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Global Determinants of Defense Budgets: Economic Liberalization

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Introduction

In the post-Cold War era, defense budgets especially in developing countries have been affected by a number of trends in the world economy as well as changing perceptions of the economic impact of defense expenditures. In the early to mid-1990s perceived or actual reductions in international tensions associated with the end of the Cold War contributed to discussions regarding the magnitude of the "peace dividend" and its use.[1] At the same time, the need for fiscal adjustment in many countries led to an increasing focus on "unproductive" spending in general including "excessive" military spending.[2]

Despite the potentially positive economic role played by improved security bilateral and multilateral donors became increasingly concerned about military expenditures as growing amounts of aid flowed to countries involved in armed conflicts. With the World Bank's (and to a lesser extent the International Monetary Fund) increasing focus on poverty reduction and issues related to governance and public expenditure management, the donor community's tolerance for military spending has been declining significantly.[3]

Developments in the international economy reinforced the positions of the World Bank and IMF. In particular neoliberalism became a driving force in globalization, and in the process redefined the role of national governments. Neoliberalism emphasizes a policy mix stressing a greater role for the market in the allocation of resources, a much-reduced role for the state, and increasing integration in the world economy.[4] In the neoliberal world, defense expenditures are not considered productive in terms of enhancing economic performance. Quite the contrary -- countries with high levels of defense

[1] N. P. Gleditsch, et al., eds. The Peace Dividend (Amsterdam: North-Holland, 1996).
[2] International Monetary Fund, "Reducing Unproductive Expenditures is Important for Fiscal Adjustment," IMF Survey (February 24, 1997), pp. 49-51.
[3] "World Bank Ponders Military Spending," Oxford Analytica (March 12, 2001).
[4] Robert Looney, "Neoliberalism," in R.J. Barry Jones ed., Routledge Encyclopedia of International Political Economy (London: Routledge, 2001), pp. 1106-1110.

expenditures were considered at a distinct disadvantage in competing for foreign capital and in their ability to sustain high rates of economic growth.

The post-September 11 period has seen a fundamental reassessment of the role of security expenditures, foreign aid, the neoliberal model and improved governance in effecting economic growth and stability. Increasingly, the notion that a long-term commitment to economic growth and the alleviation of poverty is the best way at combating the pull of terrorism in developing countries.[5] The challenge is in designing and maintaining governance structures and economic environments conducive to this type of anti-terrorism strategy while simultaneously providing for domestic security and remaining competitive in the international economy.

Within this context, the sections below examine the causes and consequences of security expenditures. In particular: how have defense budgets been affected by economic liberalization and improved governance? Have improvements in economic liberalization and progress in reforming broad areas of governance through bringing the forces of efficiency and accountability to bear on defense budgets resulted in declines in defense expenditures? Through facilitating improved levels of efficiency and economic growth, do these measures permit existing and expanded levels of defense expenditure to play a more productive role in supporting economic stability and development? Or, as was the case for most of the Cold War period, have defense budgets been largely protected[6] from these forces?

Building on the results of this analysis, a final section examines the implication of the main findings for the broader discussion on security reform. Here it is suggested that rather than examining specific defense expenditures from the usual perspective of military effectiveness and defense efficiency a broader approach should be taken. In particular, if part of a coordinated reform process, expanded defense expenditures should be able to undertaken without adverse impacts on economy. Even higher levels of economic liberalization and defense expenditures may permit defense expenditures to meet their normal objectives while simultaneously providing a stimulus to economic growth.[7] Since growth occurring in an environment of economic liberalization and improved governance is more likely to be broad based, rather than concentrated in certain areas, an efficient balance between military

[5] Jennifer Bremer and John Kasarda, "The Origins of Terror: Implications for U.S. Foreign Policy," Milken Institute Review (Fourth Quarter 2002), pp. 34-48.
[6] Norman Hicks and Ann Kubisch, "Cutting Government Expenditures in LDCs," Finance & Development (September 1984), pp. 37-39.
[7] The mechanisms underlying this effect are assessed in Charles Wolf, "Economic success, Stability and the 'Old' International Order," International Security (1981), pp. 75-92.

expenditures, economic liberalization and improved governance may be the key to long-term strategies[8] to combat terrorism.

