

ECONOMIC GROWTH AND UNEMPLOYMENT IN FIJI: A COINTEGRATION ANALYSIS

Keshmeer Makun and Nnanna P. Azu

School of International Economics and Trade, Dongbei University of Finance and Economics

ABSTRACT: *Fiji has been experiencing high unemployment rate since 1990s. Unemployment has become increasingly more pronounced from 2000 due to the political instability, expiry of land leases and operational problems in garment and gold industry. On the other hand, there was a surge in number of graduates following the establishment of two new universities. Additionally a sharp decline in investment in the post coup years of 2000 ensued, contributing to further increase in unemployment rate and sluggish economic growth. This paper seeks to investigate whether long run association among growth and unemployment is relevant for Fiji for the period 1982-2012. Johansen Cointegration test procedure has been applied to ascertain the association among growth, investment and unemployment. Result confirmed the evidence of long-run association among unemployment and growth, with cointegration running from investment and unemployment to increase in economic output. Economic policies should gear towards improving investment.*

KEYWORDS: Economic Growth, Unemployment, investment, Fiji

JEL Classification: F43, J6

INTRODUCTION

The underlying correlation among economic output and unemployment is an age-old question in economic literature. Unemployment rate is one of the key indicators for measuring the performance of any economy. Thus, efforts are being made by countries to manage the problem of unemployment and Fiji is no exception. Fiji entered into a fresh period with September 2014 election with newly written 2013 constitution that ensures parity to Fijians unlike the previous constitution. The honors is now on the newly elected administration to raise up to the economic challenges and provide goods and services to people. Economic development, equality as well as reducing unemployment would be main focus for a multiracial South Pacific Island of Fiji. While the global economic outlook looks weak, Fijian economy is forecasted to grow in the current year. The economic outlook for Fiji's major trading partners and neighbours Australia and New Zealand also looks promising with both the neighbours announcing their support for new government in power. In Fiji's case the positive factors are the expansionary fiscal policies, low real interest and competitive exchange rate. Reserve Bank further forecasts a strong performance of other sectors such as tourism, garment exports, forestry and fishing and sugar. Interest rate continues to decline with the weighted average lending rate of commercial banks of 6.6 percent in 2012. However, despite the resumption in economic output growth in 2014, the unemployment rate remains at high level. The confidence factor has been an important consideration since the coup of 1987. While there are elation and acceptance of new 2013 constitution and the new government amongst the general population, the investors are still keeping their options and are holding on to their investment. In fact Unemployment rate has been rising. For instance unemployment from the period 1996 with 3.7 percent (11,124 people) has increased to 8.6 percent (28,220 people) in 2007 (FIBOS Census Survey 2007).

According to the report of (ESCAP 2013), there is also very high unemployment in the age group 15-24 years. The high unemployment rate is a cause of concern to Fijian government for several of reasons. First among them is the negative effect on individual's well being which leads to other economic and social problems. Second, the high levels budget deficit as result of higher expenditure and lower tax revenue. From the policy maker's perspective, the main factor behind the high unemployment numbers is the low and volatile economic growth rate. In response government also reduced the retire age from 60 to 55 years for civil service which is applied selectively. Government and public service commission are two of the largest employers in Fiji's Labour market.

