Export performance, governance, and economic growth: evidence from Fiji - a small and vulnerable economy

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Abstract: This article analyses the nexus between exports, established indicators of governance, and economic growth in Fiji. It finds that exports and governance co-operate to promote economic growth. The interplay between these variables is also meaningful. The findings imply that Fiji needs to improve export productivity and quality of institutional governance to ensure persistent rates of economic growth. Other variables such as human capital, private investment, foreign aid, and policy environment are also growth-enhancing in this small and vulnerable economy.

Subjects: Statistics for Business, Finance & Economics; Economics and Development; Economic Theory & Philosophy

Keywords: governance, export performance; governance index; economic growth; small and vulnerable economies; Fiji

Jel classification: A12; B13; B22; B40

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PUBLIC INTEREST STATEMENT

In view of global uncertainties and pessimistic economic outlook around the globe, there is an urgent need to revisit the economic challenges faced by small and vulnerable economies (hereafter SVEs) particularly in the south pacific region. There is no one size fit economic growth model. The economic growth strategies are better understood in country specific context. The economic growth in SVEs often suffer from capacity constraints and quality of governance.

This article promotes an idea that export productivity coupled with good governance is a possible way to sustain decent rates of economic growth in SVEs. Using Total Factor Productivity Analysis, the economic growth is made to depend on growth rates of exports, composite governance indicator and other plausible determinants. The econometric results of our findings have supported the hypothesis of this paper. The research has potential to expand for other smaller economies in the region.
1. Introduction
With world trade being continually affected by the US-China trade, geopolitical tensions, and other compounding uncertainties (including COVID-19), economic activity and incomes have declined rapidly in most countries (Asian Development Bank, 2020; The World Bank, 2019). The resulting contagion effects are depressing because countries have just recovered from the 2008/9 global financial crisis. To support recovery in the last crisis, Keynesian economic policies were implemented, which, however, did not focus on enhancing productive capacity (International Monetary Fund, 2014; Jahan et al., 2014). Consequently, government-funded austerity measures have caused fiscal stress in many countries (The United Nations, 2012) and these have translated into severe economic burdens, especially in the Small and Vulnerable Economies (SVEs)\(^1\). On the contrary, the withdrawal of such initiatives is upsetting the local political-will, investment climate, and economic activity (The United Nations, 2019). The International Monetary Fund (2020) projects a global growth outlook of 3.3% for 2020 and 3.4% for 2021, but these are likely to be revised downwards, confirming that risks are intensifying almost everywhere leading to difficult socio-economic consequences (Asian Development Bank, 2020; Sellers et al., 2019). Situations in the SVEs are worsening faster because of their less agile economic systems, fragmented markets, weak institutions, and high-dependency on foreign aid.

The past economic crises have shown that weak institutions can even fail efficient markets (Diamond & Rajan, 2009; Page & Tarp, 2017; The World Bank, 2000). Acemoglu and Robinson (2012) dispense a classic on why nations fail and they recently discuss how the balance of power between the state and the society can promote human welfare (Acemoglu & Robinson, 2019). Their “Shackled Leviathan” (guardian of good governance) is the key to promoting economic opportunity and prosperity. In the South American and African states, parts of Europe and Asia, other ugly versions of the Leviathan is also blamed for reduced liberty and ill-fare. Therefore, despite the stages of development, economic growth is hindered by unresponsive and corrupt administrations usually cultivated under weak governance structures\(^2\). Institutions are impactful as they can acquire and utilise resources and information unlike private agents (The World Bank, 2013). Further, this line of thinking has created influential literature to promote our understanding of the role of institutions in societies\(^3\) (see, for Acemoglu, 2002; 2010; Acemoglu et al., 2005; Acemoglu & Robinson, 2001; 2012). This body of literature, however, lacks insights on SVEs.

The current paper contributes to the literature by promoting the idea that export productivity coupled with good governance can sustain decent rates of economic growth in the SVEs\(^4\). We focus on SVEs because they have capacity constraints to benefit from free trade which restricts their economic prospects. Conventional wisdom states that good governance promotes superior trade performance because transparency reduces corruption and creates ethical exchanges (Kaufmann et al., 2004; The World Bank, 2007). Besides, it is attractive to international donors and development partners who are crucial agents for developing the needed capacity in the SVEs (The United Nations, 2019). The WTO’s Aid-for-Trade program is based on this novelty and has been instrumental in supporting the aspirations of SVEs in achieving the UN’s Sustainable Development Goals (The World Trade Organization, 2019). This paper aims at using the established indicators of governance to determine if trade-based growth supported by good governance is possible in small economies. We take Fiji as a representative SVE due to the availability of data\(^5\). Besides, Fiji is exploring trade opportunities with its new trade policy framework and is a signatory to several regional and international trade agreements. Furthermore, the local literature on trade, governance, and economic growth is limited for this small economy.

The current paper is structured as follows: Section 2 is a brief survey of literature while Section 3 specifies the model and variables. Key findings are discussed in Section 4. Sections 5 and 6 include sensitivity analysis, while Section 7 concludes the paper with implications for trade-based growth policy.