Post-Cold War and the International Financial Institutions

In recent years, the fungiblety[9] of non-military loans and assistance into defense budgets, empirical evidence suggesting negative links between defense expenditure and economic growth,[10] together with increased criticism of lending practices resulted in a shift in IMF and World Bank lending policy, especially after the Cold War. Starting in the early 1990s both organizations, began to view defense expenditures as a significant impediment to fiscal stability, growth and development. As the both organizations became concerned with defense expenditures they did so without directly raising any security issues. One reason for the approach taken by the IMF and World Bank is their mandates, which do not all them to interfere in political matters. Interpreting military expenditures as a purely fiscal matter however they could espouse views and discuss the matter with recipient country governments.[11]

This focus on costs rather than benefits of military expenditures also stems from the fact that both organizations are dominated by neo-classical economists. In neo-classical economic theory, which emphasizes investment in productive capital as the engine of growth and economic development, military expenditure is considered to be pure waste. With little explicit recognition or appreciation of the positive impacts that might be associated with defense an over-emphasis on zero-sum type diversion from other "productive" programs dominates the thinking at the Fund and Bank. In fact, the IMF has an extensive list[12] of publications concerning "unproductive" expenditures of which "excessive" defense is predominately mentioned.

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[8] Strategies built around this theme are developed in Robert Looney, "Failed Economic Take-offs and Terrorism in Pakistan: Conceptualizing a Proper Role for U.S. Assistance," Asian Survey XLIV:6 (November/December 2004), pp. 771-793.

[9] Examples are given in N. Khilji and E.M. Zampelli, "The Fungibility of US assistance to Developing Countries and the Impact on Recipient Expenditures: A Case Study of Pakistan," World Development 19:8 (1991), pp. 1095-1105.

[10] Much of this work has been led by Saddat Deger and summarized in her Military Expenditures in her Military Expenditures in Third World Countries: the Economic Effects (London: Routledge and Kegan Paul, 1986). A contrary view suggesting positive impacts derived from defense expenditures is presented in [10] See for example: P.C. Frederiksen and R.E. Looney, "Another Look at the Defense Spending and Development Hypothesis," Defense Analysis (September 1985), pp. 205-210; R.E. Looney and P.C. Frederiksen, "Profiles of Latin American Military Producers," International Organization (Summer 1986), pp. 745-752.

[11] Michael Brzoska, Development Donors and the Concept of Security Sector Reform (Geneva: Centre for the Democratic Control of Armed Forces, Occasional Paper No. 4, November 2003).

[12] See for example, Unproductive Public Expenditures: A Pragmatic Approach to Policy Analysis. Pamphlet Series No. 48 (Washington IMF , 1995).

To its credit, the Fund's approach to military expenditures has been reflective of its extensive internal research focused on trends defense expenditures and the manner these allocations have affected local economies. Typical of this research was a major study[13] released in the late 1990s in which the Fund found that reducing military spending was critical for fiscal stability.

Reinforcing this orientation, the post Cold War era has also seen substantial public pressure in many donor countries not to tolerate high military expenditures in countries which received cheap loans and grants. Why should taxpayers in countries providing development assistance be willing to indirectly subsidize military expenditure in recipient countries? [14]

Economic Liberalization

In addition to the economic liberalization policies imposed by the World Bank and IMF as part of their lending conditions, the 1990s saw many countries voluntary adopting neoliberal policies based in part on the apparent success of what were thought[15] were similar policies in the East Asian countries. In this context, neoliberalism has three chief components. First, it elevates the role of markets (over governments) in economic governance and in mediating flows of goods and capital (through the elimination of price supports and ceilings, free trade, market-determined exchange rates, etc.). Second, it enhances the role and scope of the private sector and private property (through privatization, deregulation etc.). Finally, it promotes a particular notion of sound economic policy (through balanced budgets, labor-market flexibility, low inflation, etc.). Advocates contend that these policies represent the only path to economic prosperity for countries in today's globalized world economy. Or, as Margaret Thatcher observed: "there is no alternative."[16]

Promoters of these reforms hoped the changes would make developing countries more attractive to foreign investment and would integrate those countries even further into a competitive, but peaceful, global economic network. In its most extreme form, the vision became one in which these countries would become part of a liberal, open world economy that promoted Western values such as democracy.