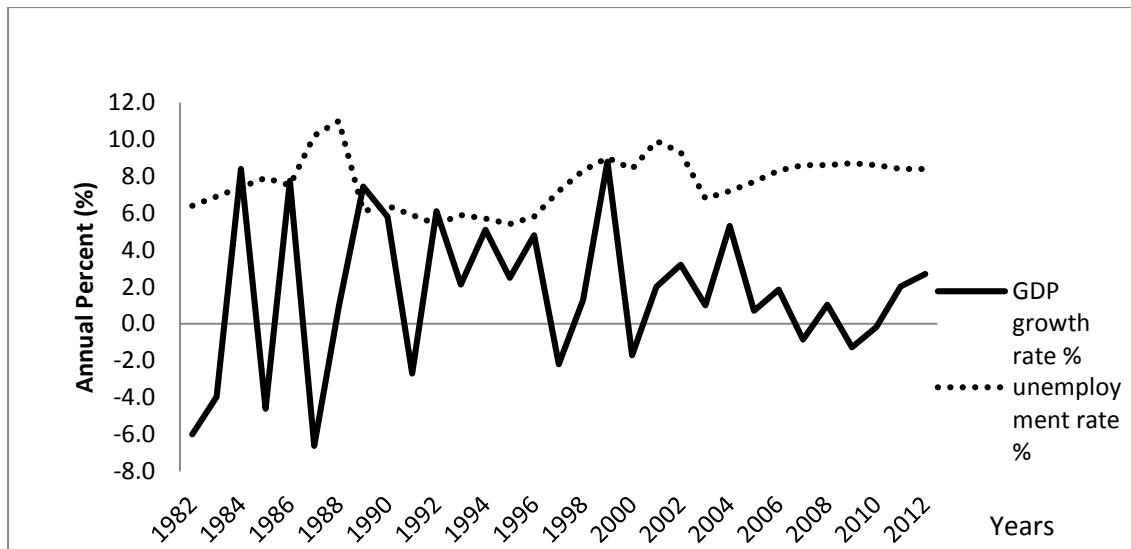
Therefore, taking all these into consideration, our aim is to study the economic relationship among growth and unemployment through econometric analysis and to distinguish if low economic growth is an excuse for high unemployment rate. We have at least two main motivations for this study. Firstly, taking into account the recent economic reforms in Fiji, understanding the relationship between economic growth and unemployment is crucial in order to promote economic policy towards a right direction and long term economic recovery. Secondly, we are not aware of any empirical study specifically studying the economic association connecting economic growth and unemployment in Fiji.

The balanced of the work is organised such that the next two sections shows the recent trends in economic growth and unemployment, and provides review of literature respectively, while the subsequent sections defines the empirical methodology, result and discussions and finally concludes with some policy implications.

THE RECENT TRENDS IN ECONOMIC GROWTH AND UNEMPLOYMENT

Over the last three decades, private investments in Fiji have averaged only around 10 percent of GDP despite expectations of 25 percent levels. This has deprived Fiji of its target growth rate of 5 percent per annum; over the last three decades economic growth has averaged less than 3 percent per annum. Given the persistent political instability, low levels of private investment and mediocre economic growth, Fiji's economy has weakened substantially in the last two decades. The deleterious effect of political instability has seen Fiji in recent years experiencing high levels of unemployment rate. From academic perspective this rise in unemployment rate is some what expected considering the reoccurring political instability in the last three decades which had scared away not only foreign investors but also lost confidence in domestic investment. Businesses closed, people migrated and farmers lost their lands as a result of expiry of their land leases during this period. In addition following the expiry of Multifibre Agreement and operational problems in garment and gold mining industry respectively lead to further acceleration in unemployment. Fiji's informal sector is not so dominant given its subsistence nature and includes agricultural production, handicrafts and other tailored products. The informal service sector particularly consist of food stalls, local transport services and shoe shine services. However, in economies where availability of jobs in wage sector is deteriorating and where migration from rural to urban areas is increasing, the informal sector of the economy have very essential contribution in supplying jobs, supplement individual income and contributing to gross domestic product. International labour organisation in the period 1999 implemented a project called human resource development project for employment promotion (HRDPEP) in informal sector to generate employment. The project instigated around twenty income generating activities. By the year 2007 eighteen

projects was fully completed and operational, creating about 3800 jobs in the informal sector. In 2009 government in its obligation to ILO conventions, developed National Unemployment Center (NEC) through budgetary allocation and ministry of Labour. The main focus of the this is facilitate employment, small business development and productivity in formal, informal and foreign employment service sector. However, despite the establishment of NEC to facilitate employment, statistics gathered in the period 2010-2011 survey reveal that unemployment has deteriorated. Some economist challenge that the unemployment statistics are higher than what is provided by the authorities. For Example, Chand (1998) points that the actual level of unemployment may be around 25 percent assuming an underemployment rate of 50 percent and a 100 percent female participation rate. The current situation with regards to employment in Fiji is serious. More recently figures released by national unemployment center shows that total of 46277 unemployed people are registered and from this around 2,741 unemployed have diplomas as qualification and about 1,640 are holders of first degree qualification (Fiji times, 22 May, 2015).



