. As discussed in Chauvet, Collier and Hoeffler (2006), policy and institution variables are subsumed in the dummy for failing states. Except in regression (2), the results seem robust to the inclusion of these control variables. In regression (2) primary education induces a loss of significance of the island and failing island state dummies. However, the sample is reduced by 179 observations, out of which a third are island countries and 17 are failing island states. Regression (3) tests whether the loss of significance is due to the inclusion of primary education, or to the reduction in sample. It is estimated on the same sample as regression (2), but without the education variable. As in regression (2) both dummies lose significance, and indeed the coefficients are virtually identical to those in regression (2), suggesting that the differences from the other four regressions are due to the reduction in the sample size rather than to the change of specification.

An immediate implication is that the costs of a failing state in an island neighbourhood are essentially due to those costs that are borne by citizens of the failing state itself. Going back to our analysis of sovereignty, this implies that the basis for international action in failing island states is closer to the *responsibility to protect* than to the right to curtail regional public bads. In consequence, the rights of regional actors seem likely to

flow more from devolved authority from global concerns about the breach of basic norms rather than directly from the right to protect one's own citizens from spillovers.

6 The costs of state failure in the Pacific

The cost of state failure in the Pacific can now be built up from the incidence of state failure in the region and the cost per failing country. We take these in turn.

6.1 The incidence of state failure in the Pacific

State failure has two manifestations, bad governance, and the collapse into internal violence.

The incidence of bad governance in the Pacific islands is 19 per cent. This is identical to the global incidence of bad governance among low-income countries. By contrast, among the 11 smaller Pacific islands there has been no situation that meets the standard international criteria for a civil war. However, Timor-Leste has had a long history of sustained violence with very high mortality, so the neighbourhood has clearly not been immune from violent conflict. The low incidence of civil war may be due to something specially favourable about the neighbourhood, or it may be structural: globally, countries with the structural characteristics of the Pacific islands may not experience civil war. To test for this, we investigate whether islands generally have a lower incidence of civil war than other countries. We use a new global model of civil war risk and introduce a dummy variable for those countries that are islands (Collier, Hoeffler and Rohner 2006). We present their core model in Table 4, column 1. The risk of a civil war breaking out is greater if a country has certain characteristics such as low income, low growth, a high share of primary commodity exports in GDP. About 27 per cent of all countries are islands, however only 5 per cent of all wars took place in island states. This simple descriptive statistic could be an indicator that islands are less likely to experience civil war because they are islands, or it might reflect other characteristics such as a small population. The definition of civil war includes a minimum of 1,000 battle-related deaths per year and as a consequence of this absolute threshold criterion countries with small populations are less likely to experience civil war. This is evident from our risk of civil war regression where the coefficient on the logarithm of population is positive and significant at the 1 per cent level. Island states are much smaller than other countries, their population is on average 0.46 million whereas other countries have an average population of 23 million.[3] In order to examine statistically whether islands have a different risk of civil war we introduce a dummy variable for islands in the second column. The coefficient on the dummy variable is not statistically significant, in other words island countries do not have a different risk of experiencing a civil war. Thus, although the low incidence of civil war in the neighbourhood indeed appears most likely to be structural, it is not because they are islands but because they are small. Small societies seldom generate the scale of violence that exceeds the threshold definition of civil war even though they may suffer more modest levels of violence. The atypically high prevalence of resort to violence in Timor-Leste is also

3 These descriptive statistics are based on Collier, Hoeffler and Rohner (2006).

consistent with an important feature of the global pattern: the conflict trap. Once a society has experienced violent conflict it is considerably more prone to further bouts of violence, partly due to the legacy of guns and organizations, and perhaps also due to the examples set by past experience.

Table 4
Risk of civil war

	(1)	(2)
Economy		
lnGDP per capita	-0.203 (1.63)*	-0.201 (1.62)*
GDP per capita growth (t-1)	-0.145 (3.70)***	-0.139 (3.51)***
Primary commodity exports (PCE)	7.133 (1.84)*	7.556 (1.93)*
PCE squared	-14.058 (1.82)*	-14.785 (1.89)*
History		
Peace	-0.057 (5.96)***	-0.057 (5.92)***
Former French African colony	-1.020 (1.74)*	-1.063 (1.80)*
Social characteristics		
Social fractionalization	2.323 (2.88)***	2.296 (2.86)***
Proportion of young men	17.423 (1.67)*	18.211 (1.77)*
lnpopulation	0.284 (2.93)***	0.274 (2.75)***
Geography		
Mountainous	0.015 (1.94)*	0.014 (1.83)*
Islands		-0.506 (0.99)
Observations	1063	1063
Pseudo R^2	0.28	0.28
Log Likelihood	-187.58	-187.04

Note: Logit regressions, dependent variable: war start. Absolute value of z statistics in parentheses. Asterisks (*, **, ***) indicate significance at the 10%, 5% and 1% level, respectively. Both regressions include an intercept (not reported). For further details see Collier, Hoeffler and Rohner (2006).

