MODELLING THE RELATIONSHIP BETWEEN DEFENCE BURDEN AND ECONOMIC GROWTH FOR FIJI ISLANDS

By

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Declaration of Originality

Statement by Author

This work contains no material which has been accepted for award of any other degree or diploma in any other University or other tertiary institution and to the best of my knowledge and belief, contains no previous published or written material by any other person, except where due reference has been made in the text.

Signed....BS..... Date: Thursday, July 2, 2008

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Statement by Supervisor

I hereby confirm that the work contained in this thesis is the work of Baljeet Singh unless otherwise stated.

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Abstract

This thesis examines the relationship between defense burden and economic growth for Fiji. This relationship is modeled within a multivariate framework by including labour force and capital stock in the model. It uses the recently developed bounds testing approach to cointegration and find that there is a long run relationship among the variables when GDP is the endogenous variable. Normalizing on GDP and using two different estimators, it is found that in the long run defense burden have a negative impact while both labour force and capital stock have positive impact on GDP. Finally using Granger causality test, finds evidence of positive impact of labour force in the short run, while capital stock and defense burden do not have any significant impact in the short run. The finding is consistent with Classical school of thoughts, leading to derive some policy implication.

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List of Abbreviations and Acronyms

ARDL	Autoregressive Distributive Lag
EEZ	Exclusive Economic Zone
MFO	Multinational Force and Observers
MSG	Melanesian Spearhead Group
OLS	Ordinary Least Square
PACER	Pacific Closer Economic Relations
PKOs	Peace Keeping Operation
PICTA	Pacific Islands Countries Trade Agreement
RAMSI	Regional Assistance Mission to Solomon Islands
RFMF	Republic of Fiji Military Forces
UN	United Nations
UNDOF	UN Disengagement Observer Force
UNIFIL	United Nations Interim Force in Lebanon
UNIKOM	United Nations Iraq Kuwait Observation Mission
UNOSOM	United Nations Operations in Somalia
UNTAET	UN Transition Administration in East Timor
TCC	Troop Contributing Countries
TFC	Textile, Footwear and Clothing Industry
WTO	World Trade Organisation

Chapter 1: Introduction

1.0 Introduction

There has been considerable debate over the economic effects of defense spending on economic growth since the contribution by Benoit (1973, 1978), who suggested that military spending and development went hand in hand. This led to considerable research activity using econometric analysis, which improved on the approach taken by Benoit and has tended to produced mixed and conflicting results. Cross-section growth regression has been used to assess the relationship between military spending and economic growth. The evidence that has emerged was mixed and subject to criticism due to the use of inappropriate empirical techniques. For example Benoit (1973, 1978) used Spearman rank order correlation and regression to show that military spending positively affected economic growth in the sample of 44 less developed countries between 1950 and 1965. However, most of the other studies found a negative effect of the defense spending either directly (Annez, Fiani and Taylor, 1984, Lim, 1983) or indirectly through their negative impact on savings, (Deger & Smith, 1983) investment, (Deger & Sen, 1983) or exports. Rothschild (1977), Biwas and Ram (1986) found no consistent, statistically significant connection between military spending and economic growth. Aware of the severe pitfalls of cross-section analysis, Dakurah, Davis and Sampath (2005) used cointegration and error correction models to study the causal relationship between the military spending and economic growth for 62 countries and found no such relationship between military spending and growth among these countries.

Fiji is among the small Island countries that have received little attention in the empirical literature on the relationship between military expenditure and economic growth, where the role of the military force and hence military expenditure has grown substantially over the last

couple of decades. Almost all the empirical research is concerned with examining the defense spending and economic growth relationship for large developing and developed countries. Fiji's case is unique for a number of reasons; none much popular are the fact that Fiji is a small, open economy with a population of around 0.8 million. Fiji also has the largest military force in the South Pacific Island region while facing minimum threat from external military forces. Moreover, due to the long standing political conflict in Fiji, the military burden proxied by share of government spending devoted to military expenditure, is quite high for a small island economy. Over the last two decades, governments have undertaken some fiscal adjustments; however, military expenditure has remained high. Given the significant role played by the military, especially in terms of finance allocated to military, it is important to identify the economic impact of military expenditure on the Fijian economy. While some studies have questioned the growing size of the defense burden in Fiji, there has not been any significant investigation of the defense burden-growth nexus.

Second, given the importance for policy it is imperative to establish that the results are not contingent on a particular econometric technique, for if this is the case then the empirical results are deemed unreliable. In this study, to ascertain the robustness of the long-run results, we use two different estimators, namely the ordinary least squares and the autoregressive distributed lag (ARDL) approach advocated by Pesaran and Pesaran (1997).

Third, this study makes a methodological contribution. The bounds testing approach to cointegration, developed by Pesaran *et al*. (2001), within an autoregressive distributed lag (ARDL) framework. An important advantage of the ARDL approach is that it has better small sample properties than the widely used Johansen and Juselius (1988, 1990) and the Engle-Granger (1987) approaches in the GDP-military expenditure literature. Small sample size

critical values tabulated in Narayan (2005) are used. This ensures that the conclusions regarding cointegration are perfect.

1.1 Aim and objectives

This study empirically analyses the defense-growth nexus in Fiji over the period 1970-2003. The purpose of the study is to analyse the short term and the long term impact of the military spending on the economic growth of the Fiji islands. The other objective are follows: (1) summarise the literature on defense economy, (2), review Fiji's economy since independence, (3) analyse the structure and contribution of the Fiji military force and (4) to examine whether defense burden (proxied by military expenditure as share of GDP) significantly impacted Fiji's economic growth. Empirical analysis is limited to the direct impacts of military expenditure on economic growth. It does not cover indirect effects of military expenditure on economic growth such as, its effects on national debt, and other social expenditure. The analysis also do not analyse the effects of military coup on economic growth.

1.2 Data and methodology

This study uses the bounds testing approach to cointegration, developed by Pesaran *et al*. (2001), within an autoregressive distributed lag (ARDL) framework and the Engle-Granger (1987) approach. The four variables used in this study, namely real GDP, real military expenditures, labour force and capital stock contain annual observations for the period 1970-2003. All data were obtained from the *Reserve Bank of Fiji Quarterly Reviews* published by the Reserve Bank of Fiji, *Budget estimates* published by government of Fiji, and the *Current Economic Statistics and employment survey* published by the Fiji Islands Bureau of Statistics.

1.3 Chapter Outline

The structure of this study is as follows: chapter 2 provides a review of the relevant literature on defense economics, outlining emergence of the defense economics, theoretical and empirical evidence on defense-growth nexus. A review of burgeoning literature addressing the defense-welfare trade off is also undertaken. Chapter 3 discusses the structure and contribution of the defense sector of the Fijian economy. Chapter 4 presents overview of Fiji's economy over the period 1970-2006 in terms of economic growth, labour market, trade, investment, savings, and public sector finance. Chapter 5 makes empirical contribution to the knowledge on defense economy. The defense growth model, data employed, Bounds testing approach and empirical results for defense expenditure and growth nexus in Fiji over the period 1970-2003 are presented. A detailed discussion of the results and a comparison to existing studies in the literature is provided. The study concludes in chapter 6 by summarizing the empirical findings and presenting the overall findings and policy implication for Fiji

Chapter 2: **The Economics of Defense**

2.0 Emergence of Defense Economics

The tripartite view of the political responsibility of government can be traced back to the time of Adam Smith and well before him. Adam Smith (1963) devoted an entire chapter on the tripartite view of the political responsibility of the government. Adam Smith (1963, p231) argued:

> "…The sovereign has only three duties to attend to; three duties of great importance, indeed, but plain and intelligible to common understanding:
>
> I. The duty of protecting the society from the violence and invasion of other independent societies;
>
> II. The duty of protecting, as far as possible, every member of the society from injustice or oppression of every other member of it, or the duty of establishing an exact administration of justice; and
>
> III. The duty of erecting and maintaining certain public works and public institution…"

Since then the Tripartite view of the political responsibility has received much attention. For instance Rostow (1971) focused on the tripartite view of the responsibility of the government to examine the growth of the modern society. He stated that governments face "an ever-shifting intermediate balance" among what he refers to as "eternal triangle of competing imperative", security, welfare and constitutional order (Rostow, 1971, p9-10).

In his work Rostow realizes the conflicting pressure which security, welfare and constitutional order imposes on the government. "There is double balancing built into this view of the art of politics" Rostow (1971). "It is not only likely that the imperative of security, welfare and constitutional order will clash among themselves, but each involves potential conflict and choice" (Rostow, pxi). Rostow states that the judgment of the government is ultimately centered upon "the appropriateness of the sovereign's disposition in three directions: the balance it strikes in policy; the demand it makes of the people to carry out the policy; and the way it distributes the limited resources available to it among the three tasks"(Rostow, p.347).

During the 1960s and 1970s, emphasis was given to social welfare in public priorities at the cost of the defense spending. For instance Morse (1974, p.159) noted that as "society became more highly industrialized and as new demands were placed on the government, the relative priority of security and administrative expenditure should be expected to fall, while other sorts of allocations should rise". Similar view was also shared in Sprout and Sprout's (1968) study. They also observed priority shift from military spending to social welfare spending. Likewise Inglehart (1977) observed that strong defense expenditure was given the least priority out of 12 goals for publics in ten European countries. His study found that more emphasis was given to things such as stable economy, fighting crime and beautification of the cities.

However, after mid 1970s and early 1980s studies found a shift in public priorities in favor of the defense spending. A major increase in defense expenditure was experienced in the United States, Britain, France and Canada. Many saw this shift in the public priorities as a dangerous trend. Eichemberg (1984, p192) in his study accessing "The expenditure and revenue effects of defense spending in the Federal Republic of Germany" notes that "For supporters and the clients of social programs, increasing international tensions and call for higher defense

spending raises the prospect of cuts in social programs. External requirements they fear, may force a gun or butter trade off to the detriment of poor, the retired and other beneficiaries of the social policies". The changing trend in the public priorities in favor of defense spending opens a new debate and research examining the defense and welfare balance. Jenkins (1982, p. ix) suggested that

> " Since the resources of the society in the 1980's may continue to be severely limited and since financial constraints will reduce freedom of choice, the disagreement between those who advocate more defence spending and those who prefer more welfare spending is likely to continue over next decade".

Kennedy (1987) in "The rise and fall of the great powers" notes that the policy makers have to strike a balance between rising cost of arms not only against proactive investment but also growing social welfare demand of the society. With regards to tripartite view of the function of the government as earlier suggested by Smith (1969) and Rostow (1971), Kennedy (1987, p 445-6) states that:

> "The feat demanded of most if not all governing bodies as the world heads towards the twenty-first century is a threefold one: simultaneously to provide military security ….. for its national interests, and to satisfy the socioeconomic needs of its citizenry, and to ensure sustained growth, this last being essential for the positive purpose of affording the required guns and butter at the present, and for the negative purpose of avoiding a relative economic decline which hurt the people's military and security in the future"

These concerns over policy direction have been reflected in a significant number of studies examining the defense welfare balance-giving rise to two prevalent lines of theory. Classical

school of thought contends that an increase in military expenditure is likely to trade off non-military expenditure but it may also retard economic growth, while the Keynesian school of thought argues that defense burden may generate economic growth by increasing demand for goods and services hence investment.

2.1 Defense growth theory

The classical school of thought contends that defense burden retards economic growth as the cost of the increased defense spending not only includes the current consumption of social goods and services forgone but also greater economic growth that could have been achieved with increased investment in physical and human capital. They argue that higher military spending implies a lower level of private investment and domestic savings, and lower consumption due to lower aggregate demand. This can be specifically explained as follows. A higher level of military spending will lead to an increase in the interest rate, which will crowd out the private investment. With subdued investment levels, Chowdhury (1991) suggests that there will be lower quantity and quality of capital stock accumulation.

Technological progress and capital creation is closely associated with savings and investment. Additional savings help to create new machines, with more efficient technology embodied in them, thus savings not only means more capital stock but better capital stock. Defense spending influences saving through three main channels: time preference, government taxation, and inflation. Time preference affects saving through three ways. Firstly, if the defense spending is for the national security and to protect country from external and internal threats, then the country will enjoy a high level of political and economical stability and hence production will take place in an orderly fashion. This will improve people's time preference

for consumption and saving. Thus, marginal propensity to save will increase. However, if the national military is involved in an arms race with the bordering country, it will heighten insecurity and time preference for consumption and saving will increase and hence the marginal propensity to save will be eroded. Secondly, defense spending affects marginal propensity to save through budgetary trade off. An increased defense spending financed at the expense of an other sector of the economy may result in resources being diverted from sectors of government, which form the "social wage" such as health, education and infrastructure. Given the fact that most of these economies are underdeveloped and lack of resistance from political institutions, government will be able to implement its policies.(Deger, 2001) A partial withdrawal of subsidy by state from basic services means that ordinary public will have to pay more for this service, hence their marginal propensity to save will decline.

Apart from time preference, defense spending is likely to influence saving through inflationary processes. A rise in defense spending will generate inflation, and marginal propensity to save will increase and hence it will stimulate economic growth (Deger and Smith, 1983). On the other hand, increased expected inflation might cause a rise in the current consumption, capital outflow and investment in less priority sectors with no potential to cause economic growth.

Moreover, since defense spending is government expenditure, any increase in defense spending results in either a heavy tax of bigger budget deficit or both. This leads to a reduced ability to save by the private or public sector. Hence, it can be argued that defense spending affects savings through various processes, which is likely to influence investment and economic growth. The investment crowding out effect of the military expenditure is stronger from this point of the view. This is likely to reduce a country's productive capacity.

The effect, if significant, would be particularly important where military spending has a higher import-content, thus reducing the share of import of capital goods and intermediate products required for civilian investment. Since the military sector is relatively unproductive – in the sense of contributing to measured GDP, a shift of resource to that sector of the economy will reduce economic growth.

In contrast the other school of thought contends that an increase in the military burden stimulates demand, increases purchasing power and national output, and creates positive externalities. For instance Benoit (1973, 1978) found a positive impact of defense spending on developing countries. In his thesis, Benoit outlines a number of reasons as to why defense spending particularly in developing countries may course economic growth. Benoit (1973, p276) postulates that "… higher defense burden stimulates growth, at least to the extent of fully offsetting any adverse growth effect that defense expenditure may have had." Benoit (1973) argues that a positive return from defense burden is possible in developing countries as any expenditure that is not put to defense is very unlikely to be invested in any highly productive activities. In developing countries, consumption expenditure forms the major portion of the total government spending, and hence these expenditures are not likely to yield any returns. On the other hand, social expenditures are either badly managed or they add more to consumer satisfaction, hardly adding anything to future production. In such situations, defense spending which is not intended to stimulate economic growth, may infact do so.