Source: WDI, FIBS and RBF (2014)

Figure 1. Growth rate of GDP and Unemployment rate for Fiji

LITERATURE REVIEW

Practical economic policies are geared towards strengthening economic growth and reducing unemployment. This becomes peculiar problem to policy makers in different economic entities. Reducing unemployment rate is a target that would bring joy to the populace and the society. Increasing economic growth is earmarked as successful economic policies and programs of a Nation, achieving these simultaneously is a peculiar task that is leaning on most analyst and policy-maker alike in one hand, and whether unemployment does have any relationship with economic growth is another debatable instance on the other hand.

The Okun's Law

The popularised Okun's law which states that a fall in unemployment rate to 1%, will result to an increase in output by 3%, gave an important conclusion that an economy should increase consistently to reduce unemployment, and that the growth of actual output must surpass that of the potential output. One should not overlook that Okun's law provides an important link between the labour and product markets. Okun's law is held to high esteem because of two most important economic variables which it buttressed to obviously related. Okun's law is very significant in policy administration, but the coefficient differs among countries, the general view is that countries should increase output to increase employment (Okun 1962). Stober (2015) in effort to validated Okun's law while assessing UK's unemployment-output relation ascertained that a GDP increase by 0.15% will reduce unemployment by 1%. Other author that concur to this law are Ball et al (2013), Moreno-Galbis (2012), Freeman (2001) and Sogner and Staissny (2002).

Sadiku et al (2015) reasoned the outcome of their model does not indicate any robustness in evidence and fail to confirm an inverse relationship between unemployment rate and economic growth as posted by evidence in Okun's law, hence, disposed the law while considering the case of Macedonia between the period of 2000-2012, where they found no relationship between the two variables (economic growth and unemployment), they also discovered that none of the variables causes each other. Moosa (2008) considered 4 Arab countries in effort to validate Okun's law but found that output growth in these countries does not directly result to reduction in unemployment, hence, rendering Okun's law insignificant, statistically.

Causes of Unemployment and its Relation to Economic Growth

Stober (2015) would mean that there is no world without unemployment and acknowledge that unemployment rate is one of the basic tools to measure economic performance of every nations. However, the author outlined the causes of unemployment to include but not limited to lack of employable skill resulting from drop in learning standard; obsolete school syllabi, low budget to education, and inability of the government to create jobs, amongst others. These reasons are inevitable in most developing countries but one should not rule out the possibility of political instability, increase in wages, economic depression, and seasons and in some case technological advancement as reasons for jobs layoff. Be as it may, job may be lost but creating and recreating these lost jobs remain duty of all and sundry-government and private individuals.

Moreover, considering how unemployment is related to economic growth, Pissaride (1990), Bean and Pissaride (1993) and Aghion and Howitt (1994), Daveri and Tabellini (2000) assessed long-run effects of growth on unemployment, but while others attest significant relationship between growth and Unemployment, Bean and Pissaride (1993) stated otherwise using OECD countries. In another dimension, Moreno-Galbis (2012) explained that economic growth tend to decrease unemployment especially for individuals who absorbed training, but accelerate rate of unemployment for unskilled employees who seek not to train, establishing "creative destruction effect". The author employed "endogenous job destruction framework" following Mortchsen and Pissande (1998) style, but applying direct search model, and was critical of earlier works which overlooks the impacts of technological process to economic growth and its relation to unemployment, equally as they

underestimate the potential productive gains associate with technological advancement which under-estimates the impact of growth on unemployment.

Meanwhile, in another reseach work, Langot and Moreno-Galbis (2008) tested perculiar situation in OECD countries in estimating the impacts of economic growth on young and old workers employment rate and discovered what can later be known as capitalisation effect which seems to dominate afromentioned “creative destruction effect” on the side of the youthful employees but reverse is envisaged among their age-advanced counterparts. Liu and Zeng (2008) align that both long run economic growth and unemployment depend on both factors identified in endogenous growth model with full employment and other labour market factors, transformation in long-run unemployment hangs on parameters in the model and lastly reasoned that though programmes that stimulate indirectly through development in labour market efficiency always decreases unemployment in the long-run, and while programs that directly promoted investment in R&D may encourage unemployment rate. Finally, Stober (2015) advised policy makers that fighting unemployment should be paramount focus of the government and even the private individuals, especially in developing nations and mostly recurrent expenditure should be moderate and educational spending encouraged.