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[13] Hamid Davoodi, Benedict Clements, Jerald Schiff and Peter Debaere, Military Spending, the Peace Dividend, and Fiscal Adjustment, IMF Working Paper WP/99/87 (Washington: International Monetary Fund, July 1999), p. 27.

[14] Michael Brzoska, Development Donors and the Concept of Security Sector Reform (Geneva: Centre for the Democratic Control of Armed Forces, Occasional Paper No. 4, November 2003).

[15] Analysis undertaken in the aftermath of the Asian crisis of 1997 suggested that the neoliberal model was not implemented in East Asia nearly to the extent commonly believed. See W. Braer et al., "The End of the Asian Myth: Why were the Experts Fooled?" World Development October 1999

[16] Quoted in Ronaldo Munck, "Neoliberalism, Necessitarianism and Alternatives in Latin America: There is No Alternative (TINA)?" Third World Quarterly 24:3 (June 2003), pp. 495-512.

Neoliberalism provided the economic foundation of the "new world order" advanced by the first President Bush. That order was largely based on two assumptions: first, that a healthy economy and sound financial system make for political stability, and second that countries in business together do not fight each other. [17]

In the new world order, U.S. foreign policy's number one priority was clear: to encourage the former Communist countries of Europe and the developing nations in Latin America, Asia, and Africa to adopt business-friendly policies. Private capital would then flow from the developed world into these countries creating economic growth and jobs. When free enterprise took hold, so the argument went, traditional grievances, resentments, and hostilities would fade and with it the need to maintain large defense establishments and bloated military budgets.[18] The hope was that neoliberalism would also promote democracy, good governance and sound economic policy in developing and transition countries.

Measures of Economic Liberalization and Improved Governance

To assess the relative strength of these diverse forces in the early 2000s, the following section examines the statistical linkages between defense expenditures and the various measures of economic liberalization and governance. The impact between allocations to defense and over-all economic growth is also examined to determine if the new institutional environment is compatible with increased allocations for security.

Economic Freedom

Economic liberalization manifests itself in a number of ways, with no one index or summary measure able to adequately capture al of its facets. Clearly, the term is closely associated with the concept of what is often referred to as "economic freedom." The Frasier Institute compiles various measures of economic freedom[19] on the assumption that measures of personal choice, voluntary exchange, freedom to compete and protection of person and property adequately capture the main dimensions of what is commonly associated with "economic freedom." By this approach, institutions and policies are consistent with economic freedom when they provide an infrastructure for voluntary exchange and protect individuals and their property from aggressors seeking to use violence, coercion, and fraud to seize things that do not belong to them. Legal and monetary arrangements are particularly important; governments promote economic freedom when they provide a legal

[17] Nicols Checa, John Maguire, and Jonathan Barney, "The New World Disorder," Harvard Business Review, August 2003.
[18] Checa, op. cit..
[19] James Gwartney and Robert A. Lawson, Economic Freedom of the World (Vancouver: Fraser Institute, 2003).

structure and law-enforcement system that protects the property rights of owners and enforces contracts in an even-handed manner. They also enhance economic freedom when they facilitate access to sound money.

The Frasier Institute makes its concept of economic freedom operational through developing its Economic Freedom of the World (EFW) index.[20] The EFW itself is a composite of the degree of economic freedom present in five major areas:

- Size of government: Expenditures Taxes, and Enterprises
- Legal Structure and Security of Property Rights
- Access to Sound Money
- Freedom to Exchange with Foreigners
- Regulation of Credit, Labor and Business

One advantage of assigning numbers to the various dimensions of economic freedom is that it facilitates comparisons across countries. Countries receive a score ranging from 0 – no freedom to 10 – the highest level attainable on the total index and each of its five main components. While this information is useful in and of itself, it also lends itself to the identification of empirical links with the real economy – does increased economic freedom facilitate higher rates of military expenditures? Higher rates of economic growth? Is economic freedom more significant in this regard than say the various dimensions of governance – political stability etc.