2. Literature review
The literature on trade, governance, and economic development is voluminous—our summary is given below. But first, we devote some space for indicators of governance and their measurement. In
recent years, there has been an upsurge in demand for better governance indicators. Some internationally recognized ones are: Freedom House Survey Index,\textsuperscript{6} International Country Risk Guide,\textsuperscript{7} Transparency International Index,\textsuperscript{8} Global Integrity Index,\textsuperscript{9} Open Budget Index,\textsuperscript{10} Global Competitiveness Index,\textsuperscript{11} and Countries Performance and Institutional Assessment based statistics.\textsuperscript{12} The Worldwide Governance Indicator (known as WGI/KKZ) is well-regarded in the literature. It ranks countries into six different aspects of Kaufmann et al. (1999a) and (Kaufmann et al., 1999b). The WGI dataset has been produced bi-annually from 1996–2002 and annually from 2002 onwards by the World Bank. Far and large, this is a break-through in quantitative measurement of governance (a highly qualitative variable) and its composite index for Fiji is also used in this paper.

The WGI is developed from individual variables measuring different aspects of governance but the six board sub-indicators are: Voice and Accountability, Political Stability and Violence, Governance Effectiveness, Rule of Law, and Control of Corruption are available. These are defined in Kaufmann et al. (1999a; 1999b)). However, there has been significant debate on the methodology of WGI, generally on the relevance of the said indicators to capture the true essence of quality of governance, including measurement issues. These are discussed in Arndt and Oman (2006), Knack (2006), Thomas (2009), and Kaufmann et al. (2007) provide a detailed response to the major critics. Table 1 below shows basic WGI statistics for selected developed and developing countries (including SVEs of the Pacific). The trends are interesting!

In Table 1, Voice and Accountability are significantly higher in the OECD countries. However, it declined in the US since 2000 but improved somewhat in Japan. In the large developing country sample, China recorded the worst outcome. In comparison, smaller economies performed better. Similar trends are noted for Political Stability and Absence of Violence and Terrorism. France, the UK, and the US rank at the bottom of the OECD group, but these have improved for almost all OECD countries. In large developing countries sample, Colombia ranks the lowest after India and Kenya, but others show marginal improvement. Mauritius has performed reasonably well, while almost 50% of the Pacific SVEs recorded good outcomes. The Solomon Islands show significant improvement since 2011 and the other good performers are Vanuatu, Samoa, and Tuvalu. All OECD countries (excluding France) have had an impressive outcome on the Effectiveness of Governance. The large developing countries seem to have lost some grounds, except for Kenya and Colombia. The Pacific nations (except for the Solomon Islands, Vanuatu, and Samoa) do not show much progress.

Data also show that the Quality of Regulations has been high in the OECD sample. In developing countries, South Africa and Mauritius have improved their performances, while this indicator has declined for almost all developing countries in the sample. The worst outcome has been recorded in Argentina. In the Pacific, a similar trend has been noted, but the Solomon Islands and Kiribati have had the worst outcomes. The Rule of Law indicator has been consistently high for all the OECD countries but in the developing country sample, Argentina and Kenya rank at the lowest. Data show that Kenya and Colombia seem to have improved on this recently while the rest have shown marginal progress. The developed countries show improvement in Control of Corruption, except for the USA. However, most large developing countries have declined in this indicator with Kenya being at the bottom. China has made significant improvements, like most of the Pacific SVEs. However, PNG ranks lowest with only marginal improvement in this indicator.