Data Source

Data for this paper are from Fiji Island Bureau of Statistics, Reserve Bank of Fiji’s quarterly review and World Development Indicators (2013) . We used data on real growth rate of gross domestic product, unemployment rate, and investment over the period 1982- 2012. Prior to conducting any empirical analysis, except for growth rate of GDP, all variables were converted to natural logarithm. Unit root test were conducted as Johansen cointegration requires variables to be integrated of same order. Preliminary analysis indicated that series are $I(0)$ in there first difference.

ECONOMETRIC METHODOLOGY

The basic framework illustrating cointegration of long run assocaition among economic growth, unemployment, and investment in Fiji would be noted as in equation one. It is also possible to characterize as log-linear form:

$$\ln GDP_{Rt} = \alpha + \pi_1 \ln UNEM_t + \pi_2 \ln IN_t + V_t \quad (1)$$

Where: GDP_R is growth rate of output, UNEM is unemployment rate, IN is the investment in percent and V is the error term.

The quantitative technique used in this paper is the Johansen cointegration. There are three steps in estimating the cointegration and error correction model: (i) checking the series order of integration (ii) undertaking cointegration test (iii) estimating dynamic error correction model (ECM).

The order of integration involves stationary properties individual series under study. A series is stationary if it has constant mean, auto covariance and variance. Standard ADF test was applied for this purpose.

Cointegration test involves establishing long run association among variables. Even if the variables in the model themselves are trended and the computed residual is stationary, it indicates that variable are cointegrated in the long run (Hall and Hendry 1989).

If cointegration relationship exist, then in the third step we construct the error correction framework to investigate the short run coefficient. ECM indicates the adjustment speed in the following year if there is any disturbance in the equilibrium. The following model is used:

$$\begin{aligned}\Delta \ln GDP_t &= \alpha + \sum_{i=1}^m \beta_i \Delta \ln UNEM_{t-i} + \sum_{i=1}^n W_i \Delta \ln IN_{t-i} + \lambda ECM_{t-1} + V_t \\ \Delta \ln UNEM_t &= \alpha + \sum_{i=1}^m \beta_i \Delta \ln GDP_{t-i} + \sum_{i=1}^n W_i \Delta \ln IN_{t-i} + \lambda ECM_{t-1} + V_t \\ \Delta \ln IN_t &= \alpha + \sum_{i=1}^n Y_i \Delta \ln GDP_{t-i} + \sum_{i=0}^n W_i \Delta \ln UNEM_{t-i} + \lambda ECM_{t-1} + V_t\end{aligned}\quad (2)$$

ECM_{t-1}, is the error correction model. The calculated sign of coefficient (λ) is negative and its statistical significance is indication of long run cointegration Kremers *et al.* (1992).

RESULT AND DISCUSSION

Unit root test

The results of the unit root test are given in table 1. It is found that all series are found to be stationary at 1, 5 and 10 percent level. Growth rate of output is found to be stationary in both at levels and in the first difference though unemployment and investment are stationary in there first difference. Obviously, under such conditions of same integrated order conditions of variables, the use of Johansen cointegration is appropriate.

Table 1. Unit Root test Result

Variables	ADF Test statistics	p-value	Order of Integration
RGDP	-7.9554	0.000	I(0)
lnGDP	-5.5690	0.0001	I(0)
UNEM	-2.6011	0.1039	I(1)
lnUNEM	-5.4969	0.0001	I(0)
IN	-1.7508	0.3966	I(1)
lnIN	-5.0422	0.0003	I(0)

Note: The ADF test includes constant with trend. The critical values are based on Mckinnon (1996). Lag selection is based on Schwarz information criterion (SIC).

Cointegration Test Result

This section presents results of long-run cointegration relationship which anchored on Trace Statistics and Max-Eigen Statistics as reported in table 2.

Table 2. Cointegration Test Result 1

Hypothesized No. of CE(s)	Eigen value	Trace Statistic	0.05 Critical Value	Prob.**
0 *	0.752919	54.74063	29.79707	0.0000
1	0.360476	14.19748	15.49471	0.0777
2	0.041645	1.233575	3.841466	0.2667

Note: Trace statistics shows one cointegration equation at the 0.05 sig. level. * represents rejection of the null hypothesis at the 0.05 sig. level. P-values is based on **MacKinnon-Haug-Michelis (1999).