Another index of economic freedom is compiled by the Heritage Foundation and the Wall Street Journal.[21] The focus of this index is on the relative progress made by countries in moving to a deregulated, limited government, free-market environment. In short, the Heritage Index reflects the absence of government constraint or coercion on the production, distribution or consumption of goods and services. Stripped to its essentials, economic freedom is concerned with property rights and choice. To measure economic freedom the Heritage Foundation/Wall Street Journal Index takes ten different factors into account:

1. Trade policy;
2. Fiscal burden of government;
3. Government intervention in the economy;
4. Monetary policy;
5. Banking and finance;

[20] Economic Freedom of the World 2003, Global Economic Software, www.globlecomicsoftware.com

[21] See for example Marc Miles, Edwin Feulner and Mary Anastasia O'Grady and Ana Eiras, 2004 Index of Economic Freedom (Washington: Heritage Foundation, 2004).

6. Capital flows and foreign investment;
7. Wages and prices;
8. Property rights;
9. Regulation, and
10. Informal market

Implied in these measures is the notion that economic freedom also requires governments to refrain from many activities. They must refrain from actions that interfere with personal choice, voluntary exchange, and the freedom to enter and compete in labor and product markets. Economic freedom is reduced when taxes, government expenditures, and regulations are substituted for personal choice, voluntary exchange and market coordination. Restrictions that limit entry into occupations and business activities also retard economic freedom.

Governance

The other main area of US reform efforts, democracy and governance are increasingly seen as essential for long run economic growth and prosperity. In fact some dimensions of governance now sit at the center of academic and policy discussions of economic development.[22]

While the ranking of countries on the basis of their relative progress in attaining improved governance is inherently subjective, a recent World Bank study[23] provides a set of rankings incorporating the full extent of our knowledge about this phenomenon. More precisely, the World Bank data set presents a set of estimates of six dimensions of governance covering 199 countries and territories for 1996, 1998, 2000, and 2004.

Voice and Accountability. This variable measures various aspects of the political process, civil liberties and political rights. These indicators measure the extent to which the citizens of a country are able to participate in the selection of governments. Also included in this variable are indicators measuring the independence of the media.

Political Stability and Absence of Violence. This governance cluster combines several indicators which measure perceptions of the likelihood that the government in power will be destabilized or overthrown..

Government Effectiveness. This variable combines aspects of the quality of public service provision, the quality of the bureaucracy, the competence of

[22] Herbert Kitschelt, "A Review of the Political Economy of Governance" World Bank Policy Research Working Paper 3315, May 2004, p.1

[23] Daniel Kaufman, Aart Kraay and Massimo Mastruzzi, Governance Matters IV: Governance Indicators for 1996-2004 (Washington: World Bank, 2005).

civil servants, the independence of the civil service from political pressures, and the credibility of the government's commitment to policies.

Regulatory Quality. This aspect of governance is more focused on the policies themselves. It includes measures of the incidence of market-unfriendly policies such as price controls or inadequate bank supervision as well as perceptions of the burdens imposed by excessive regulation in areas such as foreign trade and business development.

Rule of Law. Included in this dimension of governance are several indicators which measure the extent to which the citizens of a country have confidence in and abide by the rules of society. These include perceptions of the incidence of crime, the effectiveness and predictability of the judiciary, and the enforceability of contracts.

Control of Corruption This dimension of governance measures perceptions of corruption. By this measure corruption is defined as the exercise of public power for private gain. It is often a manifestation of a lack of respect of both the corrupter and the corrupted for the rules which govern their interactions, and hence represents a failure of governance.

Economic Liberalization, Governance and Defense Expenditures

One of the main conclusions coming out of the empirical work on defense expenditures is that statistical studies of large samples of countries often reach inconclusive results because distinct sub-grouping of countries often have markedly different environments. As noted above many studies have found negative linkages between defense and growth. On the other hand, several empirical studies[24] have suggested that defense expenditures taking place in environments of plentiful savings or foreign exchange often produced positive impacts on growth. Similarly when these factors were relatively scarce defense expenditures often had a negative effect on economic growth.