Furthermore, if aggregate demand is initially inadequate relative to potential supply, the extra demand generated by the defense sector may be met by increased utilization of the capital stock, reducing resource cost and greater utilization of the labor force which in turn causes economic growth. An increase in the demand for goods and services allows for economies of

scale, giving rise to the profit of the individual firms which raises the investment, and ultimately leads to increased growth rates. The coercive power provided by a strong military may enable the state to increase the rate of exploitation of available resources. Surplus labor may be mobilized, raw material production developed in the face of opposition, agrarian surplus transferred to industry, consumption restricted, industrial disputes suppressed and the rate of work increased. Without the organized force provided by the military, the state might not have the power to mobilize or exploit potential resources to the same extent.

Defense programmes in many developing countries provide; housing, food, and other basic necessities to a significant proportion of the population that would otherwise have to be provided by the civilian economy, and in most of these cases, by doing so it makes an important contribution to general level of nutrition of the people involved.

Defense spending is likely to influence economic growth through spin off effect. This is realized either through introduction of new technology or human capital development. Firstly, military spending through research and development may itself encourage technological progress and introduction of new technologies, through which infrastructure such as roads, power supplies, or communication services are developed with consequent effect on productivity. The civilian sector often receives benefits of technology spillover. For example, a radar developed under a US navy contract and then rejected for military use was adapted for use in hospitals to closely monitor heartbeats without being attached to the skin, making it particular useful in therapy for burn victims (Gold 1990).

Moreover, in developing countries the military may provide a human capital formation (Deger and Sen, 1983, Benoit, 1973, Heo 1998, Weede, 1986). According to Benoit (1973) the

military not only subsidizes education but also provides vocational and technical training, which may be used in private sectors later. For example, technicians and health professionals trained in the military may provide services to the private sector. Some people also get education directly from military organizations or through subsidies for civilian education from military, which improves the quality of human capital. In addition, the discipline and attitude acquired by being part of the military force and the research and development undertaken by the military are likely to have positive externality effects on the society. Military institutions teach discipline, that is to obey orders for enlisted men. Such discipline and attitude acquired is a very useful tool for carrying out daily activities in civilian life. The experience of deprivation and combat training prepares individuals to better bear the life long assembly line than otherwise. The skills and discipline attained at military training and service makes important contribution to human capital hence economic growth. The education and social discipline provided by military force have two fold positive impact: first, it stimulates growth; and second it even improves income distribution.

Henceforth, in developing countries school systems suffer from many drawbacks, such as poor curriculum, lack of resources and lack of commitment from students. At times there are huge disparities in the kind of practical skills required in civilian jobs and types of knowledge imparted by the school systems as well. Many students in some of the areas are not able to access formal schools as either schools are not available or students don't have the resources to do so. Therefore, these young men are deprived from formal school; military institutions play an important role in teaching them some useful problem solving techniques, effective communication skills, self-discipline and technical skills. Officers of all ranks are required to learn some rudimentary technical understanding which becomes a valuable asset once they leave the force.

This is one of the many indirect effects that the military expenditure may have on the level of economic growth. Given that developing countries are generally characterized by high unemployment rates, the military, because it trains the labor force, provides a source of employment.

The military is also likely to provide the essential security required for economic growth. A strong military will not only provide a secure economic environment, it will also provide a strong position for the national leadership in negotiating with other countries on economic, trade, security matters (Ram 1995). Further more, Deger (1986) argues that military spending may stimulate economic growth through spin-off effects and through a creation of socio-economic structures conducive to growth. Deger and Smith (1983) suggest that

> "Military expenditure may be necessary to guarantee the condition under which production can proceed through military influence on administration, social structure, and internal security. Military forces may be necessary to prevent disintegrated internal conflicts, they may disrupt traditional pattern of political and social organization and promulgate a modernizing ideology. All of these aspects may have an effect on growth."

On the other hand many writers believe that the military promotes modernization (Benoit, 1973, Weede 1986). In under developed societies, the military remains the most modern institution and thus helps to create sociopolitical structures that are most conducive to economic growth. "The closed character of the military and hierarchical character of military life may actually ease socialization into modern roles for young men from humble and traditional backgrounds" (Weede 1986, p229). Some of the modern values inculcated into these young men include; living by the clock, receiving and transmitting precise instructions;

earning, spending and saving money, understanding and working with bureaucracy, traveling in modern transports such as planes and others. It also encourages these young men to forgo existing customs and tradition and prepares them to accept the modern culture and tradition. It also helps in bridging the gap between various ethnic, cultural and religious groups.

Military institutions may also make an important contribution to nation building by instilling self pride, depicting itself as a nation and recruiting a significant proportion of the male population in a highly discipline institution responsible for nation protection.

The military provides security from external forces. This provides investor confidence which boosts production and accumulation. The military may provide significant links to the super power "and be instrumental in orchestrating the transfer of technology and the provision of aid, both military and civilian" (Deger and Smith, 1983). In cases where the military attracts foreign aid, the positive effects of foreign aid offset the negative effects.

2.3 Empirical evidence on defense growth relationship

Several empirical studies on defense spending have produced mixed and conflicting evidence hence either supporting one side of the argument or both, while some studies have not found any causality running from military spending to economic growth. For instance Benoit (1973) presented a positive cross-country correlation between military expenditure and economic growth in less developed countries. This finding has attracted much empirical research. In what follows, a brief review of some of these studies is provided.

Chowdhury (1991) examined Granger causality between defense spending and economic growth for 55 less developed countries. He found no evidence of any causal relationship between defense spending and economic growth for 30 out of 55 countries, unidirectional causality running from economic growth to defense spending for 22 countries, and bidirectional causality for 3 countries. Generally, Chowdhury (1991) found inconsistent and conflicting causal relations between the two variables across the countries; however, for the majority of the countries there was no causal relation. He makes two conclusions: (1) that one cannot support the view that defense spending causes economic growth; and (2) that whether defense spending has a negative or a positive impact on economic growth depends on the development stage of that particular country.

Kusi (1994) examined causality between economic growth and defense spending for 77 developing countries using annual time series data. His findings showed a lack of consistent causal relationship between military spending and economic growth across the different countries. For instance, there was no evidence on any causal relationship for 62 out of the 77 countries. For 4 countries, there was positive causality running from defense spending to economic growth, while for 3 countries there was negative causality running from defense spending to economic growth. Meanwhile, for 7 countries a unidirectional causality from economic growth to defense spending was found. Hence, his study like Chowdhury (1991), reached no consensus.

Kollias, Manolas and Paleologous (2004) examined causality between military expenditure and economic growth for 15 European Union member countries for the period 1961-2001. They also found mixed results. For instance, they found no causal relationship between defense spending and economic growth for 5 out of 15 countries, bidirectional causality for 3

countries, and causality running from economic growth to military spending for 6 countries. Dakurah, Davis and Sampath (2001) examined the causal relationship between military spending and economic growth for 68 countries for the period 1975-1995. Their findings were consistent with Chowdhury (1991), Kusi (1994) and Kollias, Manolas and Paleologous (2004), in that they fail to reach a consensus view on the direction of causality. For instance, they found unidirectional causality from defense expenditure to economic growth or vice-versa for 23 out of 62 countries, and no evidence of any causal relationship for 18 countries.

There are a number of studies that have produced evidence of negative causality from defense spending to economic growth. For instance, Deger and Smith (1983) examined the relationship between military spending and economic growth in less developed countries using cross section evidence in macro statistical framework. They noted that military expenditure had a small positive impact on the economic growth through the modernizing effects it created offsetting a bigger impact through savings. Overall, the military expenditure had a negative impact on economic growth. Similarly, Georgious and Smith (1983) examined the effects of military expenditure on OECD economies. They found a negative impact of defense spending on investment and observed that the spin-off effect was relatively small. Deger (1986a) examined the impact of military expenditure on economic growth. He found a negative impact of military expenditure on economic performance. He concludes that military expenditure takes resources away from the most productive sectors of the economy and fails to create any additional savings. In addition military spending depresses savings, which is harmful to economic growth.

Moreover, Ishaq and Lebovic (1987) examined the relationship between military spending and economic growth for Middle Eastern states using a pooled time series cross-sectional analysis.

They found that an increase in the military expenditure had a negative impact on the economic growth. They also found that the defense spending is strongly correlated with the basic external security needs. Similarly, Blomberg (1997) in a study "Growth, Political Instability and Defense Burden" found a negative impact of political instability on economic growth while increased defense spending reduced political instability in the country. On the other hand, military burden had a direct negative impact on growth. The study was undertaken on 70 countries over the period 1976-1982. Heo and Jr (1998) examined the impact of military expenditure and technological change on economic growth for the East Asian NICS from 1961-1990 (South Korea, Taiwan, Indonesia, Malaysia and Thailand). The study noted that generally increase in military expenditure reduced economic growth in all countries. Dunne and Vougas (1999) specifically examined the issue of causality among real output and the share of military expenditure for South Africa for the period 1964 to 1996 using counteraction analysis. They found a significant negative causality running from military spending to economic growth.

In another study, Antonakis (1999) examined the causality between military expenditure and growth for Greece from 1960-1993 in a multicultural approach. The study found a negative impact of defense spending on economic growth for the Greek economy over the period 1970 to 1994. Heckelman and Stroup (2001) in a study "Size Of The Military Sector and Economic Growth: A Panel Data Analysis of Africa and Latin America" found a non-linear impact of military spending. However, the effects turn out to be negative for high level of defense spending.

Nabe (1983) computed a rather general index of development for 26 African countries for each year from 1976 to 1996 based, inter alia, on the number of school teachers and

physicians per 1000 population, as well as government spending on education and medicals services as a percentage of GNP – and his analysis showed that military expenditure was negatively linked to both social as well as economic development. Deger (2001) examined whether the defense expenditure mobilized resources in less developed countries. The study used propensity to save as ratio of income as proxy for mobilization. He used cross-section data for 50 countries over the period 1965-1973. The study noted that overall, increased defense financing retards marginal propensity to save. Military spending reduces marginal propensity to save through all channels, that is, time preference, inflation, and even tax effect. Deger (2001) argues that since in developing countries, saving is the engine of growth, military expenditure indirectly is likely to have a negative impact on economic growth. Chang, Lai and Shieh (2002) examined "how government's resource allocation between the defense and non-defense sectors will impact both economic growth and social welfare" by building an intertemporal-optimising endogenous growth model. They found that there exists an optimal defense expenditure share to maximize the economic growth rate, but this rate is smaller than the welfare-maximizing share. They concluded that if the government wants to achieve a higher growth rate then it should not allocate more resources to defense sector, however, if it wants to maximize welfare then they should allocate more resources to defense sector. Abu-Bader and Abu-Qarn (2003) examined the causality between military spending, government expenditure and economic growth for Egypt, Israel and Syria using Vector error correction model. The study noted a negative impact of military spending for all three countries.

Boloaloa and Sy (2003) examined the impact of defense expenditure and military labour on economic growth in 18 Asians countries from 1989 to 1999. To check for consistency of the result the model is applied to four-subgroup: top military spenders, top aid recipient, top spenders and recipient and ASEAN countries. Military expenditure is evaluated using a

growth model. The study noted that impact of military spending and military labor is non-linear. The study also found that for low levels of military spending, the impact is negative, however, the negative influence reduces as military spending is increased and it turns out to be positive after some threshold level is reached. Contrarily low levels of military labour has a positive impact on the growth, however, as more and more labour is taken away from the civilian sector, it has a negative impact on growth. Loening and Reitschuler (2004) examined the defense-growth nexus for Guatemala for the period 1950 to 2001 using factor productivity approach. They found absence of any significant impact of military spending on the economic growth. They concluded that despite the fact that no significant impact of military spending was evident, one has to be mindful of the fact that the military spending itself can be detrimental to the economic growth as it trades off the resources that could otherwise be allocated to more productive sectors of the economy.

On the other hand there are a number of studies that have found evidence in support of the Keynesian school of thought. For instance, Weede (1986) examined rent seeking, military participation and economic performance in less developed country. They concluded that high military participation ratio tends to improve the growth prospect of a nation and to equalize income share. In another study, Dommen and Maizels (1988) examined the military burden in developing countries. The study was carried out on full sample of 72 developing countries and separately for the 38 in Africa. Military burden was measured in two ways; first as a share of the GDP and then as a share of the Government's total budget. The study observed that countries prone to wars had a higher defense spending than otherwise. The study also noted that countries that were ruled by military regimes had 0.4 percent lower growth rate than countries ruled by civilian governments. The study noted a significant negative impact of armed conflicts. However, the study also noted a positive relationship between military

spending as a share of Government expenditure and Economic Growth. Similarly, David and Ward (1992) in a study "Sizing Up The Peace Dividend: Economic Growth and Military Spending In The United States, 1948-1996" found that the military spending had a negative size effect on GNP while it had a positive externality effect. Furthermore, not only did military have a negative impact on the economic output, it also drained out resources from the productive civilian sector that is likely to have a positive impact on the economic growth.

Moreover, Asseery (1996) in a study "Evidence From Time Series On Militarizing The Economy: The Case of Iraq" found a positive impact of spending on economic growth. This may be the case in Iraq as military is the major employment providing sector of the economy and hence it is regarded as an engine of economic growth. Similarly, Brumm (1997) examined the long run impact of military spending on the economic growth from 1974 to 1989 for 88 countries in a cross-country empirical analysis by estimating Barro-regression and variant of that regression. He found evidence of positive correlation between growth rate of real GDP and average military expenditure as the share of GDP. Dunne and Nikolaidou (2001) investigated the relationship between military expenditure and growth for Greece, Spain and Portugal. They found that for Greece, the military expenditure had a positive effect on economic growth, while economic growth had a negative effect on military expenditure. For Spain, military spending had no impact on the economic growth, while economic growth had a negative impact on the military spending. However, no causal relation was found for Portugal.

In another study, Dunne, Perlo-freemand, and Soydan (2001) estimates growth and investment equations for a range of small industrializing economies for the period 1960-1998, using a panel data approach. Their findings showed some evidence of a negative impact of military

expenditure on growth and investment in small industrializing economies. There was no evidence of any positive effects of military expenditure on economic growth. Machair, Murboch and Sandler (1995) examined the influence of defense externalities as the defense of expenditures allies affects the nation's own defense and civilian sector in either positive or negative fashion by extending three-sector Feder-Ram model over few NATO allies from1951-1988 period. The study claims to have obtained best empirical results to date. The study observed a positive effect of defense spending on economic growth over NATO allies. Huang and Kao (2005) examined the impact of defense spending on employment in Taiwan from 1966-2002. The study employed a simple theoretical model to test the hypothesis. In the short run, the study observed significant negative impact. However, in the long run, the impact is positive though weakly significant.

Gong and Zou (2003) examined "the capital accumulation, military spending, arms accumulation, and output growth in a stochastic endogenous growth model". The analysis found higher growth in foreign military spending led to faster economic growth in the home country if the home country's intertemporal substitution elasticity in consumption was smaller, but more volatility in foreign military spending could lead to higher economic growth in the home country when its intertemporal substitution elasticity is large. Ocal, Sezgin and Yildirim (2005) in a study "Military Expenditure And Economic Growth In Middle Eastern Countries: A Dynamic Panel Data Analysis" found a positive impact of defense spending on Middle Eastern countries and Turkey as a whole. The study also noted that defense sector was more productive than the civilian sector, as the defense sector was using more sophisticated technologies than the civilian sector.