Table 3. Cointegration Test Result 2

Hypothesized No. of CE(s)	Eigen value	Max-Eigen Statistic	0.05 Critical Value	Prob.**
0 *	0.752919	40.54314	21.13162	0.0000
1	0.360476	12.96391	14.26460	0.0794
2	0.041645	1.233575	3.841466	0.2667

Max-Eigen value shows one cointegration equation at 0.05 sig. level. * represents rejection of the null hypothesis at 0.05 sig. level. P-value is based on **MacKinnon-Haug-Michelis (1999).

Both the trace statistics value and maximum Eigen value indicate evidence showing long-run cointegration within the series. The calculated trace value and maximum Eigen test value is greater than there respective 5 percent critical values, hence the null that there is no long-run relationship is discarded. On the other hand the estimated trace test and maximum Eigen test statistics is less than there respective 5 percent critical values, hence the null that there is one long-run relationship can not be discarded. This implies that there is only single long-run association among output, unemployment and investment.

Table 4. Estimated long run coefficient

Dependent Variable: GDP				
Variable	Coefficient	Std. Error	t-Statistic	(Prob)
UN	-0.51506	0.52016	-0.990195	0.0703*
I	0.169567	0.161769	-1.048204	0.0603*
C	8.712248	4.449342	1.958098	0.3035

Note: * represents significance level at 10 percent.

It is found that in the long run unemployment is negatively associated with economic growth. Similarly, investment is positively interconnected to growth rate of output. In relation to the extent of effect, an increase in unemployment by 1 percent will diminish growth rate of output by 0.5 percent in long-run. Thus, we find the output is responsive to changes in unemployment and cost of unemployment appears to be high. This accord well with the theory that an increase in unemployment leads to loss in production and undesirable effects on the distribution of income. This is evident as the economy has experience very low growth rate of output and high incidence of poverty during this period. Therefore it is clear that in the long run low economic growth is not an only excuse of high unemployment problem in Fiji however, low levels of investment could be a possible reason that needs to be explored further. Moreso, the effect of

investment on growth rate of output is considerable at 10 percent. The calculated parameter is optimistic and is in line with our expectations. In the long run an increase in investment by 1 percent will increase growth rate of out by 0.2 percent.

Table 5: Estimated short run Coefficient

Dependent Variable: <i>ln</i>GDPR				
Variables	Coefficient	Std. Error	t-Statistic	(Prob)
<i>ln</i> UNEM	-0.645574	0.464356	-1.390257	0.1772
<i>ln</i> I	0.298841	0.164457	1.817137	0.0817*
C	0.192704	0.569508	0.338369	0.7380
ECM	-1.941597	0.283104	-6.858253	0.0000***

Note: *** and * represent significance level at 1% and 10% correspondingly.

After examining the long-run association among growth rate of output and its determinants we proceed to check the short-run dynamic within the error correction framework. Table 5 shows short run causality results. For the regression by growth rate of output (GDPR) as left hand side variable, the calculated parameter of ECM has minus sign and significant at 1 percent. This error correction term is evidence of long-run cointegrating relationship running from unemployment (UNEM) and investment (I) to GDPR.

Moreover, the size of ECM (1.9415) in the growth rate of output (GDPR) regression indicates that the correction towards the long-run equilibrium is very rapid. This implies that any disturbance to equilibrium is amended very quickly in the following year. However, the error correction terms in the other equations is found to be insignificant, indicating absence of any long run relationship running from respective variables to unemployment (UNEM) and investment (I). Hence, we have only one long run cointegrating relationship running from unemployment and investment to growth rate of output, which confirms the result of only one cointegration equation obtained from Johansen cointegration test procedure.

Number of additional tests were applied and it does not show any evidence in opposition to the reliability of long-run regression equation. LM test for serial correlation could not reject the null of no serial correlation meaning error terms are normally distributed. The computed p-value in the square brackets is $X^2(2) = 3.345[0.1878]$. The plot of CUSUM test to check stability of calculated parameter shows that it is stable and veto of specification error.