For Fiji, the political situation has been very fragile, with frequent change of governments. Data show that during the political instability periods (1987, 2000 and 2006) Voice and Accountability were low, (Figure 1(a)). However, the current Government has improved the Fijian constitution and maintained stability by preventing any political unrest since 2006. These could have led to positive developments noted in Figure 1(a). On Governance Performance (Figure 1(b)) Fiji recorded a decline in 2000 and in the 2006–2013 period. The Government Effectiveness data (Figure 1(c)) shows unsatisfactory performance since 1996, but there were some positive outcomes possibly connected to the restoration of democracy following the 2014 general elections. The Regulatory Quality (Figure 1(d)) indicator shows a fragile performance since 2002. However, following 2012,
| OECD Countries       | 2000–2005 | 2006–2010 | 2011–2015 | 2000–2005 | 2006–2010 | 2011–2015 | 2000–2005 | 2006–2010 | 2010–2015 |
|---------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| AUSTRALIA          | 95        | 95        | 95        | 82        | 78        | 80        | 94        | 95        | 94        |
| CANADA             | 97        | 95        | 95        | 81        | 82        | 88        | 96        | 96        | 96        |
| FRANCE             | 88        | 91        | 88        | 63        | 65        | 61        | 92        | 90        | 88        |
| GERMANY            | 93        | 93        | 94        | 77        | 78        | 73        | 91        | 92        | 93        |
| JAPAN              | 79        | 78        | 82        | 83        | 81        | 80        | 87        | 89        | 90        |
| SWITZERLAND        | 96        | 99        | 99        | 94        | 94        | 97        | 97        | 98        | 98        |
| UK                 | 92        | 92        | 92        | 60        | 59        | 61        | 94        | 92        | 92        |
| USA                | 91        | 85        | 83        | 51        | 61        | 67        | 92        | 92        | 89        |
| Developing Countries |          |           |           |           |           |           |           |           |           |
| ARGENTINA          | 57        | 58        | 58        | 35        | 43        | 48        | 55        | 51        | 49        |
| BRAZIL             | 59        | 62        | 61        | 45        | 40        | 41        | 58        | 50        | 51        |
| CHINA              | 8         | 6         | 5         | 32        | 29        | 28        | 56        | 58        | 49        |
| COLOMBIA           | 35        | 43        | 46        | 3         | 6         | 11        | 48        | 52        | 53        |
| INDIA              | 59        | 60        | 61        | 15        | 14        | 13        | 54        | 56        | 51        |
| KENYA              | 35        | 39        | 41        | 14        | 12        | 11        | 32        | 34        | 39        |
| MAURITIUS          | 74        | 73        | 73        | 80        | 71        | 76        | 72        | 76        | 77        |
| SOUTH AFRICA       | 70        | 65        | 67        | 37        | 46        | 43        | 74        | 68        | 66        |
| Pacific Island Countries |       |           |           |           |           |           |           |           |           |
| FIJI               | 46        | 29        | 33        | 58        | 42        | 53        | 47        | 33        | 31        |
| KIRIBATI           | 74        | 69        | 75        | 95        | 98        | 88        | 36        | 26        | 28        |
| PNG                | 43        | 50        | 49        | 27        | 22        | 26        | 32        | 27        | 28        |
| SAMOA              | 71        | 66        | 65        | 89        | 84        | 86        | 65        | 58        | 62        |
| SOLOMON ISLANDS    | 54        | 51        | 52        | 40        | 54        | 62        | 10        | 15        | 19        |
| TONGA              | 48        | 49        | 64        | 70        | 59        | 78        | 31        | 39        | 44        |
| TUVALU             | 79        | 71        | 75        | 96        | 98        | 96        | 43        | 37        | 23        |
| VANUATU            | 67        | 64        | 67        | 82        | 95        | 81        | 29        | 42        | 39        |
| OECD Countries | Regulatory Quality Average Ranking | Rule of Law Average Ranking | Control of Corruption Average Ranking |
|----------------|-----------------------------------|----------------------------|-------------------------------------|
|                | 2000–2005 | 2006–2010 | 2011–2015 | 2000–2005 | 2006–2010 | 2011–2015 | 2000–2005 | 2006–2010 | 2011–2015 |
| AUSTRALIA     | 94        | 96        | 97        | 95        | 95        | 95        | 95        | 96        | 95        |
| CANADA        | 93        | 95        | 96        | 94        | 96        | 95        | 94        | 95        | 95        |
| FRANCE        | 84        | 87        | 84        | 90        | 90        | 89        | 88        | 91        | 89        |
| GERMANY       | 92        | 94        | 93        | 94        | 94        | 92        | 93        | 93        | 94        |
| JAPAN         | 79        | 84        | 84        | 87        | 89        | 89        | 85        | 89        | 92        |
| SWITZERLAND   | 96        | 94        | 95        | 99        | 96        | 97        | 96        | 97        | 97        |
| UK            | 97        | 98        | 96        | 94        | 94        | 93        | 95        | 92        | 93        |
| USA           | 94        | 93        | 89        | 92        | 92        | 91        | 93        | 89        | 88        |

| Developing Countries | Regulatory Quality Average Ranking | Rule of Law Average Ranking | Control of Corruption Average Ranking |
|----------------------|-----------------------------------|----------------------------|-------------------------------------|
| ARGENTINA            | 31      | 25       | 19        | 30      | 31       | 26        | 41      | 40       | 37       |
| BRAZIL               | 60      | 54       | 53        | 41      | 46       | 53        | 57      | 56       | 52       |
| CHINA                | 41      | 48       | 44        | 38      | 43       | 42        | 39      | 34       | 44       |
| COLOMBIA             | 54      | 57       | 65        | 26      | 41       | 44        | 50      | 50       | 44       |
| INDIA                | 42      | 42       | 37        | 56      | 56       | 54        | 43      | 41       | 37       |
| KENYA                | 45      | 49       | 43        | 21      | 17       | 29        | 18      | 16       | 15       |
| MAURITIUS            | 67      | 73       | 80        | 82      | 79       | 78        | 70      | 72       | 69       |
| SOUTH AFRICA         | 70      | 66       | 64        | 55      | 57       | 60        | 70      | 64       | 56       |

| Pacific Island Countries | Regulatory Quality Average Ranking | Rule of Law Average Ranking | Control of Corruption Average Ranking |
|--------------------------|-----------------------------------|----------------------------|-------------------------------------|
| FIJI                     | 39      | 28       | 35        | 46      | 35       | 29        | 51      | 36       | 48       |
| KIRIBATI                 | 19      | 11       | 12        | 67      | 66       | 56        | 58      | 58       | 62       |
| PNG                      | 25      | 28       | 35        | 17      | 18       | 21        | 16      | 7        | 15       |
| SAMOA                    | 54      | 48       | 45        | 79      | 74       | 72        | 58      | 62       | 64       |
| SOLOMON ISLANDS          | 7       | 11       | 14        | 15      | 26       | 34        | 26      | 41       | 44       |
| TONGA                    | 20      | 26       | 31        | 57      | 60       | 53        | 30      | 25       | 47       |
| TUVALU                   | 54      | 17       | 15        | 87      | 83       | 65        | 54      | 54       | 50       |
| VANUATU                  | 30      | 32       | 33        | 55      | 64       | 61        | 39      | 66       | 66       |

(Source: Author's calculations based on The World Bank (2016) database)
this has marginally improved. Data on Rule of Law (Figure 1(e)) generally declined from 1996 until 2013 but improved since. This could be related to strengthening security forces, better regulations, and strategic institutional reforms recently undertaken in by the Government. The indicator on Control of Corruption (Figure 1(f)) was low during the 1996–2010 period but it improved afterward. We conjecture that the establishment of Fiji’s Independent Commission Against Corruption (in 2009) and the Financial Intelligence Unit (in 2006) could have possibly contributed to this positive outcome.