Similarly, Frederiksen and Mcnab (2000) examined the relationship between defense spending and economic growth for Malaysia for the period 1961 to 1999. They found causality running from military expenditure to GDP growth. Cauresma, Crespo and Retschuler (2003) examined the non-linear defense growth nexus on US from 1929-1999. The study noted that while there is a positive externality effect and negative size effect for low level of military expenditure, externality effect turns to be negative for high level of defense spending while no size effect is visible. The study concludes that while the various studies examining linear effect of defense spending have produced mixed and conflicting result, a non-linear study sets a new ground for examining the relationship between defense spending and economic growth

There are also a number of studies supporting both side of the argument or produced mixed results. For instance, Rasler and Thompson (1988) examined the defense burdens, capital formation and economic growth trade off for Great Britain, US, Japan, France and Germany. The result found no significant evidence of a negative trade off between defense expenditure and economic growth in case of nineteen century leader Great Britain, however a negative trade off was evident in case of France. Moreover after World War II, a negative tradeoff is evident in case of United States, but no significant tradeoff was evident in case of other four nations. Similarly, Heo (1998) examined the defense and growth relationship for 80 countries using a three-sector production function model. He used a nonlinear model, which accounted for technological progress. He, like most studies, found mixed results. For instance, he found that for 50 countries military expenditure had a negative impact on the economic growth, for 24 countries military expenditure had a positive impact on economic growth, and for 6 countries military expenditure had no significant impact on growth. Joerding (1986) examined the exogeneity of the military spending relative to economic growth for 57 LDC's between 1962 and 1977 using granger causality. He concluded that military spending is not a

strongly exogenous variable with respect to economic growth. . In another study over US, Gerace (2002) used spectral model over the sample period 1951-1997. The study noted absence of any significant relationship between defense spending and economic growth. Grease argues that impact of military expenditure varies from country to country; a no effect on the US economy can be attributed to the fact that external forces rather than domestic economic and political force unlike other countries such as Western Europe and Japan drive US military expenditure.

With regards to defense-welfare trade off, researchers in this school of thought have found mixed evidence. One school of thought believes that the defense-welfare tradeoff is caused primarily by defense draining political, technical and economic resources from existing social welfare program in order to augment defense investment. A large defense budget may cause delay in social welfare policies and programmes or they may not all be implemented because the policy makers see the cost as insupportable given present and anticipated defense spending.

Other schools of thought suggest that there is either no trade off or even a positive trade off between defense spending and other government policies. For instance, the trade off between military expenditure and social welfare would depend on the how are the skills level related to the military technology imported. If military technology demands higher skills then it will indirectly upgrade the educational level of the country. However if it draws away needed skilled manpower from civilian sector, there will be a negative trade off.

The empirical evidence on the interaction between defense spending and social welfare programs is mixed. For instance Russet (1969) found a strong negative relationship between defense expenditure and government spending on health and education for United States,

France and United Kingdom. Similarly, Frederiksen and Looney (1994), found negative trade off between military spending and human capital development for Middle East/South Asian countries. Further more Dabelko, David and MocCormick (1977) found evidence of negative trade off between military spending and education for a number of countries, however the magnitude of the impact was weak. Harris, Kelly and Pranowo (1988) in a longitudinal regression analysis for twelve Asian countries revealed little evidence of trade off between defense spending and education/health expenditure. Peroff and Podolak's (1979) study over United States concluded that when health proportion of the expenditure is very small, a trade off is less likely to occur. However, with a raise in the health share of the total expenditure, it does trade off with defense. On the other hand Caputo and David (1975) found a largely positive relationship between military spending and health and educational expenditure. Russet (1982) found no trade off between military spending and federal health and education expenditure. Adebiyi (2005) examined the interaction between public education expenditure and defense spending in Nigeria for the period 1970-2003. They found evidence of a positive relationship between defense spending and public education expenditure.

2.4 Conclusion

In summary, there exist conflicting theoretical arguments about the impact of defense spending on national output as well as tradeoff between defense and public goods. Studies have concentrated on two thoughts but the evidence is conflicting. Hence, more country specific studies need to be carried out to better understand the trade off between defense spending and economic growth for a particular setting. This study is another attempt to understand defense burden and growth relationship for Small Pacific Island Nations.

Chapter 3: Republic of Fiji Military Forces

3.0 Introduction

Today an integral part of defense is the endorsement of military forces as a legal guiding principle mechanism set up by the government of the day in pursuit of the national interest irrespective of whether the fortified forces are used internally or externally. The mechanism of defense is being used in the detection of a wide range of tasks in support of the human security needs in Fiji. These tasks include the provision of military aid to the civil government against external military intimidation, internal armed intimidation to the constitutional order and democratic indulgence, and support to the national police if the capabilities of the latter are inadequate for the task for which it is constitutionally mandated. In accordance to this, military aid to the civil community through the provision of assistance in the events of national disasters, emergency assistance, and maintenance of essential services during the period of crisis, assistance with reconstruction and development tasks and assisting demobilized soldiers with re-entry into civilian life is also provided.

The Republic of Fiji Military Forces (RFMF) plays a vital role in Fiji's overseas commitments in terms of peacekeeping duties since 1978, beginning with its commitment of providing an infantry battalion of five hundred in May 1978 to Lebanon regardless of their internal role. The RFMF has helped the Fijian economy tremendously during its peacekeeping duties through the provision of employment, financial benefits and discipline. Before 1987, the size of the RFMF forces was mostly determined by its overseas peace keeping commitment and it has also contributed enormously towards government revenue. Firstly, through the commitment towards maintaining the first Battalion, Fiji Infantry Regiment (1FIR) and

secondly, through the requirement to mobilize, train and deploy the second battalion, Fiji Infantry Regiment, for the services in Sinai Desert as part of the Multinational Force and Observers (MFO).

There has been significant growth in the republic of Fiji military forces during the last couple of decades. However, the major growth was experienced subsequent to 1987 mainly because of the increase in the size of the republic of Fiji military forces during the post 1987 coup period. Since 1987, the number of people employed in the military sector has increased from two thousand five hundred and seventy nine to three thousand five hundred and forty nine in 2002. Of these, approximately twenty-eight per cent serve in missions abroad, earning income valued at approximately thirty million Fijian dollars. The military provides employment to approximately three percent of the total labor force.

3.1 History of Republic of Fiji Military Force

The Fiji military forces origin can be traced back in time to the pre-colonial leadership of Ratu Seru Cakobau. In 1971 the Royal Fiji military force was established to assist the government, hence, exposing Fiji for the first time to modern military institution where the Royal Army familiarized Fijians with modern weapons like rifles and muskets. The Europeans established Ratu Cakobau's government with the view to ascertain a stable climate conducive to starting up European owned and managed plantation economy based on the export of agricultural commodities such as cotton and copra.

When Fiji was ceded to Britain in 1874, the Royal army was retained to protect the colonial presence, after which it was renamed as Armed Native Constabulary within two years and in

1904 it was amalgamated with civil police which left Fiji without any military force in World War I. There was no military force in Fiji during World War I, henceforth, a defense force was formed which comprised mostly Europeans and part Europeans whilst avoiding Fijians from engaging in the war. With the outbreak of World War II, there was no standing army in Fiji so when in 1940 New Zealand requested the Colonial Administration of Fiji to provide a training ground for its second New Zealand expansionary force, the government of Fiji was given impetus to gradually build a defense force. A significant expansion of the Fiji defense force was evident in 1941 when Japan entered the War. In 1942 America established its first military base in Fiji during the World War II whereby a large number of Fijians were recruited to be part of Fiji's defense force.

Subsequent to the independence, the Fiji military force inherited a small force of two hundred soldiers while they also established close links with the military establishments of Australia, New Zealand and Britain where Fijian soldiers served in British regiments and at the same time underwent training and advocated advance study at foreign staff college and training schools. By the end of 1970 the size of the military forces doubled due to additional roles assigned by the government. As of 1974 Fijian troops held annual jungle warfare maneuvers with units from New Zealand armed forces and by mid 1980s the Republic of Fiji Military Forces also ascertained close ties with US military forces. Ramification of the establishment of the rural development unit of the Fiji military engineers and naval division resulted in size of the military force further increasing to eight hundred in 1975

A turning point for the Royal Fiji military forces came in 1978 when they were assigned the additional role of international peace keeping in South Lebanon. In 1982, another infantry battalion was deployed to Sinai as part of Multinational Force Observers' peacekeeping

commitment which there after contributed to the increase in military manpower to two thousand two hundred in 1986. Military manpower tremendously increased to over five thousand in 1987, following the military coup. However this number gradually declined to three thousand five hundred in 1996. The military manpower increased to four thousand following the 2000- coup. Nonetheless, since 2002 there were gradual defense cuts as a cost saving measure. The UN also gradually reduced its presence in South Lebanon and Fiji troops were withdrawn in November in 2002.

3.2 Structure of Republic of Fiji Military Force

The functions of the Republic of Fiji Military Forces can be classified into three broad categories namely; core force, National building force and Peace keeping force. Core force is based on the main function of the Fiji military, that is, to provide defense against internal and external treat to Fiji. Core force can be further divided into Third Infantry Battalion, Logistics Support Unit, Force Training Group and Naval Squadron division.

3.2.1 Core Force Elements

The Fiji Military Force is led by the Commander in charge, assisted by a deputy and a Chief of Staff, who lead the Land Force Command and the Strategic Command respectively, and its headquarters is based at the Queen Elizabeth Barracks in Nabua, Suva.

In accordance to the Fiji Military Force, the Strategic Command is where the strategic concerns and long-term activities of the Army are carried out. Strategic command executes all negotiations with ministries concerning development in areas such as peacekeeping operations

and its sustainability, military and personal welfare and legal issues and other responsibilities concerning the military operations. Five major divisions of the Army fall under the Strategic Headquarters. These are namely the Headquarters, Land Force Command, Two FIR and Foxtrot Coy UNTAET (East Timor).

The Land Force Command, which is commanded by a Colonel, is also liable to the Commander of the Fiji Military Force for all operational aspects of the Army and is responsible for the operational aspects of the Fiji Military Force. Under the Land Force Command comes various regiments like the Logistics, Third Infantry Battalion, Engineers, Naval and the Force Training Group and under these regiments fall various units. For instance, the Force Training Group comprises the Army Training Camp in Nasinu and the Officers' Training Camp in Vatuwaqa, where officers undergo specialized training from rank of second Lieutenant to Major. Prior to the establishment of the officers Training Camp, officers undertook training abroad.

3.2.1.1 Third Infantry Battalion

Established in 1943, the Third Infantry Battalion is the largest and only peacetime Regular Force Battalion in the Fiji Military Force, which is responsible for all infantry operations within Fiji during peacetime, and it constitutes four rifle companies, a support company, a logistics company and a Battalion Headquarters company. For maintaining the army's peacekeeping commitments in different parts of the world, the battalion has always been part of the Fiji Military Infantry Personnel resource.

3.2.1.2 Logistics Support Unit

Renowned as the Headquarters Company, The Logistics Support Unit has always been of company strength. Prior to the 1987 coup, the unit increased to battalion strength sequentially to facilitate and support the expansion of the RFMF and it now functions as a Logistics Support Unit within the Republic of the Fiji Military Forces. Under this falls four sub units, namely, Transport Company, Catering Company, Maintenance Company and Medical Company and each unit is responsible for different aspects of the RFMF. For instance, the Medical Company is in charge of the military hospital in Tamavua (George Mate Medical Center) and the Maintenance Company is assigned the role of maintaining military vehicles and undertaking repair work.

3.2.1.3 Force Training Group

The major role of The Force Training Group is to identify the training needs of the RFMF and formulate appropriate training policies. It came into effect in 1970 and since then its objectives have not changed much, but on the other hand, the roles have expanded to incorporate various deployments that the RFMF has to support, which includes the training for Peacekeeping Operations (PKO) and Officer Training courses.

The core role is played by The Republic of Fiji Military School successively to accomplish the development plans and policies of the Fiji Military. Incorporated in its achievements are the establishment of the Force Training School in 1971, and in 1975, the establishment of the Naval Division of the Fiji Military, and the Engineers Unit.

3.2.1.4 Naval Squadron

Guarding against invasion from external enemies from the sea and patrolling Fiji's Exclusive Economic Zone (EEZ) are the major responsibilities of the RFMF Naval Squadron. Since there are no vessels for the Customs, Police Force and Immigration Department that have the responsibility of law enforcement at sea and since Fiji faces a lot of constraints in terms of resources, the Navy has, therefore, undertaken these tasks and added it to its normal roles of defense, fisheries control, and search and rescue.

3.2.2 Peacekeeping Force

The second largest component of the Fiji military force, a supplementary military function undertaken by the Fiji government as an expression of its foreign affairs policy, is the Peacekeeping Force.

The unit responsible for the Fiji military forces peace keeping operations with the Multi National Force Observers in Sinai is the Second Battalion. The Multinational Forces Operation was established to serve in the place of the United Nation, following Israel's withdrawal from Sinai and the inability of the United Nations to provide a peacekeeping force in the area.

The Fiji Military Forces commenced peacekeeping duties to East Timor under the UN Transition Administration in East Timor (UNTAET), in 2002 and deployed soldiers to be part of the Regional Assistance Mission to Solomon Islands (RAMSI) in 2003.

3.2.3 Nation-building force

The third component of the Fiji military force, which comprises of army engineers and naval hydrographic personnel, is the nation-building force, which specializes in national development tasks, assigned by the government, particularly in rural development projects such as building schools, community halls, upgrading roads and disaster relief projects.

Taking into consideration the changing development priorities and economic climate of the country, the strength and functions of the nation-building force are reviewed sporadically by the government.

There was substantial development of the Fiji military force in the postcolonial epoch. Auxiliary roles in peacekeeping and nation building have basically added to the increase in the size of the Fiji military force from two hundred men at independence to more than three thousand men as at 2003. Swaying the Fiji military force into the institution it is today is partly the result of the socio-economic and political climate in Fiji since independence.

3.3 Republic of Fiji Military Force Involvement in Peace keeping, Cost and Benefits.

On the basis of firm beliefs in the purpose and principles of United Nations (UN) Charter, Fiji has actively participated in UN peacekeeping efforts in different parts of the world, viewing peacekeeping as one of the most visible and constructive activities of UN. Fiji is one of the significant contributors to the peacekeeping personnel in the world. Since 1978, Fiji has participated in a number of the peacekeeping missions.