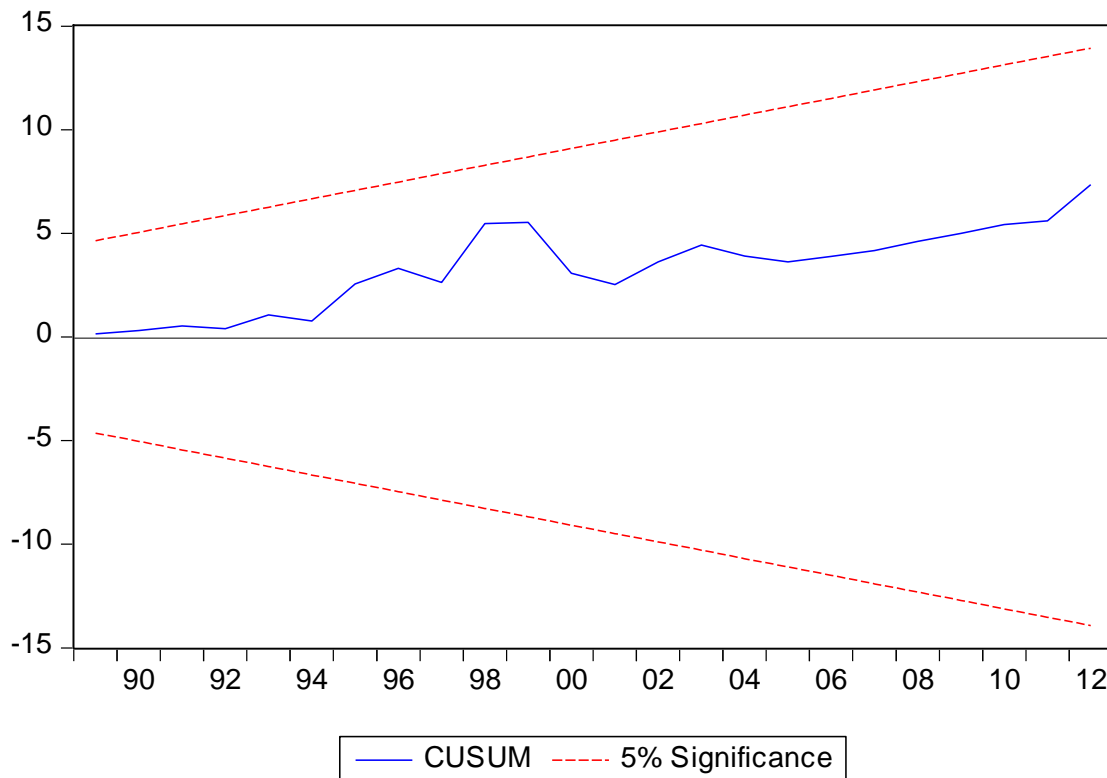


Figure 2: Plot of CUSUM Test

CONCLUSION AND POLICY IMPLICATION

The paper examined the relationship among Fiji's economic growth measured as growth rate of output and unemployment. Utilising the annual data over the period 1982-2012, and the Johansen cointegration test procedure, the paper investigated the long-run association as well as short-run dynamics among the variables. Its findings established the presence of long-run association among unemployment and economic output, with direction of correlation running from investment and unemployment to economic output. This means that in the long run unemployment and investment has serious implications on economic output. In the long-run unemployment is negatively linked to growth rate of output and investment has positive impact on economic growth. The error correction result is negative and probability is significant. These results have vital policy implications. It is clear that deficient in economic growth does not fully clarify high rate of unemployment problems in Fiji as assumed by policy makers. The demand management economic policies and reducing retirement age in long run would not help in curbing unemployment in Fiji. Economic strategies related to Labour market reforms and structural adjustments would be more useful. Policies related to unemployment that is due to jobless people who do not have the right skills and training to carry out available employment would be more adequate. This will not only curb graduates to seek greener pastures to ply their trade but also full fill the domestic human resource need. Investment remains one of the essential elements in reduction of unemployment and hence economic growth.