More intensive analysis of the impact of good governance on national economies is noted from the international literature. For example, Campos and Nugent (1999) and Kaufmann et al. (1999a; 1999b) suggest that good governance can strongly promote development. Chauvet and Collier (2004) argue that countries with less developed governance structures experience lower rates of growth. Likewise, Emara and Chiu (2015) suggest that selected countries in the Middle East and North Africa show a positive association between governance and growth. Sen (1999) points out that macroeconomic stability and good governance have a significant positive impact on economic development as well. Saha et al. (2014) find that institutional development associated with mature
democracy is crucial for economic development. Fosu (1992) conclude that long-run growth is reduced by political instabity and Barro (1996) show the plausible negative effects of political instability on economic development. Alesina and Perotti (1994) state that weak institutions reduces growth through their negative impact on investment while Knack and Keefer (1997) stress that protection of property rights and the ability to enforce contracts are a positive stimulus to growth.

The literature on SVEs is relatively limited. Some influential studies, for example, Congdon Fors (2014) finds that country size is negatively related to institutional quality. Brown (2010) suggests that a strong institution is a pre-requisite to development while the binding constraints of the small states hinder the development of the strong public institution. However, there is a strong body of literature on development issues of SVEs, which argues that the core of the hardships in these economies lies in their weak economic potential dictated by narrow resource base and small populations (Asian Development Bank (2020); The United Nations (2019), Tisdell (2014), Bertram (2006), Armstrong et al. (1998), and Armstrong and Read (1998). Although all studies on SVEs discuss the underlying characteristics of these economies, the Asian Development Bank (2020) considers the Asia-Pacific regional SVEs’ vulnerability to COVID-19 and its impact on the national economies. This together with The United Nations (2019) report explain how vulnerable these economies are, in the face of exogenous shocks and weak domestic capacity. Similarly, Briguglio (1999) state that SVEs’ special disadvantages render these economies very vulnerable to forces outside their control—a condition which sometimes threatens their very economic viability. Alesina and Wacziarg (1998) argue that smaller countries have larger public sectors and are more open to trade which could increase their exposure making them vulnerable to external shocks. Bertram (2006) states that the combination of a large government sector and a limited productive base, left post-colonial small state economies quite reliant upon state employment and aid funding. Armstrong et al. (1998) show that most successful microstates are associated with not only a rich exportable resource base but successful tourism and business/financial services.

Studies on Fiji are only a handful. Jayaraman (2006) argues that weak investment climate and lack of business confidence have strong connections with weak institutions. Prosad (2003) propose that property rights which would enable enforcement of contracts and lowered transaction costs can promote productivity in Fiji. Gounder (2004; 2005) suggests that political instability adversely affects economic growth through investment. Gani and Duncan (2007) developed an index of governance based on 3 dimensions of WGI (rule of law, government effectiveness, and regulatory quality) and find that governance in Fiji was badly affected by the weakening of the quality of institutions and rule of law. However, they do not conduct empirical tests. Gounder and Sooreea (2013) show that negative political developments have had significant adverse effects on economic growth by reducing foreign direct investment and exports. All these studies highlight the need to improve institutional governance in Fiji, possibly with reforms.

3. Model specification
In exploring the connection between export performance, governance, and economic develop-
ment in Fiji (the latter proxied by real GDP growth), time-series data for the period 1970–2015 are used. The aim is to evaluate how exports complemented by governance indicators (together with other conditioning variables) affect Fiji’s real income. The World Bank data for Fiji are available on the six sub-indicators of governance only from 1996–2015. Therefore, our first set of analysis relates to this sub-sample. Governance in this paper is taken as a composite average of these sub-indicators (denoted as GG). Noting the limited data points in this experiment, POLITY2, an index of democracy measured by INSCR is used as an alternative measure in the second set of regressions. Data are derived from the Fiji Bureau of Statistics (various years), RBF-2018, IFS-2018, World Bank/ WDI-2018 databases, and the INSCR database. The real capital stock is extracted from the Penn World Table 8.1 and labor employment is proxied by population in the age of (15–64) years. All variables are in natural logs, except for POLITY2. Details of data are in Appendix-A1.
In what follows, we discuss the empirical procedures and key findings. First, the growth rate of TFP (Total Factor Productivity) is estimated and made to depend on growth rates of exports, composite governance indicators, and other plausible growth determinants. This approach is based on an IMF study (Senhadji, 2000) and is different from others which use the growth rate of output as the dependent variable. The idea here is that productivity growth is a better proxy for economic growth because the annual or short span of data does not guarantee that an economy has achieved the steady-state (Singh, 2014; Solow, 2008). In addition, it is claimed that any variable that impacts TFP directly affects economic growth, Solow (2008). These are the underlying premises of our TFP-based growth regressions.