6.2 The total cost of state failure in the Pacific

Finally, we turn to the calculation of the cost of failure in Pacific islands. Recall that the cost of failure in fragile island states is essentially due to the costs that are borne by citizens of the failing island itself, since the loss of growth due to neighbours is nil. On average, the loss of growth due to failure in islands implies a loss of 6.7 times the initial GDP.

In our sample, two Pacific islands enter into the fragile state category: Papua New Guinea and the Solomon Islands. With a population of 4.3 million people in 1998-2004, Papua New Guinea is more than 10 times bigger than the Solomon Islands (378,000). So is its average GDP, as shown in Table 5. Thus the total cost of failure in Papua New Guinea amounts to US$33.5 billion—US$1.7 billion per year—while that of Solomon Islands amounts to US$2.2 billion—US$0.1 billion per year.

The value of turning round these two fragile states would thus be of the order of US$36 billion, expressed as a present value.

Table 5
The cost of failure in Pacific islands

	Population (in mn) 1998-2004	GDP (in bn US$) 1998-2004	Proportion of income that is lost due to failure		Cost of failure (in bn US$)	
Papua New Guinea	4.3	5	6.7	[4.2, 8.4]	33.5	[21, 42]
Solomon Islands	0.38	0.32	6.7	4.2, 8.4]	2.2	[1.3, 2.7]
Total cost					35.7	[22.3, 44.7]

7 Conclusion

Globally, state failure is hugely costly and so warrants serious attention. The policy instruments appropriate for addressing state failure are beyond the scope of this paper, but are likely to include security, governance and trade policies as well as aid. We have attempted to apply our global framework and methodology to the specific context of the Pacific. This approach has both strengths and weaknesses which it is important to recognize. Our approach necessarily lacks the richness of detail provided by the case-study method. It is best seen as a supplement and complement to such an approach rather than a rival. However, we have attempted to discover in what ways the Pacific is distinctive from the global pattern as well as the ways in which it conforms to it.

Globally, failing states inflict very large costs on their neighbours and this both justifies and requires regional intervention in decision processes that would normally be the sovereign domain of nation states. One respect in which the Pacific is distinctive is that, because its countries are islands, the neighbourhood spillovers that normally generate these costs do not apply. As far as we can discern, islands do not have neighbours in this economic sense. Hence, the basis for regional concern is somewhat reduced, and indeed shifted from the self-interest of other states to their humanitarian concern with the wellbeing of the directly affected populations. The second respect in which the Pacific is distinctive reinforces this latter conclusion. Although neighbours are not affected by state failure, the failing states themselves suffer considerably more in terms of income losses if they are islands. We have speculated that this may be because of the greater

openness of islands, implying greater flight of capital and skilled labour. Hence, the humanitarian case is particularly strong.

Finally, we have attempted to put a cost on state failure in the Pacific. This is evidently a heroic undertaking and the results should be treated with due caution. Nevertheless, our estimate of a present value of around US$36 billion is so large that the implication is clear: state failure in the Pacific should be a major policy concern.

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Appendix 1: Calculation of the cost of being a failing state

The following is discussed in more detail in Chauvet and Collier (2005). Let g be the annual growth rate and r the discount rate. If a country starts out as a failing state from an initial GDP of 1, its GDP at the end of year one will be $[1 - (1 - g)]$. If this country has a turnaround at the end of year one, then it will recover its initial level of GDP during the second year, meanwhile losing again $(1 - g)$ of its initial GDP. Thus, the loss of GDP if a turnaround occurs at the end of year 1 is:

$$t = 1 : C(1) = \frac{1-(1-g)}{r} + \frac{1-(1-g)}{r^2} = \frac{g}{r} + \frac{g}{r^2} = g\left(\frac{1}{r} + \frac{1}{r^2}\right).$$

If, instead of having a turnaround in year one, the country has a turnaround in year 2, then it will lose $[1 - (1 - g)]$ in year one and $[1 - (1 - g)^2]$ in year 2. If the turnaround occurs at the end of year two, the country will start to recover, but meanwhile continues to lose $[1 - (1 - g)^2]$ in year 3 and $[1 - (1 - g)]$ in year 4. The loss of GDP if a turnaround occurs at the end of year 2 is:

$$t = 2 : C(2) = \frac{1-(1-g)}{r} + \frac{1-(1-g)^2}{r^2} + \frac{1-(1-g)^2}{r^3} + \frac{1-(1-g)}{r^4}$$

$$= \frac{g}{r} + \frac{1-(1-g)^2}{r^2} + \frac{1-(1-g)^2}{r^3} + \frac{g}{r^4}$$

$$= g\left(\frac{1}{r} + \frac{1}{r^4}\right) + \left(\frac{1}{r^2} + \frac{1}{r^3}\right) - (1-g)^2\left(\frac{1}{r^2} + \frac{1}{r^3}\right).$$