REFERENCE

- Aghion, P. and Howitt, P. (1994), "Growth and Unemployment", *The review of Economic Studies*, Vol. 61 No.3, pp 447-494
- Apel, M. and Jansson, P. (1999), "A Theory-Consistent System Approach for Estimating Potential Output and The NAIRU", *Economic Letters*, Vol. 64, pp. 271-275.
- Arewa, A. and Nwakanma, P. C. (2012), Potential-real gdp and growth process of nigerian economy: An empirical re-evaluation of okun's law. *European Scientific Journal*,8(9): 25-33.
- Attfield, C. L. F. and Silverstone, B. (1998), "Okun's Law, Cointegration and Gap Variables", *Journal of Macroeconomics*, Vol.20, No. 3, pp. 625-637.
- Bean, C. R. and Pissaride, C. A. (1993), "Unemployment Consumption and Growth" *European Economic Review* Vol. 37:837-859
- Biman, C. P. (1999). Economic Challenges facing the newly elected Fiji government. *Asia Pacific Press*, Australian National University.
- Chand, S. & Levantis, T. (2000). The Fiji coup: a spate of economic catastrophes, *Pacific Economic Bulletin*, 15, 27-33.
- Cuaresma, J. C. (2003), "Okun's Law Revised", *Oxford Bulletin of Economics and Statistics*, 65/4, pp. 439-451.
- Daveri, F. and Tabellini, G. (2000), "Unemployment, Growth and Taxation in Industrial Countries". *Economic Policy* Vol.30, 49-88
- Fiji Bureau of Statistics, 2014. Unpublished Data File, Suva
- Freeman, D. G. (2001) "Panel Test of Okun's Law for ten Industrial countries: 1958-1998" *Western Economic Association International* Vol. 39 No. 4 pp511-523
- Gordon, R. J. (1984), "Unemployment and Potential Output in the 1980s", *Brookings Papers on Economic Activity*, No:2, pp. 537-568.
- Gounder, R. (2002) Political and Economic Freedom, Fiscal Policy and Growth Nexus: Some Empirical Results for Fiji, *Contemporary Economic Policy*, vol. 20, pp. 234-245.
- Harris, R. & Silverstone, B (2001), "Testing for Asymmetry in Okun's Law: Cross-Country Comparison", *Economics Bulletin*, Vol. 5, No. 2, pp. 1-13.
- Huang, HC, & Yeh, CC (2013), "Okun's Law in Panels of Countries and States", *Applied Economics*, 45, Routledge, Taylor & Francis Group, pp. 191-199.
- Huang, HC & Lin, SC (2008), "Smooth-Time-Varying Okun's Coefficients", *Economic Modelling*, Vol. 25, pp.363-375.
- International Labour Organisation (2011). Social Protection Floor for a fair and inclusive globalisation. *ILO*, Geneva.
- Johansen, S. (1988) Statistical analysis of co-integration vectors. *Journal of Economic Dynamics and Control* 12(2-3): 231-254. Available from [http://dx.doi.org/10.1016/0165-1889\(88\)90041-3](http://dx.doi.org/10.1016/0165-1889(88)90041-3).
- Johansen, S. & Juselius, K. (1990). Maximum likelihood estimation and inference on co-integration with applications for the demand for money. *Oxford Bulletin of Economics and Statistics*, 52(2): 169-210.
- Kremers, J., Neil, E., & Juan, D. (1992): The Power of Cointegration Tests. *Oxford Bulletin of Economics and Statistics*, 54:325-348.
- Lal, I., Sulaiman, D, Jalil, M. A. & Hussain, A. (2010), Test of okun's law in some asian countries:Cointegration approach. *European Journal of Scientific Research*, 40(1): 73-80. Available from <http://www.eurojournals.com/ejsr.htm>.
- Langot, F. & Moreno-Galbis, E. (2008), "Does the Growth Process Discriminate against Older workers? *GAINS Working Paper*.