However, the modeling strategy involved in this experiment is laborious but can be explained as follows. First, we estimate a production function using the Solow (1956) approach but advanced by Mankiw et al. (1992). The real output \( Y \) is assumed to depend on an index of knowledge \( A \) and traditional inputs such as \( K \) (physical capital), \( L \) (labor), and \( H \) (human capital). \( H \) is human capital as estimated by Barro and Lee (1993) method.\(^\text{14} \) The share of capital \((\alpha = 0.33)\) is theoretically assumed parameter. The constant returns to scale Cobb-Douglas production technology is represented as (1) below:

\[
Y = AK^\alpha (LH)^{1-\alpha}
\]

(1)

All variables are defined above. Taking logs and the first difference of (1), we get Equation (2).

\[
\Delta \ln Y = \Delta \ln A + \alpha \Delta \ln K + (1 - \alpha)(\Delta \ln L + \Delta \ln H)
\]

(2)

Equation (2) is re-parametrized and used to compute the growth rate of productivity \((\Delta \ln A)\) residually. We are aware of the limitations in residual-based TFP but agree with Pritchett (2006) that with a lack of real data (on TFP), we settle for the second-best. We will revisit this issue through sensitivity analysis later in the analysis. Figure 2 shows that after highly volatile growth rates in the mid-1980s, productivity growth in Fiji seems to have stabilized in the recent past. The latest productivity report (Fiji National Productivity Centre, 2019) also states that since 2012, productivity has increased.

4. Interpretation of RESULTS

Now we concentrate on our key task—estimating growth effects. Senhadji (2000) estimated TFP similarly and related it to a set of hypothesized growth-enhancing variables for most developed and developing countries. We conjecture that real exports, governance indicators, and other conditioning variables such as human capital, private investment, government expenditure, etc. are important determinants of growth. Estimates in the first difference of variables are obtained using OLS Non-linear Least Squares Method (Table 2). Column (A) shows conventional estimates without the composite governance indicator, and we get theoretically consistent results for all plausible determinants included in the analysis. Exports (RX) seem to drive growth rates, together with human capital (HK) and private investment (IRAT). Foreign aid seems to inject significant positive influence. The goodness of fit indicates a need for improvement, but the estimates are quite reasonable and without diagnostic problems.

We then added the governance indicator (GG) and find its positive and significant impact on economic growth, Column (B). The inclusion of GG also leads to an improvement in the growth effects of human capital and exports. We also estimate the effects of interacting exports and governance and the results are plausible. In addition, the difference in the explanatory power of (B) relative to (A) indicates the important role of governance in trade-based growth. To minimize endogeneity bias, (B) is re-estimated using the two-stage instrumental variables (2SIV) method and reported in (C). The results are quite consistent and respond well to the instruments (one-period lagged independent variables) used, without compromising the goodness of fit or
Figure 2. Productivity growth in Fiji 1960–2015.

Table 2. Effects of exports on growth (1970–2015)

|                | A-NLNS | B-NLNS | C-2SIV | D-NLNS | E-2SIV |
|----------------|--------|--------|--------|--------|--------|
| Constant       | 0.007(0.82) | -0.118[0.00]** | 0.047(0.91) | -0.149(0.00)** | -0.191(0.01)** |
| Δ ln HK-1       | 13.991[0.01]** | 10.351(0.00)** | 9.747(0.01)** | 12.905(0.00)** | 16.279(0.01)** |
| Δ ln RXe-1      | 0.054[0.07]*   | 0.0532(0.08)*    | 0.0578[0.09]*   | 0.056[0.05]*     | 0.075(0.06)*    |
| Δ ln INV -2     | 0.064(0.09)*   | —                 | 0.066(0.02)**   | 0.061(0.03)**    | 0.0590(0.04)**  |
| Δ ln AIDT-1     | 0.112[0.07]*   | 0.117[0.04]**    | 0.101[0.03]**   | 0.121[0.04]**    | 0.091(0.02)**   |
| Δ ln GG          | —               | 0.0176[0.00]**   | 0.192[0.00]**   | —                 | —                 |
| Δ ln GGe-2      | —               | 0.178(0.00)**    | 0.155(0.00)**   | —                 | —                 |
| Δ ln (GG × RX)1-1| —               | 0.025(0.05)**    | 0.031(0.04)**   | —                 | —                 |
| Δ Polity2-1     | —               | —                 | —                 | 0.005[0.03]**    | 0.006(0.04)**    |
| Δ/Polity2 × RX1-1| —               | —                 | —                 | 0.002[0.00]**    | 0.003(0.00)**    |
| R² (GR²)        | 0.503            | 0.664            | 0.652(0.599)    | 0.697            | 0.663(0.614)     |
| SER            | 0.020            | 0.017            | 0.018            | 0.015            | 0.017            |
| \(\chi^2\) (SC) | 3.57[0.12]*     | 3.17[0.08]       | 3.48[0.06]      | 0.900[0.34]      | 0.061(0.80)      |
| \(\chi^2\) (F) | 0.15[0.70]       | 2.10[0.15]       | 2.71[0.10]*     | 0.007[0.93]      | 0.258(0.61)      |
| \(\chi^2\) (n) | 1.30[0.52]       | 1.37[0.50]       | 1.22[0.54]      | 1.934[0.38]      | 4.279(0.12)      |
| \(\chi^2\) (hs) | 0.74[0.39]       | 1.79[0.18]       | 0.94[0.33]      | 1.721[0.19]      | 0.002(0.96)      |