Moreover, since 1982, Fiji has provided over nine hundred peace keepers annually which is quite significant relative to its size and it ranks as one of the highest amongst one hundred Troop Contributing Countries (TCC). Fiji peace keepers have perished in their effort to maintain peace in the world while at the same time UN peace keeping has benefited Fiji peace keepers and the economy in many ways, such as, providing employment to over one thousand personnel annually over the last twenty-nine years, providing training and education to peace keepers, teaching new values and discipline, providing vast government revenue and foreign exchange and boosting the status of Fiji economy in the international community. In view of the active peace keeping role of the Fiji Military Forces, this section traces the economic benefits and costs of the peace keeping mission to Fiji military personnel as well as the economy as a whole.

As a young and small nation in 1978, Fiji's commitment to the principle of UN provided the rational and doctrinal basis for peace keeping. None other than the first Prime Minister of Fiji, Hon Ratu Sir Kamisese Mara, in 1975, encouraged discussion with UN on whether Fiji should participate in future UN sponsored programs. It was only in 1978 when an opportunity arose. UN had to set its next PKO in Lebanon. This enabled the Infantry Regiment to join UNIFIL, mandated through United Nations Resolution 425. UNIFIL was deployed under chapter six of the United Nations Charter that specifies the conclusion of disputes by peaceful means and negotiations. As mentioned in the previous section, the decision to involve the Fiji military forces in peace keeping was a directive by the government and also a political decision. Fiji deployed five hundred infantry battalion of all ranks in 1978, which was further boosted by a hundred and fifty troops, bringing the strength of the Fiji contingent to six hundred and fifty in 1979 (*see table 3.1*).

Table 3.1: Summary of Fiji Military Forces 1985-2002

Year	Estimated established Staff & expenditure on staff		Number of Staff committed to Peace Keeping duties to Lebanon and Sinai			
	Staff	Expenditure($000)	Lebanon	Sinai	Expenditure ($M)	Fees, Royalties, Sales & Reimbursements PKO ($M)
1985	2579	13772.7	628	548	11.1	13.9
1986	2588	13983.2	628	548	11.0	13.4
1987	2588	19631.2	668	508	11.0	13.9
1988	3316	14403.2	668	508	10.9	23.5
1989	5015	23442.1	831	498	8.6	17.9
1990	5015	30279.3	831	498	9.6	17.5
1991	5015	32800.7	831	498	9.6	28.7
1992	4459	37555.8	831	498	16.5	22.9
1993	4470	38700.7	649	378	16.7	30.0
1994	3921	38094.0	650	339	18.1	24.3
1995	3720	38687.4	650	339	17.2	14.3
1996	3650	39461.9	650	339	17.3	17.0
1997	3650	38645.0	588	339	14.7	17.8
1998	3420	39939.5	588	339	18.6	15.2
1999	3420	43610.8	599	330	18.6	20.2
2000	3389	52392.0	599	330	21.2	33.4
2001	3389	64806.8	599	338	19.3	17.0
2002	3549	57137.7	599	334	19.9	29.7

Source: Budget estimates and FIBOS

Moreover in 1981, Fiji was requested to assist with five hundred troops in Sinai by Multi-National Force and Observers (MFO). MFO was established by Egypt, Israel and US as an "alternative to UN forces and observers with same function and responsibilities" (Peace keeping Review, 1992). However, peacekeeping missions are an expensive exercise, which requires well-trained soldiers with appropriate equipment. Fiji's peacekeeping mission in Sinai came in the wake of generous MFO financial and technical assistance prior to their deployment. Assistance was provided in the area of messing facilities, provision of much needed training equipment, weapon and ammunitions and cash advances to help in financing of training. In 1982, a five-hundred member battalion was sent to Sinai. In 1988, the strength of Fiji contingent in UNIFIL was further built to seven hundred and twenty five while the strength in Sinai was reduced to four hundred. However, strength of contingent in UNIFIL

was reduced to six hundred and fifty while the strength in Sinai was reduced to three hundred and eighty in 1990. Apart from UNIFIL and MFO, Republic of Fiji military forces also contributed to UN and UNGOMAP since 1988, when it sent four military observers in the rank of captain and/or under major to Islamabad. The number was reduced to one in 1990 while the engagement ended in 1993. The Fiji military forces also participated in other peace keeping duties such as UNOSOM.

The involvement of the Fiji military force in United Nations Peacekeeping duties has positively contributed to the economy through various channels. In the prevalent international political context in which Fiji found itself, peace keeping provided an avenue to enhance the country's image and stature; manifest its unfaltering commitment to the UN issues of peace and security, and to humanitarian causes. Over the years, a constructive peace keeping role has brought Fiji a wide recognition and international visibility, enhancing its multilateral and bilateral ties, which has helped to positively reflect Fiji's foreign policy issues and goals.

Secondly, the peacekeeping duties have contributed to the economic growth through spin-off effects. United Nations peacekeeping engagement provides one of the most modern exposures to the military personnel. It enables its personnel to acquire specialized skills. The Fiji Military Force is involved in other peacekeeping missions across the globe since its first engagement in Lebanon in 1978. Peace keeping engagement provides technical skills and educational training necessary for peace keeping, negotiation and mediation. It has given a new face to the military forces from war fighting to peace keeping. Peace keeping engagement has encouraged Fiji military force to explore and acquire new skills, methods and techniques necessary to effectively and efficiently carry out its new role. The United Nations peace keeping engagement has further provided opportunities to the Fiji military personnel to

serve in high ranks, an opportunity that other wise would not be available. It has prepared the military officers mentally and physically to take up the challenging role of maintaining and negotiating peace. Since 1978, hundreds of the young men are recruited and trained every year to serve the UN peacekeeping mission. At the end of the service, many of these young men return to their home in villages armed with new values, attitudes and skills which enable them to effectively perform an informal leadership function within their villages either at an individual level or at group level.

Furthermore, the military officers are better able to relate to the younger people back home and provide their children with greater opportunities in the world. They are also able to better advise their children on education and discipline. Fiji's exposure to international peace keeping has encouraged younger people to take up military roles in overseas countries, for instance hundreds of the young men and women are recruited in the British army annually. Peacekeeping provides huge savings to the peacekeepers as they are paid far more than what they would have earned locally. Hence, they are able to afford better houses, better education for their children and greatly improve their financial position in the society. A study (Senibulu, 2005) has found that money saved and skills acquired from the peace keeping duties have enable many of the military personnel to set up businesses in Fiji, hence, further improving their financial position in the society. The study also noted that prior to the service, most of these military officers were struggling in the society.

Apart from providing various skills and personal benefits the United Nations peace keeping engagement has facilitated in creation of jobs. In a study (Sunday 1991) noted that over fourteen thousand young men have enlisted, received training, served overseas for a minimum period of a year and returned home over the period 1978-1998. Fiji's success and reputation

in peace keeping duties in Lebanon and Sinai has enabled further engagement of military officers in peace keeping missions in other volatile parts of the world like Zimbabwe, Afghanistan, Somalia, Iran, Bougainville, and East Timor and lately in the Solomon Islands. Over nine hundred new jobs have been provided continuously since 1982 in Lebanon and Sinai (*see table 3.1*).

The fact that in the past twenty years over fourteen thousand young men have enlisted, received training and returned home, illustrates the extent of the multiplier effect on Fiji's small economy.

Furthermore peacekeeping duties have generated millions of dollars in revenue for the Fiji government and foreign reserve. Fiji was paid an agreed average monthly rate of US$ 776 per soldier over the period 1978 to 1981 for UNIFIL mission (*see table 3.2*).

Table 3.2**: **Monthly Expenses and Reimbursement per person (F$)

	Lebanon		SinaiI	
	Costs	Revenue	Costs	Revenue
1983	749.60	839.66	893.70	1,029.51
1984	771.17	827.02	904.04	1,021.67
1985	791.95	879.35	842.97	1,213.34
1986	778.01	755.44	862.59	1,283.85
1987	718.99	1,004.32	885.74	992.50
1988	791.83	1,760.16	795.66	1,598.22
1989	1,037.55	1,409.59	894.44	1,204.45
1990	1,311.61	1,428.41	1,338.75	1,259.87
1991	1,172.80	2,444.41	1,195.34	1,254.99
1992	1,261.82	2,233.91	1,283.41	-
Average	938.53	1,363.63	955.91	1,206.49

Source : Peace keeping Review report, 1993, pg 21.

This rate was increased to US$ 1048 in 1981, which further increased to US$ 1089 in 1991 then it declined to US$ 1009.17 in 1992. A similar disbursement of monthly average of $US 950 was paid for the Sinai mission which was reduced to US$ 750 in 1990. This contributed significantly to the government revenue.

While the government has earned millions of dollars in revenue from peace keeping duties, it has been a costly exercise for the government. The United Nations peacekeeping engagement is the major contributing factor to the huge military budget. The cost was mostly associated with salaries, training and equipment. The Fiji military forces took part in five major peace keeping missions, UNIFIL, MFO, UNIKOM, UNOSOM, and OSGAP. Government was paid reimbursement on UNIFIL; MFO and OSGAP mission while no reimbursement was received on the other two missions. Table *3.3, 3.4* and *3.5* gives the summary of the financial costs and earnings of peace keeping to Fiji over the period 1981-1992 and 1978-1992 respectively. Over the period 1978-1992 disbursements from UNIFIL amounted to $129.7 million compared to an expenditure of $99.43 million over the same period which means government earned a net income of $30 million dollars. Similarly, disbursement from MFO, over the period 1982 to 1992 amounted to $67.96 million while the expenditure for the same period was $57.29 and $2.7 million was still owed to the government. From MFO government earned a net income of $13.4 million dollars.

Moreover, over the period 1993-2002, an accumulated sum of $214.09 million of reimbursement (this amount does not include any reimbursement due to government) was received from UNIFIL and MFO compared to an expenditure of $181.7 million. This means that a net revenue of $32.4 million was received from UNIFIL and MFO mission over the same period. The net revenue could be higher as reimbursement does not include any amount

that is due over the same period. Both UNIFIL and MFO significantly contributed to the government revenue.

Table 3.3 Sinai Expenditure and Reimbursements 1981 – 1992 (F $ million)

	No. of Troop Months	Total Expenditure	Cumulative Total	Reimbursement	Cumulative Total
1981		0.93	0.93	1.47	1.47
1982	4,983	4.17	5.10	2.17	3.64
1983	5,968	5.33	10.43	6.14	9.78
1984	5,951	5.38	15.81	6.08	16.68
1985	5,967	5.03	20.84	7.24	24.10
1986	5,982	5.16	26.00	7.68	31.78
1987	5,995	5.31	31.31	5.95	37.73
1988	5,575	4.38	35.69	8.91	46.64
1989	4,774	4.27	39.96	5.75	52.49
1990	4,564	6.11	46.07	5.75	58.24
1991	5,426	5.41	51.48	5.68	68.92
1992	4,527	5.81	57.29	4.04	67.96

Source : Peace keeping Review report, 1993, pg 21.

Table 3.4 Lebanon Expenditure and Reimbursements 1978 – 1992 (F $ million)

Year	No. of troop Months	Expenditure Actual	Cumulative Total	Reimbursements	Cumulative Total
1978		2.81	2.81	.30	0.30
1979		4.64	7.45	3.35	3.65
1980		4.87	12.32	4.41	8.06
1981		5.18	17.50	4.64	12.70
1982		5.58	23.08	5.13	17.83
1983		5.64	28.72	6.74	24.57
1984		5.80	34.52	6.22	30.79
1985		5.98	40.50	6.64	37.43
1986		5.86	46.36	5.69	43.12
1987		5.67	52.03	7.92	51.04
1988		6.55	58.58	14.56	65.60
1989		8.98	67.56	12.20	77.80
1990		11.23	78.79	12.23	90.03
1991		9.97	88.76	20.78	110.81
1992		10.67	99.43	18.89	129.70
Total	113,634	….	99.43	….	129.70

Source : Peace keeping Review report, 1993, pg 19.

Table 3.5:Disbursement Statement 1978 – 1992 (F$)

Year	No. of Troops	Rate Paid	Amount Received	Rate Agreed	Amount Committed	Arrears	Cumulative
1978	3,335	400	1,633,080	776	2,587,960	954,880	….
1979	7,206	500 550	3,765,050	776	5,591,856	1,826,806	2,781,686
1980	7,616	600	4,569,600	776	5,910,016	1,340,416	4,122,102
1981	7,576	800	6,060,800	1,048	7,939,648	1,878,848	6,000,950
1982	7,541	750	5,655,750	1,048	7,902,968	2,297,218	8,248,168
1983	7,524	750	5,643,000	1,048	7,885,152	2,242,152	10,490,320
1984	7,521	750	5,640,750	1,048	7,882,008	2,241,158	12,731,578
1985	7,551	750	5,663,250	1,048	7,913,448	2,250,198	14,981,776
1986	7,532	750	5,649,000	1,048	7,893,536	2,244,536	17,226,312
1987	7,886	750	5,914,500	1,048	8,264,528	2,350,028	19,576,340
1988	8,272		6,204,000	1,048	8,669,056	2,465,056	22,041,396
	Payment of Arrears	750	3,027,200				19,014,196
1989	8,655	750	6,491,250	1,048	9,070,440	2,579,190	21,593,386
1990	8,562	750	6,421,500	1,048	8,972,976	2,551,476	24,144,862
	Payment of Arrears		2,424,100				21,720,762
1991	8,501	750	6,375,750	1,048 1,089	9,084,241	2,708,491	24,429,253
1992	Payment of Arrears		7,756,800				16,672,453
	8,456	750	6,342,000	1,089	9,208,584	2,866,584	19,539,037
	Payment of Arrears		6,766,282				12,772,755
	113,734	896.86	102,003,662	1,009.17	114,776,412	112.31	12,772,755

Source : Peace keeping Review report, 1993, pg 20

Apart from reimbursement to government, each individual peacekeeper also received US$39 per month in field allowance from the sponsor. While other peacekeeping duties generate little or no reimbursement, they provide generous living and subsistence allowance to the

individual peacekeepers. In all instances, UN payments to the individual peacekeepers exceeded what the Fiji government paid for basic salaries and in allowances. Apart from benefiting individual peacekeepers, peacekeeping mission provide a very important source of foreign reserves.

The defense White paper Review of 1997 highlighted that of the total amount of $105m spent by the RFMF during 1979-1986, $87.4m went to salaries and allowances, $15.2m to operating expenses and $2.5m to capital expenses. When peacekeeping operations expenses were considered separately and taken through the same analysis over the same period, salaries and allowances averaged ninety-two percent, leaving little provision for capital expenses.

While the Fiji Military forces commitment to United Nations peacekeeping mission is a costly affair for the government of Fiji, it has positively contributed to Fiji's economy. Peacekeeping has provided an important source of revenue to the Fiji government, net income generated from the peacekeeping mission well exceeds the various costs involved (purchasing equipment, salaries etc). Apart from contributing to the government revenue peacekeeping operation has provided thousands of dollars of additional revenue to individual peacekeepers and it is one of the important sources of foreign earning. Moreover, the Fiji Military Forces' reputation in the peace keeping operation has contributed to strengthening ties with other important players in the world. The peace keeping operation has generally contributed to Fiji's economic growth.