- Lee, J. (2000), "The Robustness of Okun's Law: Evidence from OECD Countries", *Journal of Macroeconomics*, Vol.22, No.2, pp. 331-356.
- Liu, H. & Zeng, J. (2008), "Determinants of Long-run Unemployment" *Southern Economic Journal* Vol. 74 No. 3 775-793
- Loria, E. and De Jesús, L. (2007), The robustness of okun's law: Evidence from mexico. A Quarterly validation, 1985.1–2006.4
- Malley, J. & Molana, H. (2008), "Output, Unemployment and Okun's Law: Some Evidence from the G7", *Economics Letters*, Volume 101, Issue 2, November, pp. 113-115.
- Meyer, B. & Tasci, M. (2012), "An Unstable Okun's Law, Not The Best Rule of Thumb", *Economic Commentary*, Number 2012-08, Federal Reserve Bank of Cleveland, Cleveland, Ohio, United States of America, pp.1-6.
- Moosa, I. A. (1997), "A Cross-Country Comparison of Okun's Coefficient", *Journal of Comparative Economics*, No:24, ss.335-356.
- Moosa, I. (2008), "Economic Growth and Unemployment in Arab Countries: Is Okun's Law Valid?" *Proceeding of the International Conference on the Unemployment Crisis in the Arab Countries, Cairo-Egypt*, March 17-18, 2008, 1-19
- Moreno-Galbis, E. (2012), "The Impact of TFP Growth on the Unemployment Rate: Does on-the-job Training matter?" *European Economic Review*, Vol. 56 1692-1713.
- Narayan, P. K. & Prasad, B. C., 2007. The Long-run Impact of Coups on Fiji's Economy: Evidence from a Computable General Equilibrium Model, *Journal of International Development*, 19, 149-160.
- Narsey, W. (2008) The incidence of poverty and the poverty gap in Fiji: unpalatable facts for ethno-centric political parties, *Pacific Economic Bulletin*, 23, 70-81.
- Okun, A. M. (1962) potential GNP: Its Measurement and Significance. *American Statistical Association, Proceedings of the Business and Economic Section* 98-103
- Palley, T. I. (1993), "Okun's Law and the Asymmetric and Changing Cyclical Behaviour of the USA Economy", *International Review of applied Economics*, Vol. 7, Issue 2, pp. 144-162.
- Pissaride, C. A. (2000), "Equilibrium Unemployment Theory" 2nd ed, Cambridge MA; MIT Press.
- Prachowny, M. F. J. (1993), "Okun's Law: Theoretical Foundations and Revised Estimates", *The Review of Economics and Statistics*, Vol:75, No.2, pp. 331-336.
- Reddy, M. (1997) Devaluation and economic stimulation: the Fiji economy post-coup, *Pacific Economic Bulletin*, 12
- Rezitis, A. & Apergis, N. (2003) An examination of okun's law: Evidence from regional areas in Greece. *Applied Economics*, 35(10): 1147-1151. Available from <http://www.tandf.co.uk/journals>.
- Rubcova, A. (2010) Okun's law: Evidence from the baltic states. *SSE Riga Student Research Papers* 2010:9(126), ISSN 1691-4643, ISBN 978-9984-842-36-3.
- Sadiku, M., Ibraimi, A. & Sadiku, L. (2015) "Econometric Estimation of the Relationship Between Unemployment and Economic Growth of FYR of Macedonia" *Procedia Economics and finance* 19(2015)69-18 Elsevier.
- Silvapulle, P. Moosa, I. A. & Silvapulle, M. J. (2004), "Asymmetry in Okun's Law", *The Canadian Journal of Economics*, Vol. 37, No. 2, pp. 353-374.
- Smith, G. (1974), "Okun's Law Revisited", Cowles Foundation for Research in Economic, *Cowles Foundation Discussion Paper* No. 380, pp. 1-31.
- Sogner, L. & Stiassny, A. (2002), "An analysis on the Structural Stability of Okun's law-A cross country study" *Applied Economic Letters* Vol. 34 (14) 1775-1785

- Stober, E. O. (2015), "Unemployment Scourge: Rising to the Nigerian Challenge", *The Romanian Economic Journal*, XVIII No.56 pp181-200.
- Stober, E. O. (2015), "The Validity of Okun's Law: An Assessment of United Kingdom's Unemployment-Output Relation" *International Journal of Economic Practices and Theories*, Vol 5 No. 1 pp 10-15
- United Nations Economic and Social Commission for Asia and the Pacific (2013). Economic and Social Survey of Asia and the Pacific, ESCAP, Bangkok, Thailand.
- Villaverde, J. and Maza, A. (2009) The robustness of okun's law in spain, 1980-2004:Regional evidence. *Journal of Policy Modelling* 31(2): 289-297. Available from <http://www.elsevier.com/locate/jpm>.
- World Bank. 2014. World Development Indicators, World Bank, Washington, D.C.
- Zagler, M. (2003) A vector error correction model of economic growth and unemployment in major european countries and an analysis of okun's law. *Applied Econometrics and International Development*, AEEADE, 3(3): 93-118. Available from <http://www.usc.es/economet/ea.htm>.