Notes: (1) Standard errors are reported beside the coefficients. (2) Variables significant at 10% are denoted with * and those at 5% or below with **. (3) Chi-square test (LM version) are for serial correlation (SC), functional from misspecification (ff), normality in residuals (n) and heteroscedasticity (hs).

diagnostic tests. The adjusted R and GR squares are close as well. We then introduced the POLITY2 index15 in the model to capitalize on the weakness of limited data points in the above analysis. The extended sample now is 1970–2015. Estimates in (D) show that the growth effect of POLITY2, together with that of its interaction is reasonable and agrees with the conclusions derived with GG. Finally (D) is re-estimated with the 2SIV method and the results affirm the above findings. Due to increased data points and consistent results obtained with 2SIV, (E) is our preferred model.

Model (E) agrees with some of the earlier findings stated above, as well as with others in the literature. The active role of institutions is evident in Fiji. This agrees with Gounder and Sooree (2013) who show that political instability has had serious negative impact. Other studies (Gounder (2004; 2005),
Jayaraman (2006), and Gani and Duncan (2007)), although not comparably analytical, are similar in their conclusions about the role of governance. Due to data limitations, we used alternative proxies with sensitivity tests (details below) and found that governance indicators are statistically significant determinants of growth along with others such as human capital and private investment. This agrees with the general findings on the role of institutions, such as with Congdon Fors (2014) who suggests that both political and economic institutions are important. The link between improvement in governance quality and positive growth is also established by Emara and Chiu (2015). Other estimates in (E) are consistent with our earlier findings. So far, it can be concluded that economic growth in Fiji depends heavily on international factors (exports and foreign aid) and ability to engage with trade partners (good governance, human capital and private investment). We find small but significant influence of indicators of governance, and impacts as expected for foreign aid, investment, human capital and exports productivity.

The diagnostic test results are reasonable and all variables are significant and appropriately signed. The adjusted R and GR squares are close. Sargan's X² = 2.03 with p = 0.15 implies adequacy in instruments. The estimates identify that traditional forces of growth are important, but good governance and export performance work jointly to promote economic growth in Fiji. This is consistent with but updated from Jayaraman (2006) and Gounder (2004; 2005). However, due to lack of empirical studies on Fiji, these are less comparable. In the present paper, importance is placed on the use of better proxies of governance, robust estimation methods, and revised dataset. We also obtain evidence that the dynamics between governance and exports are noteworthy. That is, Fiji’s trade and international relations must demonstrate principles of good governance to promote economic growth.

5. Sensitivity analysis: methodology
In the above analysis, issues surrounding the estimation of TFP could induce fragility in the estimates. As such, one needs to conduct sensitivity analysis possibly using alternative methodologies, data sets, and assumptions. To further gain confidence in our findings, we invoked another but consistent estimation technique. This second modelling framework is based on Rao and Singh (2010), where pre-estimating TFP is not required. For a detailed review of this approach, see Singh (2014). We use both the GGI and POLITY2 indices, sequentially, and maintain the application of a two-stage instrument technique to control for reverse causation.

The present approach is based on estimating an augmented production function with constant returns to scale and an extended definition of TFP. Here, the TFP is made to depend on any plausible growth factor (RX, for example). One may recall that in the original model of Solow (1956), TFP growth is exogenous. The Solow model is essentially represented by Equations (3 and 4), where the output (Y) depends on the level of technology (A) and other traditional inputs labor (L) and capital (K), with the assumption that g₁ = 0.

\[
Y_t = A_tK_t^\alpha L_t^{1-\alpha} \tag{3}
\]

\[
A_t = A_0e^{(\theta_0 + g_1 + RX)t} \tag{4}
\]

We argue that if RX promotes growth, g₁ will be significantly greater than zero. To estimate the growth effects of exports with good governance (GG), the following alternative specification of (3) is derived after substituting an extended version that incorporates GG and RX of (4) into (3).

\[
y_t = A_0e^{(b_2 + b_1RX + b_2RX + GG + b_2Z_1) t} K_t^\alpha L_t^{1-\alpha} \tag{5}
\]

The assumption here is that productivity depends on exports, its interaction with the governance indicator, as well as other plausible forces of growth. In (5) the variables (y, h, k) are in per worker
The conditioning variables (vector of \( z_i \)'s) include a theoretically consistent set of determinants of growth, as used in the previous analysis (Table 2).

6. Sensitivity analysis: results

All estimates are obtained using the LSE-Hendry’s GETS method, see Hendry et al. (1984) for an explanation. This is a widely used approach for time series work involving dynamic specifications. Using the standard variable deletion tests, we arrived at the most parsimonious estimates in Table 3, controlling for path dependency bias, auto-correlation, heteroscedasticity, and misspecification of functional form. The results obtained with the standard GETS non-linear least square method, following Unit Root tests\(^{16} \) initially, and then with 2 stages instrumental variable option.