3.4 Republic of Fiji Military force and Human capital Development

Since independence the Fiji Military force is committed to development of its officers through various training and qualifications. For instance, Force training group was established in 1971 and since then the Fiji military force has formulated various training policies based on the needs of RFMF, such as preparing officers for peace keeping deployment and providing professional training to the Fiji military force personnel. Successful implementation of the various training polices facilitated the establishment of the training school in 1971, the establishment of Naval division in 1975 and the engineering unit.

The various training provided to the military personnel better prepares, equips and enhances military skills and knowledge on the key aspect of the Fiji military forces. Officers of all ranked when enlisted in the Fiji Military Force go through further respective training. Officers are trained in some of the best defense institutes such as Centre for defense and Strategic Studies in Australia, the Command and Staff College, United Kingdom and Asia Pacific Centre for Strategic Studies in Hawaii. Officers are sent to the various training institutes based on their ranks. A total of three hundred and fifteen military officers have gone through training abroad over the last three decades, while some have attended training in some of the top institutes in defense (*see table 3.6*)

Since the establishment of the Naval division in 1975, many military officers have gone through the naval base training both locally and abroad. Military personnel in the Naval division are trained to use very sophisticated equipment for carrying out its role of surveillance. Officers are trained in the field such as engineering, information technology and marine science. Officers in the naval division have also benefited under the Defense

Cooperation programme with Australia. Many officers had opportunities to participate in numerous training programmes with the Australian defense force and civilian educational institution in Australia. Officers from all the ranks have gone through various specialized training such as economics, management, business, political science and law.

Table 3.6 RFMF training for Military courses 1970-2003

Course Name	Institution	Years	Attendance
Officer Cadet	Sandhurst	1	40
Officer Cadet	New Zealand	1	26
Officer Cadet	Australia	1	40
Staff College	New Zealand	1	26
Staff College	Australia	1	37
Staff College	Malyasia	1	26
Staff College	Pakistan	1	2
Staff College	India	1	1
Staff College	China	1	4
Staff College	Canada	1	4
Staff College	US defence Force	1	10

Source: Senibulu, (2005, pg55)

Specialized training greatly improved following the 1987 coup, as it reflected the increased military influence over the government. However, some specialized training was visible prior to the coup. The specialized training was pursued both at local institutions as well as at international institutions. A total of twenty-four officers have acquired masters level qualification, twenty-four have acquired undergraduate qualification, thirty-nine have acquired diploma while one achieve doctorate level qualification from different tertiary institutions around the world. While most of the officers pursued their qualification in 1990s, four officers completed their degree before the coup. Senibulu (2005) argues that the major reason for increased specialize training after the 1987 coup could be attributed to the fact that many military personnel felt unsecured in the force following the coup. Hence they pursued specialized qualification as a means to find employment in the civilian sector. While the military personnel pursued specialized qualifications in a wide range of field, this field of study is mostly related to key roles and functions of the military in Fiji.

The most common qualification completed by the military personnel was law where seven personnel successfully completed Bachelor of Law, three attained masters in international law, and two attained masters in International Maritime law (*see table 3.7*).

Table 3.7 ***Specialised Training taken by the RFMF (1970-2003)***

Field of Study	University	Attendees	Year
Diploma in Computing	Fiji Instititute of Technology	10	1990 onwards
Diploma in Computing	APTECH	6	1990 onwards
Diploma in Civil Engineering	Fiji Institute of Technology	15	1990 onwards
Diploma in Quantity Survey	Fiji Institute of Technology	1	1990s
Diploma in Arcitecture	Fiji Institute of Technology	2	1990s
Diploma in Mechanical Engineering	Fiji Institute of Technology	2	1990s
Diploma in Automotive Engineering	Fiji Institute of Technology	2	1990s
Diploma in Computing Engineering	Western Sydney Institute	1	2001
Bachlor of Computing Engineering	University of Western Sydney	1	2001
Bachlor of Arts in History& politics	University of the South Pacific	1	2001
Bachlor of Arts in Management	University of the South Pacific	5	1990 onwards
Bachlor of Civil engineering/ Bachlor in Construction Management	Loughborough University (UK), Australia and New Zealand	5	1990 onwards
Bachlor of Science in Marine Engineering	Australia	1	1990s
Bachlor of Laws	University of South Pacific/ Bond University	7	1987 onwards
Bachlor of Medicine and Bachlor of Surgery (MBBS)	Fiji School of Medicine	4	1980s onwards
Masters in Business Administration	Southern Cross University	2	1990 onwards
Masters in Administration	Australia	2	1990s
Masters in Wharfing/Ocean Environment	Denmark	1	1990s
Masters in International Relations and strategic studies	Lancaster University (UK)	4	1990 onwards
Master in Business Administration	Southern Cross University	1	2000
Masters in Management	Fiji National Training Council	1	2000
Maters in Management/Defence studies	University of Canberra	2	1990s
Masters in international law	Bond University	3	1990s
Masters in Maritime policy	Wollongong University	2	1990s
Masters in International Maritime law	Malta	2	1990 onwards
Doctorate in International Relations	Lancaster University	1	2000

Source: Senibulu, (2005, pg 56)

The other areas of study pursued were: Bachelor of civil engineering/construction management where five personnel attained their qualification from UK, Australia and New Zealand, Computing Engineering, Management, Administration, Wharfing/Ocean

Environment, International Relations, Marine Science and Marine Time policy. Most of the under graduate and graduate qualification were undertaken in overseas Universities, due to nature of the study as well as the fact that most of officers took training under international sponsorship. The specialized qualification attained by officers has greatly boosted the reputation of the Fiji military forces globally as well as making officers more competitive in labor market. It has also enabled them to take up posting in other key national position.

The training and qualification attained in the Fiji military forces have enabled officers to take up various civilian positions and duties after leaving the force. For instance, four military officers have held diplomatic posting for Fiji, four officers were recruited by Air Pacific as pilots, six officers have held key positions in United Nations, some have joined the private legal firms while some of them have held senior positions in the government. Some of them held ministers portfolio in some of the former governments as well as being members of the parliament, while some were unsuccessful candidates in the various elections. Some of the military officers also served as executive officers in the previous government as well as in the current government. After the 2006 coup most of the military officers have also taken up key government positions in various ministries such as key positions in the Fiji police force, Prisons Department, Ministry of Agriculture, Immigration department, as well as serving as the members of various boards.

Furthermore, most of the military officers in the Fiji military force are recruited from the subsistence rural villages and hence the military programme introduces people to modern methods and social skills (discipline, acting on instructions, spending and saving money), traveling around the country and abroad and hence gaining familiarity with manufacturing

products (buses, trucks, planes, arms), maintaining and repairing machinery and general inculcation of national values as opposed to the limited horizon of the villages.

3.5 Republic of Fiji Military Forces and Coup

Democratic states control their armed forces through a variety of legal, executive and parliamentary mechanism. The governing principle is civil supremacy over armed forces. In other words, the military is subordinates and accountable to the elected and duly appointed civilian bodies. In young democracies like Fiji, the formation and consolidation of democracy are scarcely possible if soldiers do not accept this formal arrangement.

The Republic of Fiji military forces has actively taken part in four coups in Fiji directly or indirectly. The first military coup took place in May 1987, followed by another one in September of the same year, the third one was in 2000 and the fourth one was in December 2006. All such measures were undertaken for similar reasons, only the reason for the latest coup was different. It was undertaken to free the country from corruption and racism as stated by Frankel (2007). All the other coups had only one objective, that is, to restore the political power to the Fijians as stated in Premdas (1992), Hagan(1987) and Singh(2001). However, the impact of such behaviour has been felt in the economic situation.

The 1987 coups had significant impact on the country's economy. Sugar, tourism, garments, building and construction and gold-mining sectors felt the immediate adverse effects of the two coups. These sectors were noted to be performing below their capacity. Similar impact was also felt in other two coups of 2000 and 2006. Further impact of the coup is discussed in chapter 5.

Following the 1987 coup, the Fiji military force has become a powerful actor within Fiji. It has accumulated power and resources, and subverted democracy partly because the civil society lacked capacity to engage with it. Healthy civil-military requires the empowerment of civil society to engage with defense issues; to challenge inside security expert assessment of security needs and budget justification.

Programmes should be designed to address the role of defense in democracy. The programme should cover the key elements of political process in democracy, the constitutional provision on fundamental rights and defense; the significance of the constitution as supreme law, the principle of democratic civil-military relations; respect for multicultural and multiracial diversity and gender equality.

3.6 Conclusion

Republic of Fiji military force has played an active role in the nation building both directly and indirectly. It has provided training, employment and discipline to thousands of people over the years. Furthermore, it has provided an important source of revenue to Fiji government through various peace keeping missions and has also contributed to improving financial standard of individual officers.

A detail analyse of the impacts of military coup is not discussed as the study is only interested in the direct impact of military expenditure on growth. A further analysis of the cost of military coup or military government can be undertaken in detail studies; such as political instability and economic growth where proxy for various military can be formulated and analysed against the economic growth.

Chapter 3: Background of the Fijian Economy

4.0 Overview

Fiji consists of two main islands (Viti Levu and Vanua Levu) and around 300 islands with a total land area of 18 272 square kilometers. The estimated population in 2005 stood at 827 900 with almost 52 percent living in rural areas. Fifty seven percent of the population are indigenous Fijians, thirty eight percent are Indians (descendents of Indentured Indians) and rest comprising Chinese and Europeans and others.

A former colony of Great Britain, Fiji gained independence in 1970 and chose a parliamentary system of government. Fiji is one the most populated and developed South Pacific island countries. However, four military coups have established this nation as one of the most politically unstable countries in the Pacific region.

The economy of Fiji is greatly reliant on the exploitation of the natural resources such as tourism, agriculture (primarily sugar, coconut, ginger, rice and other staple food), forestry, and fisheries and mining. Furthermore, the economy is also supported by numerous small imperatives like manufacturing trade and retail sector.

4.1 Trends in Fiji Island Economy

Over the last three decades, the economic growth of Fiji Islands has been mixed with short series of both excessive and at times sharply reduced outputs. As concluded from figure 1, during the period 1970-2003, real GDP grew at an annual rate of 3.2 percent. During the

course of first decade, after independence Fiji generally experienced a positive economic growth. This period was characterized by high levels of consumer confidence, strong labour market growth, large inflow of foreign capital and increase in investment rates and business activities. However during the 1980s a series of natural disasters, political instability and oil crisis led to a drastic reduction in the rate of economic growth. The 1987 coup further complicated this situation. The upheaval had an immediate negative effect on all sectors of the economy namely sugar, garments, tourism, building, construction, gold-mining and rapid exodus of financial and human capital. The negative growth effect of the coup is evident in the research of Singh (2005), Jayaraman and Ward (2003) and Narayan, Narayan and Prasad (2006). During the post 1987 coup period, the economy experienced a decrease in the number of hours of employment, cuts to public capital expenditure, increase in government deficit, acceleration of inflation, brain drain, and decline in the private investment.

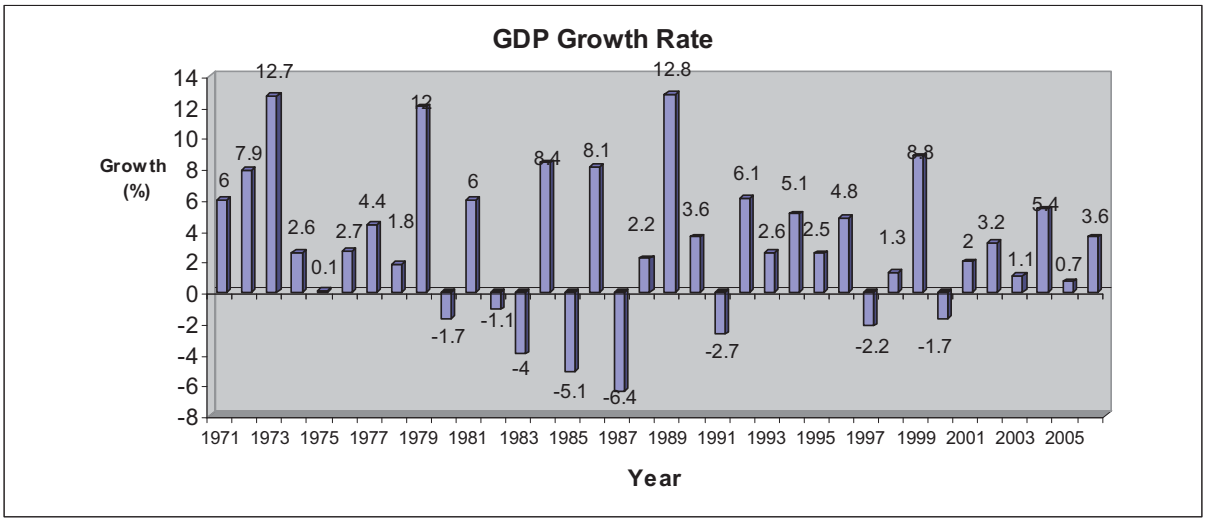
During most of the 1990s, economic growth displayed a positive increasing trend with exception to 1997 when the land tenure issue caused a contraction in growth. This burst though, beginning in 1989 and largely incessant in 1990s, is attributed to the beneficial consequence of economic policy reforms initiated after 1987 and the growth of the garment industries particularly is the result of the incentive provided through various policies.

The third coup in 2000, again immediately resulted in poor economic growth performances. Attempts by policy makers to re-established the growth rates achieved during 1970s received little success. Recent economic reforms achieved limited success due to both domestic and external factors. Domestically, Fiji's concentration on a narrow range of agricultural commodities makes the economy vulnerable to large fluctuation in weather related shifts in the primary production (Singh, 2005). Further more the impact of political instability,

particularly the four coups have has significant implication for growth. On the other hand, the small and isolated Fijian economy being an insignificant player in the world market and dependent on trade with narrow export base is vulnerable to external shocks.

Further more, the 1970s and early 1980s experienced high rates of inflation, however, economic reform undertaken in the 1990s saw significant reductions in the level of inflation. Fiji's inflation trend is in line with its major trading partners except for 1987 and 1998 as a result of the devaluation that was taken in the respective years. Dewan, Gokal and Hussein (2003) noted that 75 percent of the price changes are caused by import prices while domestic labor cost accounts for other 25 percent of the price fluctuation. Studies such as Gokal and Hanif (2004) found limited impact of this macro economic stability on economic growth. However, despite positive economic performance in late 1980s and early 1990, Fiji has failed to achieve and maintain a higher economic growth. A sluggish economic performance is problematic in terms of low standard of living and greater income inequality. It is also likely to further reduce human capital in the long run. Poor economic performance is attributed to agricultural dependence, political instability and brain drain.

Figure 4.1: Fiji's GDP growth rate, 1971-2006.