The same reasoning applies for year 3:

$$t = 3 : C(3) = \frac{g}{r} + \frac{1-(1-g)^2}{r^2} + \frac{1-(1-g)^3}{r^3} + \frac{1-(1-g)^3}{r^4} + \frac{1-(1-g)^2}{r^5} + \frac{g}{r^6}$$

$$= g\left(\frac{1}{r} + \frac{1}{r^6}\right) + \left(\frac{1}{r^2} + \frac{1}{r^3} + \frac{1}{r^4} + \frac{1}{r^5}\right) - (1-g)^2\left(\frac{1}{r^2} + \frac{1}{r^5}\right) - (1-g)^3\left(\frac{1}{r^3} + \frac{1}{r^4}\right)$$

We end up with the following general formula for the loss of GDP if a turnaround occurs at the end of year t :

$$C(t) = g\left(\frac{1}{r} + \frac{1}{r^{2t}}\right) + \sum_{k=2}^{k=2t-1} \frac{1}{r^k} - \sum_{k=2}^{k=t} (1-g)^k \left(\frac{1}{r^k} + \frac{1}{r^{2t-k+1}}\right).$$

So taking into account the probability that each of these scenarios will occur, we end up with the following total cost from being a failing state:

Total loss from being a failing state = $\sum_t p(t).C(t)$,

where $p(t)$ is the probability of turnaround in year t: $P(X=t) = p(t) = (1 - a)^{t-1}\, a$.

Appendix 2

Country name	Pacific	Caribbean	East Africa	South Europe	Asia
Fiji	1				
Kiribati	1				
Marshall Islands	1				
Micronesia, Fed. Sts.	1				
Palau	1				
Papua New Guinea	1				
Samoa	1				
Solomon Islands	1				
Timor-Leste	1				
Tonga	1				
Vanuatu	1				
Antigua and Barbuda		1			
Bahamas, The		1			
Barbados		1			
Cuba		1			
Dominica		1			
Dominican Republic		1			
Grenada		1			
Haiti		1			
Jamaica		1			
St Kitts and Nevis		1			
St Lucia		1			
St Vincent and the Grenadines		1			
Trinidad and Tobago		1			
Comoros			1		
Madagascar			1		
Mauritius			1		
Seychelles			1		
Cyprus				1	
Malta				1	
Maldives					1
Singapore					1
Sri Lanka					1

Appendix 3
Specification tests on regression (4) of Table 3

	(1)	(2)	(3)	(4)	(5)
Income per capita, t-4	-0.010 (5.14)***	-0.011 (4.33)***	-0.010 (4.63)***	-0.012 (6.33)***	-0.009 (4.76)***
Dummy non-failing states countries at war	-0.011 (1.89)*	-0.014 (2.69)***	-0.014 (2.73)***	-0.008 (1.39)	-0.014 (2.81)***
Dummy failing states at war	-0.048 (3.82)***	-0.051 (3.08)***	-0.051 (3.07)***	-0.043 (3.41)***	-0.035 (3.65)***
Dummy failing states at peace	-0.018 (4.90)***	-0.021 (4.97)***	-0.021 (5.07)***	-0.016 (4.47)***	-0.018 (4.77)***
Dummy island	0.008 (1.84)*	0.003 (0.54)	0.004 (0.63)	0.008 (1.77)*	0.005 (0.81)
Dummy FS island	-0.021 (2.72)***	-0.007 (0.62)	-0.008 (0.70)	-0.014 (1.79)*	-0.018 (2.20)**
Proportion of neighbours being FS (incl. islands)	-0.023 (4.49)***	-0.021 (4.02)***	-0.022 (4.11)***	-0.014 (2.74)***	-0.019 (3.75)***
Proportion of neighbours being FS islands	0.023 (1.65)*	0.040 (2.30)**	0.040 (2.33)**	0.031 (2.39)**	0.014 (0.65)
Primary education		0.0001 (0.58)			
Investment rate				0.002 (8.10)***	
Democracy					0.001 (1.23)
Constant	0.097 (6.61)***	0.106 (6.21)***	0.106 (6.19)***	0.085 (6.29)***	0.094 (6.27)***
Observations	664	485	485	661	594
R-squared	0.15	0.17	0.17	0.22	0.15

Note: All regressions include time dummies. OLS estimations. Robust t statistics in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. Dependent variable: Growth rate of real income per capita, World Bank (2004).