Estimates in column (A) are conventional without the governance indicator. Including POLITY2 and its interaction with exports, we find that consistent and improved estimates, column (B). We then re-estimated (B) with a 2-SIV method by including one period lagged independent variables as instruments. The estimates are good, with adjusted GR square adequately high. Sagon test rejects the null of inadequate instrument selection at a 5% level. As in the analysis before, the interaction and their dynamics significantly affect the growth rate of output. Human and physical capital per worker, investment, and policy environment impact economic growth as expected, with correct signs. The diagnostic test results are appropriate and the speed of adjustment to long-run equilibrium (\( \lambda \)) is high and significant. Finally, we tested if our conclusions would differ when POLITY2 and exports (\( RX \)) are introduced as “shift variables” in the production function. This is reflected in D obtained using the 2-SIV method. The results, after removing some dynamic variables, are not systematically different. Thus, we converge to accepting C-2SIV as the final

| Table 3: Effects of exports performance on growth rate |
|-----------------------------------------------|
| **A-NLLS** | **B-NLLS** | **C-2SIV** | **D-2SIV** |
| --- | --- | --- | --- |
| Constant | 4.906[0.00]** | 4.885[0.00]** | 4.828[0.00]** | 5.021[0.03]** |
| \( \lambda \) | -0.66[0.00]** | -0.65[0.00]** | -0.68[0.00]** | -0.59[0.00]** |
| Time | — | — | — | 0.013[0.00]** |
| ln \( RX_{t-1} \) | 0.034[0.06] | 0.033[0.07] | 0.037[0.05]* | 0.045[0.02]* |
| ln POLITY \( \times RX_{t-1} \) | — | 0.004[0.02]* | 0.003[0.05]* | 0.003[0.08] |
| ln POLITY\(_{t-1} \) | — | 0.005[0.03]** | 0.004[0.05]* | 0.005[0.06]* |
| ln GOV\(_{t-1} \) | -0.060[0.06] | -0.060[0.06] | — | — |
| ln \( k_{t-1} \) | 0.005[0.00]** | 0.005[0.00]** | 0.004[0.01]** | 0.003[0.02]** |
| ln \( P_{t-1} \) | 0.330[-] | 0.330[-] | 0.330[-] | 0.330[-] |
| ln IRAT\(_{t-1} \) | -0.061[-] | -0.060[-] | -0.049[-] | -0.167[0.04]* |
| \( \Delta \ln k_t \) | 1.067[0.02]* | 1.064(0.00)** | 1.164(0.00)** | 1.136(0.00)** |
| \( \Delta \ln P_t \) | — | -0.18[0.05]* | — | -0.220[0.10] |
| \( \Delta \ln IRAT_{t-1} \) | 0.034[-] | 0.033[-] | 0.037[-] | 0.045[-] |
| \( \Delta \ln \text{POLITY2}\(_{t-1} \times RX_t \) | — | 0.004[0.03]* | 0.004[0.05]** | 0.003[0.09] |
| \( R^2 \) (\( GR^2 \)) | 0.403 | 0.417 | 0.427(0.381) | 0.462(0.441) |
| SER | 0.033 | 0.032 | 0.032 | 0.030 |
| \( \chi^2 \) (SC) | 1.13[0.29] | 1.16[0.28] | 1.41[0.42] | 2.62[0.11] |
| \( \chi^2 \) (FF) | 1.38[0.24] | 1.42[0.23] | 1.67[0.21] | 2.02[0.17] |
| \( \chi^2 \) (H) | 0.60[0.74] | 0.53[0.77] | 1.71[0.39] | 1.37[0.46] |
| \( \chi^2 \) (HS) | 0.35[0.56] | 0.35[0.55] | 0.88[0.76] | 1.67[0.28] |

Notes: (1) Standard errors are reported beside the coefficients. (2) Variables significant at 5% are denoted with * and those at 1% with **. (3) Chi-square tests (LM version) are for serial correction (SC), functional from mis-specification (FF), normality in residuals (H) and heteroskedasticity (HS).
model, indicating that governance and exports co-operate to promote economic growth in Fiji. Sadly we do not have many comparative studies on Fiji to compare our results. But we present updated evidence to previous empirical studies.

7. Conclusions and policy implications
The essence of literature on governance and growth is that institutions matter for long-run stable growth (Acemoglu et al., 2005). Earlier discussion was concerned with nexus between democracy and growth (Barro, 1996), for example. Congdon Fors (2014), while articulating political institutions (democracy) and economic institutions (rule of law), finds that economic institutions account for better economic performance. Our present study is an addition on the existing literature on SVEs. It investigates the trio relationship of export, good governance and economic growth. Political and economic institutions related variables along with other control variables have been included our empirical model. The results identify that traditional forces of growth are important, but good governance and export performance work jointly to promote economic growth in Fiji. This is consistent with but updated from Jayaraman (2006) and Gounder and Sooreea (2013). The importance is placed on the use of better proxies of governance (such as WGI), robust estimation methods, and revised dataset. It is also evident that the dynamics between governance and exports are noteworthy, and for this reason, the paper suggests developing quality of institutions in Fiji. As shown in Tables 2 and 3, the interaction among governance and exports and their dynamics, significantly affect the growth rate in Fiji.