Source: *Reserve Bank of Fiji Quarterly Review*

4.2 Trade Sector Performance

Trade is essential for developing countries like Fiji because it transforms economies and reduces poverty. Fiji's has adopted a multi-faceted approach to trade and is a signatory to a number of bilateral agreements, regional trade agreements, and the World Trade Organizations (WTO) multilateral trading system. Fiji has in place reciprocal Bilateral trade agreements with Australia and New Zealand, whilst non-reciprocal agreements are held with Tonga, non-reciprocal concession is further provided to Tuvalu and Cook Islands. Fiji is also a member of regional trade agreements, such as the Melanesian Spearhead Group (MSG) Trade Agreement, the Pacific Island Countries Trade agreement (PICTA), and the Pacific Closer Economic Relations (PACER) which grant specific privileges and immunities to signatories.

Primary exports such as sugar, gold, marine products and other agricultural produce are important export commodities for Fiji and have contributed about 60-65% of total export. During the 1970s and 1980s the main priority of government policy was to promote agricultural development through commodity export and develop necessary human resource (Central planning office: 1971, 1975). Primary export continues to make a significant portion of the export with Fiji exporting F$215 million worth of sugar in 2006.

The sugar industry in Fiji which continues to dominate agriculture makes up 10 percent of the GDP and caters for about 12 percent of the labour force and provides livelihood to around 25perecnt of the population. The industry played a significant role in developing and building the Fijian economy before as well as after trade reform. The good fortune enjoyed by the industry can partly be attributed to a Fiji's preferential European Union market which was established under the Lome convention/Sugar protocol. The industry has benefited

significantly under sugar Protocol. The sugar price offered to Fiji under the Lome convention is 2-3 times above the world market price of sugar (Narayan 2003).

However, due to declining key performance indicators such as cane yield per hector, sugar yield per hector, tonnes of cane to tonnes of sugar, the sugarcane industry has faced several problems. These problems are further likely to worsen with declining preferential prices and expiry of land leases.

Dependence on a few primary products in a narrow market is not desirable for economic growth in the long term. The policy interest therefore has been to diversify both the product and market. The government over the last three decades recognized the importance of diversifying the sugarcane dominated economy and consequently put forward various policies including legalizing tax free trade of tourism goods and generous tax incentives

The contribution of the services sector to GDP has increased significantly since 1970. In particular, the tourism industry has developed into a major foreign exchange earner for Fiji, (*see table 4.1*) surpassing sugar in 1980s as well as it providing employment opportunities to a growing number of people. However, the coups in 1987 and 2000 caused a significant drop in the number of tourists and many airline companies discontinued services to the Fiji Islands. The government has generally recognized the potential of the tourism industry. There are numerous lucrative incentives in place to attract investment in tourism industry. These includes hotel aid and investment allowance, carry forward of losses, accelerated depreciation allowance, relaxation of work permit rules and duty concession.

The major markets are Australia, New Zealand, USA and Japan with China posed to be an important market in future. Fiji has experienced a strong resurgence in Visitor arrival over the last five years despite the major political crisis of 2000. Tourism earnings in 1999 were estimated to be at F$559 million and in 2001 had dropped to F$496 million, as the effects of the coup began to be felt (*see table 4.1*). Since the 2000 coup, the tourism industry has begun to pick up again and displays further potential for growth, which in light of the current sugarcane industry crisis is likely to be vastly important for achieving economic growth. The tourism earning was F$742 million in 2006.

The political crisis of 2006 is likely to significantly affect the visitor arrivals despite the concerted effort by the stakeholders. Although each of these development if undertaken separately does not look impressive but in aggregate indicate the great opportunities that Fiji can exploit in terms of tourism development, provided that the country quickly achieve political stability and economic stability.

Since 1987 the contribution of the manufacturing sector has improved, when the interim government soon after the military coups took steps to deregulate the economy and introduced far reaching liberalizing measures. The major manufacturing industry contributing to this improvement has been the garment industry. Since 1989 the textile, clothing and footwear industry, which was mainly geared to supplying garment to export markets, contributed to improvement in the contribution of the manufacturing sector (*see table 4.1*). Fijis TFC industry's rapid development over the 1990s has been due to several factors. The latter includes preferential treatment for the entry to various market, the country's relatively low labour cost, offer of an attractive package of fiscal incentives and the gradual contraction of industry in neighboring countries namely, Australia and New Zealand. The TFC industry has

also played an important role in attracting foreign investment, creating employment and further developing the skill base of the labour force.

Table 4.1: Sugar, tourism and garment exports of Fiji, 1980-2006

Year	Sugar	Tourism	Garment	% of GDP		
	(F$ million)	(F$ million)	(F$ million)	Sugar	Tourism	Garments
1980	174.2	108.0	0.2	18.3	11.3	0.0
1981	131.6	122.0	0.1	12.9	12.0	0.0
1982	125.1	142.0	0.2	12.1	13.8	0.0
1983	111.9	135.0	0.5	9.7	11.7	0.1
1984	110.0	161.4	0.9	9.3	13.7	0.1
1985	111.8	168.7	2.0	8.4	12.7	0.2
1986	133.7	185.0	4.8	10.1	13.9	0.4
1987	186.3	148.4	8.8	13.0	10.4	0.7
1988	198.3	186.5	30.1	12.7	12.0	2.1
1989	228.3	295.6	97.3	13.2	17.1	6.2
1990	223.7	294.6	113.7	12.9	17.0	6.6
1991	220.4	286.3	131.1	12.0	15.6	7.1
1992	221.3	328.1	116.7	11.2	16.5	5.8
1993	230.7	347.4	128.1	10.6	16.0	5.9
1994	252.2	393.0	140.9	11.0	17.1	6.2
1995	276.1	405.0	185.0	11.5	16.8	7.6
1996	301.7	415.0	189.9	11.8	16.2	7.5
1997	213.4	447.0	200.1	8.2	17.2	7.9
1998	244.2	568.0	302.8	9.5	22.1	11.9
1999	263.2	559.0	322.1	10.2	21.7	12.6
2000	237.5	414.0	332.9	9.2	16.1	13.0
2001	222.0	496.0	313.6	8.5	19.2	12.3
2002	334.4	555.0	222.9	9.5	15.9	6.3
2003	255.7	639	243.2	9.1	22.7	8.6
2004	209..2	718	226.4	7.1	24.3	7.7
2005	223.7	733	120.4	7.5	24.6	4.1
2006	215.1	742	94..9	6.9	24.0	3.1

Source: Reserve bank of Fiji

It is worth mentioning that the TFC industry was a major employer of female workers, generally ones with low literacy levels. The industry has recently been adversely impacted by political instability and loss of guaranteed access to major markets through quotas. Further more, preferential access to clothing and footwear markets in Australia is becoming less

valuable following a reductions in tariffs forcing Fiji garment firms to compete with other countries, and the expiry of the WTO agreement on all textiles and clothing in January 2005. Any hope of the revival of the industry lies in improving its competitiveness in the global market.

The discussion presented above clearly identifies the negative impact on economic growth where declines in the export capacity of the sugarcane and garment manufacturing industries have had on the nation.

4.3 Labor force

The 1970s and early 1980s is characterized by high levels of skilled labor which significantly contributed to the high levels of economic growth experienced over the same period. The political coup in 1987, however, had an immediate negative impact on the population and total labour force growth rates, as a steady stream of skilled workers left Fiji as stated by Narayan and Prasad (2004). In the years between 1989 and 1995, on average, the increase in employment was about 3.77 percent. Such huge increase in the employment was attributed to export promotion policies implemented by government. Since 1989, the textile, clothing and footwear (TFC) industry, which was mainly geared to supplying garment to export markets, contributed to increase in TFC industry, which emerged as a major contributor to the Fiji economy, besides sugar and tourism. The growth rate in labour force particularly skilled labour experienced in 1990s following improvement in growth prospect has not been sufficient to meet the current market demand and challenges Fiji encounters with regards to globalization (Gounder, 2004).

The loss of skilled workers overseas was particularly harmful to the growth of the export and investment sectors. The persistent loss of skilled workers has seriously dampened Fiji's productive capacity by reducing the countries ability to attract investment, as is reflected by the country's capital formation trends. It should also be noted that during the years of political stability and democratic rule, the country experienced positive growth (Narayan and Prasad, 2004). However the exodus of skilled labour has escalated after the 2000 coup and is not expected to settle due to unsettled political situation in the country. The unsettled labour dispute is further expected to contribute to brain drain.

4.4 Saving and Investment

A vital concern for the economy is the low investment to GDP ratio. The current level is well below what is desired with the investment to GDP ratio, declining since 1981, from a peak of around 29 percent to around 12 percent in 1994, and it remained low since there after. The average annual investment as percentage of GDP was around 21.6 over the period 1971-1975 then it increased to around 23.9 percent over the period 1976-1980. It declined to 23.3 over the period 1980-1985 and further declined to 14.28 and 14.72 percent over the period 1986-1990 and 1991-1995 respectively. It slightly picked up to 19.82 percent over the period 1996-2000 before declining to 18.54 percent over the period 2001-2005 (*see table 4.2*).

In proportion to the total investment to GDP ratio, public investment has also experienced a declining trend since 1982. Despite the worrisome trend, government has frequently shown lack of commitment to boost the public investment as the government capital expenditure has been declining over the years and less government funds are allocated to reduce government expenditure. Besides public investment, private sector investment to GDP ratio has taken a

down turn also. Private investment was as high as 13.3 percent of GDP in 1970 and nearly 14.9 percent in 1980 but shriveled to half that share (7.5 percent) in 1988 and it further worsened to a mere 3.1 percent in 2000, which is a worrisome condition. A decline in the private sector investment since 1988, is attributed to political instability in the country and the closure of various industries, such as garment and gold. Such circumstances have lowered the investor confidence and thus, succeeded in bringing down the overall investment component.

Table 4.2 Annual average Investment as % of GDP, 1971-2005.

Period	Private Investment	Public Investment	Total Investment
1971-1975	8.32	13.24	21.6
1976-1980	6.74	12.96	23.9
1981-1985	6.62	12.14	23.3
1986-1990	2.98	8.3	14.28
1991-1995	5.7	6.08	14.72
1996-2000	4.42	12.22	19.82
2000-2005	3.2	11.5	18.45

Source: Original actual data obtained from Reserve Bank Quarterly.

Partial decline in the late 1970s and 1980s can be ascribed to what is now recognized as unsustainably high level of investment expenditure. In accordance, it now appears that at this high level margin of investment spending relative to GDP, investment spending did not generate returns sufficient enough to justify the expenditure. Subsequently, in the late 1970s several hotels, office construction and national infrastructure development were undertaken as well as government industrial development was instigated. This ended either then or in early 1980s and the completion of most of the major projects since then resulted in low levels of investment. The expiry of the land leases is also constituent of the problem. Paradoxically, preceding the 2006 coup, investment in the tourism sector, commercial building projects and residential development were taking shape. In accordance, high returns on tourism sector investment and low interest rate on lending and improved efficiency of the Fiji trade and

investment also contributed to increased investment activities. Nonetheless, the investment activities have remained low following the 2006 coup.

Saving, which has an important bearing on the level of investment, has been in decline. High levels of interest rates and low levels of private credit to the private sector are the main factors that hamper financial sector's ability to finance investment and encourage savings.

4.5 AID

Like many developing countries, Fiji have been receiving development assistance (including grants, confessional loans, technical assistance and other official flows such as international fund credits). Bilateral Aid makes more than 90 percent of total with Australia and Japan the major donors *(see table 4.3*)

Table 4.3: Net ODA: Geographical Distribution of Sources (US$ Million current prices)

	1997	1998	1999	2000	2001	2002
Bilateral	39.1	35.8	38	28.7	24	31.3
Japan	16.9	19.2	20.9	15.1	12.7	18.7
Australia	13.9	11.2	11	10.7	8.5	8.6
Multilateral	4.4	0.6	-3.6	0.2	1.8	2.5
Total	44.5	36.8	34.9	29.1	286	34
(Aid per capita)						
US$	56.5	46.19	43.29	35.91	31.90	41.17
FJ$	81.57	91.77	85.29	76.43	72.63	90.04

Source: OECD (2004)

Development assistance has contributed substantially to the growth of Fiji's economy. The principal inputs have been into infrastructure, but some of the development assistance flows have probably given higher returns at the margin. Development assistance continues to assist Fiji's economy to fill skill gaps and to develop their skills by contributing to education and

training in Fiji and abroad. It is well known, however, that the entire impact of development assistance has not been positive (Lee et al. 1986). In a study Jayaraman and Choong (2007) noted that at a lower level of Aid, it has a positive impact on growth. Conversely, after sometime it exhibits a diminishing return.

4.6 Government Expenditure and Composition of Government Expenditure

The concern for the size of the government is important as apart from natural disasters, the greatest cause of hardship in many countries is failure to control the size of the government. Further more, the composition of the government expenditure reflects the policy choice of the government policy spending (Reddy, 2005).

Data on Fiji government expenditure reveal that it has been increasing over the period 1970-2002. During the early years after independence, the growth rate was as high as 20%. Such high expenditure took place as an expression of government interest to boost economic growth and provide a platform for the private investment. However, as the private sector developed over the years and started to play an important role, the growth of the government expenditure started to slow down. More over, government was forced to reduce its expenditure as it led to inefficiency in both public as well as the private sector. The first steps towards structural adjustment programmes began in 1986, with the introduction of a wage freeze, adaptation of economic policy measures to encourage fiscal discipline, and move towards restructuring other sectors. Further restructuring of the public sector was undertaken in 1990s and comprised of three main reform; first to the civil service, second to public enterprises, and finally to financial management. Poor performance of the public enterprises led to the

privatization of many of the public enterprises. Despite the restructure of the public sector, Fiji continues to have a large public sector.

4.6.1 Level of Growth of Operating and Capital Expenditure

The level of operating expenditure relative to capital expenditure is very high in Fiji. The ratio of operating expenditure to capital expenditure stood at an average of 83:17 percent. To achieve long-term sustained economic growth, an appropriate mix of operating and capital expenditure is vital (Reddy, 2005). Capital expenditure contributes to the productive capacity of the economy. The main objective of the government should be to reduce the level of the operating expenditure and increase capital expenditure. However, the Fiji government has failed to achieve the desired operating and capital expenditure mix.

The total operating expenditure consists of 'personnel emoluments' and other operating expenditure. Over the period 1981-2005, an average of 48.96 percent of total expenditure was allocated to personnel emoluments and 51.14 percent to the other operating expenditure. Personnel expenditure generally increased more or less constantly over the years, except for 1985 and 1988 when it declined by 4.85 and 7.25 percent respectively. Over the 25 year period, growth in other operating expenditure was quite significant with an annual growth of 7.48 percent.