The findings confirm that exports and governance co-operate, and thus, the manner in which these dynamics are managed has important implications on Fiji’s export performance and economic growth. Besides, physical and human capital, FDI, private investment, and policy environment are also important sources of growth. Fiji being a small and vulnerable economy continues to face several economic challenges, and should, therefore, improve the existing institutions through bold and systematic reforms. This will make Fiji a more competitive and attractive destination for foreign investment. The lesson for other SVEs is that good governance is necessary to benefit from trade-based growth policies. The role of governance in resource allocation, investment in infrastructure, social protection and environmental protection should be given same priority with other roles.

Funding
The authors received no direct funding for this research.

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Authors’ statement
Key Research areas: Governance and growth, Macroeconomic risks in the South Pacific, and COVID-19 on Tourism and Housing. This paper directly relates to our first research activity related to the role of good governance in promoting economic growth and export.

Citation information
Cite this article as: Export performance, governance, and economic growth: evidence from Fiji - a small and vulnerable economy, Ronal Chand, Rup Singh, Arvind Patel & Devendra Kumar Jain, Cogent Economics & Finance (2020), 8: 1802808.

Notes
1. These are economies with small populations (below 5 million), landlocked, limited resources, and technological constraints. They depend heavily on imports for consumption, economic activity and trade. Foreign aid, heavy migration and remittance incomes additionally support livelihoods in such economies.
2. Acemoglu and Robinson (2019) label it as “Desolate and Paper Leviathans” which are less desirable and require honest reforms.
3. The Institutional Economics literature (North, 1981; 1990) view institutions as a deeper source of economic development as they incentivise innovation and risk-taking by reducing transaction costs and uncertainty.
4. But of course, there could be other determinants of growth—for an exhaustive survey, see Durlauf et al. (2005).
5. Fiji has less than 1 million people, and is heavily dependent on imports and international support. Besides, Fiji has unsettled land ownership and land administration issues restricting the supply of land.
6. The survey covers 193 countries, data available from www.freedomhouse.org.
7. This evaluates economic, financial and political risks for 161 countries.
8. The Corruption Perception Index (released in 1995) ranks 180 countries by their perceived levels of corruption guided by expert assessments and opinion polls.
9. An index of independent, non-profit organisation tracking governance and corruption trends around the world.
10. Measures the extent to which budget processes are open to their citizens.
11. Is an index for measuring competitiveness of countries, documentation are available at www.weforum.org
12. Produced annually by the World Bank, now included in WDI.
13. Of the sixteen (16), five (5) are the WGI. The World Bank (2007) elaborates that many NGOs the U.S. Government and other donors rely on the WGI to evaluate the quality of governance for determining aid programs.
14. In this method, years of schooling data and average rates of returns of 9% (see Singh (2014)) are used.
15. Marshall et al. (2016) present the methodology of the POLITY index. In summary, the POLITY is computed by subtracting the autocracy score from the democracy score which is obtained using country surveys. The resulting combined POLITY score ranges from +10 (strongly democratic) to −10 signifying strongly autocratic.
16. Details of Unit Root tests are available from the authors. In summary, we find all variables are difference stationary.

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Appendix

Appendix A1. Data sources and definitions

| Series | Name | Definition and Source |
|--------|------|-----------------------|
| Y      | GDP at market prices (constant 2010 US$) | GDP at purchaser's prices is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. Data are in constant 2010 U.S. dollars. Data is obtained from WDI. |
| K      | Capital Stock in National Prices for Fiji Reports capital stock levels in terms of Constant (2005) Prices. (Millions of 2011 U.S. Dollars). Data is obtained from Penn World Table 9.0. |
| POLITY2| Democracy Index | Measures the democracy level of a country. This ranges from −10 (fully autocratic) to +10 (fully democratic). Higher POLITY2 index means higher democracy. The data is obtained from The Integrated Network for Societal Conflict Research (INSCR) Website. |
| GOV    | Ratio of G/Y | General government final consumption expenditure (formerly general government consumption) includes all government current expenditures for purchases of goods and services. Data is obtained from WDI. |
| IRAT   | Ratio of I/Y | Gross fixed capital formation (formerly gross domestic fixed investment) includes land improvements (fences, ditches, drains, and so on); plant, machinery, and equipment purchases; and the construction of roads, railways, and the like, including schools, offices, hospitals, private residential dwellings, and commercial and industrial buildings. Data is obtained from WDI. |
| GG     | WGI | Measures the different aspects of governance such as Voice and Accountability, Political Stability and Absence of Violence, Government effectiveness, Regulatory Quality, Rule of Law and Control of corruption. Data is obtained from the World Bank. |
| HK     | Human capital per person | Provides an index of human capital per person, which is related to the average years of schooling and the return to education. Data is obtained from Federal Reserve Economic Data. |
| RX     | Real Export | Real exports of goods and services, deflated by export prices (xp) based 2010 reference year. Data is obtained from the Fiji Bureau of Statistics (FIBOS). |
| P      | Domestic Price | Unit value index of the major export goods-Fiji. Data is obtained from the FIBOS. |

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https://doi.org/10.1080/23322039.2020.1802808