The early 1980s experienced a significant increase in the operating expenditure while it normalized in 1985 following a wage freeze. Then again in 1988 operating expenditure increased by 10.15 percent. This was caused mainly by a 25.96 percent rise in other operating expenditure. A sharp surge in the operating expenditure was also experienced during 1990-

1994. This was mainly caused by a rise in all categories of the expenditure. The attempt to contain expenditure on salaries and wages resulted in the introduction of the zero growth policy from 1995 to 1998. However, the ministry of Health, Ministry of education and police departments were the key ministries/departments exempted during the period.

An across the board awarding of 3 percent COLA was paid in 1997, 1988 and 1999 contributed to the consistent growth in total operating expenditure. The Salary scale progressive payment of around 5 percent also contributed to the increase in total operating expenditure in 1997 and 1998. Contributing factors to the increase in operating expenditures in 2001 were the 17.8 percent increase in salaries of unestablished staff and the 13.4 percent increase in other operating expenditures. There was a 5 percent COLA payment made in the same year. Increase in unestablished staff salaries is partly due to the $17million increase in actual expenditure for capital construction from $56million in 2000 to $73million in 2001.

On the other hand, capital expenditure consists of capital construction, capital purchase, and grant and transfers. The largest proportion of this is capital construction which makes up 51% of the total capital expenditure. There is a lack of capital in Fiji, with investment at about 12 percent of the GDP. More resources need to be diverted to capital construction in order to increase the distribution and level of the economic activity.

4.6.2 Functional Classification of the Government expenditure

Government expenditure can also be classified into 5 broad categories namely general administration, social service, economic service, infrastructure and unallocable. Functional allocation of expenditure is important to ensure the efficient and effective functioning of the

government machinery (Reddy, 2005). Faced with dilemma of rising demand and insufficient resources, the state should allocate resources in such a way that it maximizes its objectives and long-term economic goals. The long-term objective of any state is to achieve a prosperous economic growth, which in turn will reduce poverty, create employment and improve the general standard of living of its people. To achieve its long-term objective, the central government should prioritise its expenditure in areas such as economic services, infrastructure development and social services (health, education, housing, social welfare and poverty reduction). However, data on Fiji government expenditure suggest otherwise. The allocation in infrastructure has declined over the years from 10 percent and 19.6 percent in the 1976-1980 periods to 12.9 percent for the 2001-2005 periods *(see table 4.4)*.

Table 4.4: Annual average Functional government expenditure (as % of total budget is given in bracket), 1976-2005

Period	General Admin	Social Services	Economic Service	Infrastructure	Unaccounted
1976-1980	157(21)	75.3	213(28)	146(19.7)	152 (20.5)
1981-1985	145(18.4)	162.8(20.7)	137 (17.5)	154(19.5)	186 (23.8)
1986-1990	162 (19.7)	210 (25.6)	82 (10.0)	107 (13.1)	258 (31.5)
1991-1995	144 (20)	246 (27.4)	74 (8.2)	126 (14.1)	265 (29.7)
1996-2000	203 (20.9)	293 (30.5)	96 (9.9)	125 (12.9)	253 (26.1)
2001-2005	225 (21.1)	375 (35.1)	98.6 (9.2)	167 (15.7)	201 (18.9)

Source: Original actual data obtained from Government Budget (Various years) Ministry of Finance and National Planning, Government of Fiji

Similarly, allocation to economic service, another important sector of the economy has remained low around 10 percent. While allocation to the administrative sector has slightly increased from 18.4 percent in 1980-1985 period to 21.1 percent in 2001-2005 period, defense sector forms the major portion of general administrative sector. The average defense share in the general administrative sector stood at around 14 percent, 19 percent, 28 percent, 25 percent and 37 percent respectively over the period 1976-1980, 1981-1985, 1986-1990, 1990-1995,

1996-2000 and 2000-2005. These figures suggest that there has been a sharp increase in defense sector as share of general administrative sector.

4.6.3 Defense Force Expenditure

After education and health sector, the defense sector receives the third highest allocation in the government budget. Defense expenditure has generally increased over the period under study. A moderate growth in military expenditure was experienced during the period 1970-1975 while, a huge growth in the defense expenditure was experienced during the period 1976-1982. Then for the next four years, generally a negative growth was noted. The growth during the period 1976-1982 was generally attributed to increased responsibility of the Fiji Military Forces in the economy. During this period, the Fiji Military Forces was assigned the task of implementation of the Government Maritime Policy through the Naval Squadron, utilizing the engineer construction squadron in the rural development, maintaining a trade training school in the interest of national development, production and maintaining light battalions for peacekeeping operation with UNIFIL, assisting civil authorities in disposal of unexploded ordnance and providing a hydrographic survey unit to implement Government development policy. In addition, a huge increase is evident in the military expenditure constant price over the periods 1987-1989. This huge rise in military expenditure followed the 1987 military coup. However, there often was slight annual decline in the military expenditure. The average annual decline was about 3 percent. A 44 percent rise in the military expenditure followed the 2000 coup and a 5 percent rise the year after. Not only did military expenditure increase in levels but it also experienced a continuous rise relative to real GDP and total government expenditure. Military expenditure as a percentage of GDP was, 0.3, 1.3, 1.6, 2.4, 2.0 and 2 .0

over the period 1970-1975, 1976-1980, 1981-1985, 1986-1990, 1991-1995,1995-2000 and 2001-2005 respectively (*see table 4.5*).

Table 4.5: Military expenditure trend, 1971-2005

Period	Average annual Military Expenditure ($M)	%of GDP	% of Government Budget
1971-1980	3.7	0.3	0.9
1981-1985	20.4	1.3	2.9
1986-1990	28.8	1.6	3.8
1991-1995	46.6	2.4	5.9
1996-2000	52.5	2.0	4.5
2001-2005	57.8	2.0	5.3

Source: Fiji Islands Bureau of Statistics – Key Statistics, Various issues, Government of Fiji

A high military expenditure following the 1987 coup has often been questioned. However, when this high defense expenditure is seen relative to other developing countries, Fiji's military allocation as a ratio of GDP is relatively low (*see table 4.6*)

Table 4.6: Military expenditure as percentage of GDP for selected countries, 1996-2004

Country	1996	1997	1998	1999	2000	2001	2002	2003	2004
Africa									
Ethiopia	1.9	3.4	6.7	10.8	9.8	6.2	4.8	4.4	3.6
Zimbabwe	3.2	3.4	2.7	4.8	4.9	3.2	2.9	2.3	3.4
Asia									
Cambodia	5.3	4.9	4.5	3.9	3.5	3.0	2.4	2.3	2.0
Pakistan	5.1	4.9	4.8	4.6	4.4	4.5	4.3	4.3	3.7
Europe									
Greece	4.5	4.6	4.8	4.8	4.9	4.6	4.2	4.1	4.2
Fiji	1.8	1.7	1.6	1.5	2.2	2.3	1.7	1.7	1.2

Source: Fiji Islands Bureau of Statistics – Key Statistics, Various issues, Government of Fiji and National Master

Given the fact that military expenditure takes 5-6 percent of the government budget, the issue that needs to be examined is whether such vast military expenditure harms or promotes

economic growth. View on impact of defense spending is mixed and controversial. The Keynesian school of thought contends that an increase in the military burden stimulates demand, increases purchases power, increases national output, and creates positive externalities while the Classical school of thought challenges that an increase in the military expenditure is likely to retard economic growth. This argument is based on the premise that a higher military spending implies a lower level of private investment and domestic savings and lower consumption due to lower aggregate demand. As debate on the impact of military expenditure remains unresolved, a country specific study needs to be carried out to ascertain country specific impact of military expenditure on economic growth as well as trade off defense spending on other key sector of the economy.

4.7 Conclusion

In this chapter, a brief over view of Fiji economy is presented with some observed stylized facts. Fiji's economy is extremely open and is heavily dependent on the resource-based sectors. Government's size is increasing year after year. While the government should be prioritizing its commitment to economy, infrastructure and social sector to achieve targeted economic growth, one specific sector in particular that have experienced a major growth is defense. However the impact of defense spending is not clear cut, therefore, government should examine carefully how it wants to allocate its spending to the military sector in future.

Chapter 5: Regression Analysis

5.0 Introduction

The foregoing discussion in chapter 3 suggests four causal relationships between economic growth and military expenditure: Unidirectional causality from military expenditure to economic growth or vise versa; bidirectional causality between the two variables; and finally, a lack of any causal relationship. This chapter will investigate evidence for any long run relationship between military expenditure and economic growth, in case of Fiji over the period 1970-2003.

5.1 Methodology

The test for relationship between defense burden and GDP in Fiji will be performed in following steps. First, we test for the order of integration in the GDP, labour force, capital stock and defense burden time series by utilizing augmented Dickey Fuller (ADF) unit root test techniques. Second, having established the order of integration in the series, we use Bounds testing approach to cointegration test for the long run relationships between the variables in question. Finally, autoregressive distributed lag (ARDL) and ordinary least square (OLS) model will be used to assess the longrun and shortrun elasticities. The causality between the variables is then inspected using Granger causality test which captures the short run relationship

5.1.1 Empirical Model

The empirical model below explores the impact of the defense burden on Fiji's economy. The study employs a multivariate modeling framework in which capital and labor are principal

determinants of output in the economy. The model includes the central variable of interest in this study, defense burden; the formulation is utilized to capture the direct effect of defense burden on Fiji's economy:

$$\ln Y = f(\ln K, \ln L, \ln ME) \qquad (1)$$

Where $\ln Y$, $\ln K$, $\ln L$ and $\ln ME$ denote output, capital stock, labour force and defense burden respectively. Following model is employed in estimation based on the above described formulation:

$$\ln Y_{it} = \alpha_{0i} + \alpha K_{1i\,it} + \alpha_{2I} \ln L_{it} + \alpha_{3i} ME_{it} + e_t \qquad (2)$$

Here, $\ln Y$ is the natural log of real output and $\ln K$ is natural log of capital stock. The data on capital stock for 1970-2003 is compiled by Rao and is obtained from him. The real capital stock series was constructed using the standard perpetual inventory approach $\ln L$ is the natural log of labor force, $\ln ME$ is military expenditure to GDP ratio.

5.1.2 Data and Unit root test

We extracted annual time series data on Fiji's GDP from International Monetary Fund's *International Financial Statistics* database and Fiji Bureau of Statistics. The data on military expenditure were obtained from government budget estimates, various issues. Data on labour force were obtained from employment survey, published by Fiji Islands Bureau of statistics. Nominal values are converted into real values by using the consumer price index. We use annual time series data for the period 1970-2003.

Unit root tests are carried to test whether the variables selected are stationary or not. An augmented Dickey Fuller (ADF) test for unit root is used to test for unit root in the levels of the variables and in their first difference. Unit root test results indicate that all the variables are non-stationary in levels and stationary in their first difference. The null hypothesis of unit root is rejected in first difference of all variables (Table 5.1). Therefore it is now plausible to apply cointegrating techniques to estimate long run relationship between output and the other variables.

Table 5.1 Unit root tests

VARIABLES	ADF		ADF
$\ln Y$	-1.7645 (-2.9571)	$\Delta \ln Y$	-7.4780 (-2.9537)
$\ln K$	-3.1622 (-3.5577)	$\Delta \ln K$	-1.9628 (-1.9517
$\ln L$	-2.4384 (-2.9540	$\Delta \ln L$	-4.9588 (-2.9604)
$\ln ME$	-1.8457 (-2.9604)	$\Delta \ln ME$	-6.2471 (-2.9604)

Notes:

1. The ADF is Augmented Dickey- Fuller test.
2. The first column is for the levels of the variables and the adjacent column is for the first difference.
3. Figures in brackets are the 5% level critical values.

5.1.3 Cointegration

To search for possible long run relationships amongst $\ln Y$, $\ln L$, $\ln ME$ and $\ln K$ we use Bounds testing procedure.

Before undertaking the Bounds testing for cointegration, we must first perform the lag specification tests. In other words, the first step in our cointegration analysis is to determine the number of lags, k, of our VAR model. Using the Schwarz Baysian Criterion and we find that 1 lag is the optimal for this exercise.

To implement the bounds testing procedure, it is essential to model Equation (2) as a conditional autoregressive distributed lag model (ARDL) as follows:

$$\Delta \ln Y_t = \alpha_0 + \theta_1 \ln Y_{t-1} + \theta_2 \ln L_{t-1} + \theta_3 \ln K_{t-1} + \theta_4 \ln ME_{t-1} + \sum_{i=1}^{n} \sigma_i \Delta \ln Y_{t-1} \qquad (3)$$
$$+ \sum_{i=1}^{n} \phi \Delta \ln L_{t-1} + \sum_{i=1}^{n} \rho \Delta \ln K_{t-1} + \sum_{i=1}^{n} \Psi \Delta \ln ME_{i=1} + \varepsilon$$

Here all variables are previously defined. The bounds test for examining evidence for a long run relationship can be conducted using either the F-test or the t-test. The F-test tests the joint significance of the coefficient on the one period lagged levels of the variables in Equation (3), that is, $H_0 : \theta_1 = \theta_2 = \theta_3 = \theta_4 = 0$ which the t-test tests the null hypothesis $H_0 : \theta_1 = 0$.

The *F* test has a non-standard distribution which depends upon; (i) whether variables included in the ARDL model are $\mathrm{I}(0)$ or $\mathrm{I}(1)$, (ii) the number of regressors, (iii) whether the ARDL model contains an intercept and/or a trend, and (iv) the sample size. Two sets of critical values (CVs) are reported in Pesaran and Pesaran (1997) and Pesaran *et al.* (2001). However, these CVs are generated for sample sizes of 500 and 1000 observations and 20,000 and 40,000 replications respectively. Narayan (2004a, 2004b) argues that exiting CVs, because they are based on large sample sizes, cannot be used for small sample sizes. For instance, he compares the critical values generated with 31 observations and the critical values reported in Pesaran *et al.* (2001) and finds that the upper bound CV at the 5 per cent significance level for 31 observations with 4 regressors is 4.73 while the corresponding CV for 1000 observations is 3.49, which is 35.5 per cent lower than the CV for 31 observations. Narayan (2004a, 2004b) generates and reports a new set of CVs for sample sizes ranging from 30 observations to 80

observations. Given the relatively small sample size in the present study (32 observations), we extract appropriate CVs from Narayan (2004a).

The asymptotic critical value bounds of the F-statistics based on equation (3) for cointegration are reported in *table 5.2*. For cointegration to exist, the value of the estimated statistic need to be higher than the upper critical value. From *table 5.2*, it can be seen that the value of the calculated F-statistics is higher than the upper bound critical value at least at 5% level, implying that we are able to reject the null hypothesis of no cointegration. This leads us to the conclusion that there is cointegration between all the variables in equation (3). This allows estimation of the model in their levels, which in this case is the natural log of the variables.

Table 5.2: Bounds F-test for Cointegration

F-Statistics	Critical Values		
	10%	5%	1%
5.03	4.2	4.9	6.9

5.1.4 Long-run and short run elasticities

Having found a long run relationship between GDP, defense burden, labour and capital for equation (3), in this section the long run elasticities are estimated. In other words, the impact of defence burden, labour force and capital on GDP for Fiji is investigated. To achieve this aim, two different estimators, namely the ordinary least squares (OLS) and the autoregressive distributed lag model are used. The application of more than one estimator is crucial in order to ascertain the robustness of the results.

The Granger representation theorem states that in the presence of a co-integrating relationship among variables, a dynamic error correction representation of the data exists. Following Engle and Granger (1987) we estimated the following models to capture the short run and the long run adjustment to equilibrium relationships:

$$\Delta \ln Y_t = \upsilon + \sum_{i=1}^{p} \vartheta_i \Delta \ln Y_{t-i} + \sum_{i=1}^{p} \kappa_i \Delta \ln L_{t-i} + \sum_{i-1}^{p} \rho \Delta ME_{t-1} + \sum_{i=1}^{p} \psi_i \Delta K_{t-i} + \pi_1 ECT_{t-1} + \varepsilon_{1t} \qquad (4)$$

In addition to the variables defined above, ECT_{t-1} is the lagged error-correction term derived from Equation (2) and ε_{1t} is a serially independent random error with mean zero and finite covariance matrix. In equation (4) the dependent variable is regressed against past values of itself and past values of other variables. The optimal lag length p in equations (4) is selected using the Schwarz Bayesian Criterion. Letting $\mathbf{M}_1 = \left(\kappa_1 + ... + \kappa_p\right)$.

Equation (4) captures both the short run and long run adjustment to equilibrium relationships between output and set of explanatory variables. The adjustments to equilibrium relationship is captured by the lagged value of the long-run error correction term, expected to be negative, reflecting how the system converges to the long-run equilibrium implied by Equations (2); convergence is assured when ECT_{t-1} is between zero and negative 1.

The long run results for equation (2) are reported in *Table 5.3*. Fairly robust results on the impact of defense burden, capital stock and labour force on GDP are found. For instance both estimators reveal that defense burden has a negative impact on GDP for Fiji; this result is statistically significant at atleast 10 percent level for both estimators. Although the magnitude of the impact ranges from negative 0.039 to negative 0.059, implying that a 1 percent increase

in defense burden will leads to between 0.039-0.059 per cent decline in GDP. On the relationship between labour force and GDP, the result is statistically significant and positive at the 5 percent level across both estimators. The results imply that a 1 percent increase in labour force leads to a 0.419-0.53 percent increase in GDP. Similarly, on the relationship between accumulated capital stock and GDP, the result is statistically significant and positive at 1 percent level for both the estimators. The results imply that 1 per cent increase in capital stock will lead to 0.221 to 0.398 per cent increase in GDP.

Table 5.3: long-run elasticities

	Constant	Trend	ln ME	ln k	ln L
OLS	0.49	0.014	-0.039	0.221	0.419
	[0.63]	[000]***	[0.082]*	[000]***	[000]***
ARDL	-2.426	0.011	-.056	0.398	0.538
	[0.045]**	[0.001]***	[0.014]**	[0.000]***	[0.000]***

Note: *** and ** denotes statistical significance at the 1 per cent level and 5 percent level respectively. * denotes significant at 10 percent level. Figures in brackets are t values.

The short run results are reported in *Table 5.4.* In the short run only labour is statistically significant and positively contributes to GDP. More importantly, the error correction term ECT_{t-1} in the short run model are all statistically significant at 1% level or better with a negative sign, confirming that a long run equilibrium relationship exists between the variables, and the high magnitude of the coefficients reflects that the adjustments to equilibrium is fairly quick.

Table 5.4: Results of Granger causality

Dependent varaible	Constant	ln ME	ln k	ln L	ECT_{t-1}
$\Delta \ln Y_t$	0.01	-0.145	0.095	0.5622	-0.795
	[0.213]	[0.534]	[0.580]	[0.000]***	[0.000]***

Note: *** 1% level. Figures in brackets are t values.

5.2 Conclusion

The goal of this chapter was to model the relationship between economic growth and defense burden. This goal is achieved by undertaking a multivariate modeling strategy through including the labour force and capital stock in the analysis. The idea of a multivariate treatment is embedded in the criticisms labeled at bivariate modeling of time series variables – one that relates to omitted variable bias. Four steps procedure is carried out. In the first step the data series – real GDP, defense burden, labour force and capital stock – is subjected to the ADF test in order to ascertain the unit root properties of the variables. The ADF test, which tests the null hypothesis of stationarity, revealed that all variables were integrated of order one. In the second step, a search for possible long run relationships among the variables by using the bounds testing approach to cointegration is undertaken. It is found that there was one cointegration relationship among the variables when GDP was the endogenous variable. This finding paved the way for estimating long run elasticities on the impact of defense burden, labour force and capital stock on GDP, which is investigated in the third step. It is done, to cover for the robustness of our findings, by using two long run estimators. Both OLS and ARDL estimators revealed that defense burden have a negative impact while both labour force and capital have a positive impact on Fiji's GDP. In the fourth step, we explore the short run relationship among the above mention variables. It is found that in the short run only labour forces contributes positively to GDP.

The result obtained is contradictory to results noted in Narayan and Singh (2007). They noted a positive impact of military expenditure on Fiji economic growth. However, their study used a restricted model and ignored important determinants of economic growth that is labour force and capital stock. This paper is an improvement over the previous study as the model incorporates labour force and capital stock which have been found to be important

determinants of economic growth, in various empirical studies done over Fiji. Moreover, the previous paper regressed military expenditure against GDP, while this study uses defense burden proxied by military expenditure as share of GDP. The result is consistent with classical school of thoughts.

This study has made no attempts to evaluate the cost of military coup on economic growth. Military coup could possibly have a negative impact on economic growth through political instability. Hence over such period military expenditure is likely to have a larger offsetting negative impact on economic growth. A detail study on political instability and economic growth needs to be undertaken.

Given the various channels through which military expenditure affects economic growth, it is impossible to conclude the net multiplier effects of the military expenditure at this stage. Further detail studies need to be undertaken to delineate the specific channels through which defense spending and economic growth may affect each other.

The result presented above could also be specific to the methodology use. Other method may produce contradictory results.

Chapter 6: Conclusion

6.0 Introduction

This thesis set to achieve a number of objectives. The prime objective was to investigate the defense burden-growth nexus. This was done in two-tier manner, whereby both theoretical and empirical aspects were looked at. A substantial amount of literature was surveyed to establish the theoretical grounds on which the military expenditure-growth phenomena rest, and a time series approach to cointegration was used to empirically measure the effects of defense burden on Fiji's output from 1970-2003.

6.1 Key finding

6.1.1 Role and contribution of Fiji Military Force

Firstly, the republic of Fiji military forces provides about three percent of the total labor force. Since 1987, the number of the people employed at the republic of Fiji military forces increased from 2579 to 3549 in 2005. Of these approximately 28 percent serve in mission abroad, earning income valued at approximately $30 million.

Besides employment, the republic of Fiji military forces plays an important role in human capital development. Academic training is a vital component of training for the military forces including the attainment of university undergraduate and postgraduate degrees and also trade related courses in various tertiary institutions in Fiji and abroad. Officers are trained in the areas of engineering, Information technology, marine science, law and management and administration. The various training provided to the military personnel's better prepares,

equips and enhances military skills and knowledge on the key aspects of the Fiji military forces. The training and qualification attained in the Republic of Fiji Military Force have also enable officers to take up various civilian positions and duties after leaving the force. Further, most of the military officers are recruited from subsistence rural villages and hence the military programme introduces people to modern methods and social skills which improve their productivity.

Secondly, Fiji provides a significant proportion of military services at overseas missions which provides a source of government revenue and employment to over a thousand military personnel. For instance, in 2003 incomes earned from overseas mission were valued at 1.3% of total exports. Moreover, over the 1987-2001 period, incomes earned from overseas missions were valued at 2% of total exports. In addition, peace keeping missions provided training and education to peace keepers, teaching new values and discipline. Peace keeping provides technical skills and educational training necessary for peace keeping, negotiation and mediation. The end of the mission this skills and training acquired at the peace keeping can enable this young man to effectively perform an informal role in their villages either at individual or group levels. Moreover, over the years, a constructive peace keeping role has brought Fiji a wide recognition and international visibility, enhancing its multilateral and bilateral ties, which help positively, reflects Fiji's foreign policy issues and goals.

6.1.2 Empirical Evidence

Consistent with the Classical School of thoughts empirical evidence in case of Fiji has shown the negative impact of military expenditure on economic growth. This implies that any positive effect it have on growth through increased demand, modernization, human capital

formation and peace keeping operation would be swamped by the negative effects on growth through decreased investment. Operating expenditure accounts about 92 percent of military budget, with vey little left for capital investment. Moreover, major increase in the military budget was felt after 1987 coup, as result of mobilization of hundreds of military reservist at the time contributing very little or nothing to economic activity.

6.2 Military expenditure-growth relationship – a summary

Theoretical and empirical literature provides two conflicting thoughts on the relationship between military expenditure and economic growth. The Keynesian school of thought contends that an increase in the military burden stimulates demand, increases purchases power, increases national output, and creates positive externalities. Benoit (1973, 1978) argues that military spending allows efficient utilization of the capital stock, which in turn causes economic growth. Given that developing countries are generally characterized by high unemployment rates, the military, because it trains the labour force, provides a source of employment. Moreover, in developing countries the military may provide a valuable skill. For example, technicians and health professionals trained in the military may provide services to private sector. In addition, the discipline and attitude acquired by being part of the military force and the research and development undertaken by the military are likely to have positive externality effects on the society. The military is also likely to provide the essential security required for economic growth. To this end, Deger (1986) argues that military spending may stimulate economic growth through the spin-off effect, such as a creation of socio-economic structures conducive to growth.

On the other hand, the Classical school of thought contends that an increase in the military expenditure is likely to retard economic growth. This argument is based on the premise that a higher military spending implies a lower level of private investment and domestic savings, and lower consumption due to lower aggregate demand. This is can be specifically explained as follows. A higher level of military spending will lead to an increase in the interest rate, which will crowd out the private investment. A lower level of domestic saving in the economy would also mean that the level of the investment in the economy would be low. With subdued investment levels, Chowdhury (1991) suggests that it will result in lower quantity and quality of capital stock. This is likely to reduce a countries productive capacity. Spending more on the military also means that there is a reduction in government's revenue collections, which is likely to have a negative impact on the economic growth (Deger and Smith, 1983).

6.3 Policy recommendation

The findings of the thesis suggest numerous policy implications. First, Increased defense burden over the last three decade have reduced economic growth in Fiji as it trade off other government productive investment in Fiji. Policymakers should there fore reduce military spending and relocate government resources from military sector towards civil purpose. Any saving from reduction in military spending should be channeled to productive government spending such as infrastructure and human capital development. A reduction in the military expenditure will not only provide dividends in terms of savings that could be invested in other sector but also increased economic activity in the long term as a result of productive investment.

Further more, since Fiji does not have any defense industrial base, the usual problem of readjusting to lower level of military spending will be relatively minor. However, a substantial relocation of resources towards the civilian sector would, in principle, be subject to strategic and political environment facing Fiji. The on going coup culture in Fiji explains why defense expenditure has not been reduced much since 1987 coup. In addition, properly planned and managed reduction in military spending is important to boost economic growth. If ex-military personnel are not able to find employment, there is a danger that they will fall back on what is often only skill they have, the use of weapon resulting in increased crime. Such problems are experienced in demobilized ex-combatant in Namibia, Mozambique, Angola and Zimbabwe (Cock, 1993). National security and defense review report (2004) recommended that military size should be reduced to half (Fiji Business review, October, 2004). It recommended that military size should be readjusted to current security needs and peace keeping commitment. The recommendation was rejected by Fiji military force as the Army Commander commodore Frank Banimarama stated that "welfare of the members of RFMF is an integral issue in his administration that cannot be scarified merely to reduce government expenditure" (Fiji business review, October, 2004, pg 2).

Defense cut can also be pursued through human resource conversion. Human resource conversion refers to the practical and normative conversion of specific skills processed by military personnel into capabilities that can be used in non-military environment. This can be achieved by accreditation of these skills by government and business sector, or through their recognition and integration into broader educational and training courses. It will provide effective and durable employment to the soldiers when they are not on duty and also to ex-service man. Unemployment contributes to frustration and disaffection among the soldiers. Effective employment will reduce the political and social conflicts. A politically and

economically stable economy will attract investment and provide alternative employment to labour force, and eventually lead to a reduction in military spending.

Second, given the fact that Fiji economy is faced with growing unemployment, poverty, and social problems completely scraping the military force would not be a desirable option as it employs a significant portion of the Fiji's labour force. However, gradually freeing resources from military sector would allow civil sector to create more employment. Civil sector could in fact be more effective in employment creation than the military sector.

Third, in this era of globalization and sweeping socio-economic development, the Fiji military forces should focus more on human capital formation such as academic training, which is likely to benefit the Fijian economy. Such academic skills can also be used productively in civilian sector.

Fourth, Fiji provides a significant proportion of military services at overseas missions given that defense spending makes up 2.3% of GDP. In light of this it is fair to claim that Fiji's military service at overseas mission will drive economic growth to some extent through earning income for the economy. It follows that maintaining military discipline – given that the military's image in the past has been tarnished because of their role in instigating coups – in providing services will be crucial in gaining popularity and overseas mission.

6.4 Scope for further research

There is immense scope for research in the field of defense economics and the current research topic can be modified and analysed in varying degrees. There is no doubt that a lot of room

for improvement in this research, which can be administered with richer data base and perhaps more time. A very interesting area to look at empirically could be to investigate the determinants of defense expenditure in Fiji. Another area would be looking at the crowding-out effect of the defense expenditure on national budget and its impact on nation debt.

Yet another area could be evaluating political instability and economic growth. Political instability is hypothesized to destabilize economic rules of resource allocation governing effect and expected reward. Such destabilization would likely reduce the efficiency of the production process and hence, economic growth. Since a successful coup tends to put the stamp of a new regime on a given country, it portends the greatest likelihood of actual changes in the economic rules of operation. The Fiji 1987 coup incidence records is replete with accounts of emerging military coup leader, decreeing new rules, devaluation of currency, government affirmative plan, growth of defense force and other reform programmes. Similarly harsh measures were also taken following 2000 failed coup, such as declaration of state of emergency, stamp of interim regime, and imprisonment of accused. Huge mismanagement of public fund was also evident during the interim regime. A similar measure is also taken following 2006 military coup such as; decreeing of new rules, swearing of interim regime, formulation and implementation of people charter, removal of various board members and senior civil servants, suspension of certain rights, and declaration of state of emergency. So many other changes were implemented following the coup till date.

Military governments might actually be better equipped than their civilian counterparts in implementing economic reforms. However, such altruistic motives are likely to be supplemented, sooner or later, by the rational political objectives to satisfy their respective constituencies, which differ even among military government. By potentially changing the

rule of resource allocation military coup is likely to generate great deal of uncertainty and cloud the investment environment.

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