In today's rapidly evolving and liberalizing world economy might not the relative progress made in economic liberalization and governance reforms act in a similar manner? Are countries achieving relatively high levels of economic liberalization and governance more likely to have removed institutional constraints on growth thus enabling the positive impacts of defense on the economy to predominate? These issues are examined below.

[24] See for example: P.C. Frederiksen and R.E. Looney, "Another Look at the Defense Spending and Development Hypothesis," Defense Analysis (September 1985), pp. 205-210; R.E. Looney and P.C. Frederiksen, "Profiles of Latin American Military Producers," International Organization (Summer 1986), pp. 745-752.

Differences in High-Low Country Group Means

In the early 2000s one apparent difference between countries is their defense burden (measured in terms of the share of the defense budget in Gross Domestic Product). The mean of the average share of defense in GDP over the 2000-2003[25] period is 2.66% with the countries below this level averaging 1.49% while those above the mean average 5.49% Table 1.

Other significant differences between the low defense countries and those with higher defense burdens include:

1. Even greater differences in budgetary shares allocated to defense exist between the low defense and high defense countries with allocations to the military in low defense countries averaging 6.3% of the budget as opposed to 18.35% in the high defense countries.

2. In the mid- to late-1990s both groups of countries had higher defense burdens and shares of the budget allocated to defense than in the early 2000s.

3. Interestingly despite the great differences in defense budgetary shares between the two groups, both groups allocated roughly the same shares of their budgets to education (6.0%) and health (4.5%).

4. In the mid-to late 1990s, the high defense countries as a group actually had higher budgetary shares allocated to education and health.

With regard to the key macroeconomic aggregates (Table 2) several significant differences exist between the high and low defense countries:

1. The most striking difference occurs in the area of foreign direct investment (FDI as a share of GDP) with the low defense countries able to attract a significantly higher amount (18.29% as opposed to 5.43%). In the earlier period these differences were considerably less (5.43 vs. 4.93).

2. The low defense countries also exhibit slightly better macro performance in several key areas, government consumption where they have considerably lower shares (14.98% vs. 18.42%) and gross domestic savings where their share is somewhat above that (17.73% vs 14.98%) of the high defense countries. These differences between the two groups were similar to that found in the mid- to late 1990s.

[25] Unless otherwise specified all data is from: World Development Indicators 2005 (Washington: World Bank, 2005).

3. Despite the higher rate of government consumption and lower savings rates, the investment rates of the high defense countries was only marginally lower (19.23 vs 20.91) and had actually been above (21.83% vs 20.70) the low defense countries in the mid- to late 1990s.

4. In part, these investment rates translate into slightly superior growth rates for the non-defense countries in the early 2000s (2.32% vs 1.88%) and the high defense countries 2.99% vs 2.17%) in the mid- to late 1990s.

With regard to economic liberalization, the Fraser Institute's measures suggest (Table 3) that the low defense countries have generally made better (in the Fraser Index larger numbers signify more freedom) progress. The one exception is access to sound money, where the high defense countries consistently score higher.

The Wall Street Journal/Heritage Foundation Economic Freedom Index presents a similar picture (Table 4). In the 2000-2003 period, the high defense countries score higher (in this index low scores are indicative of greater economic freedom) in only the area of the fiscal burden. In the mid-late 1990s the high defense countries also had slightly better regulatory environments.

The main area of deference between the high and low defense expenditure countries is their governance structures (Table 5) In all six areas of governance compiled by the World Bank, the low defense countries have made considerably more progress (reflected in higher scores) than their high defense counterparts. The differences are especially great in the area of voice and accountability where the gap has widened somewhat over that in the mid-late 1990s. The smallest differences between the two groups are in the areas of rule of law and control of corruption.

Economic Liberalization, Governance and Military Expenditures

A regression of the defense burden (average 2000-2003) on the measures of economic freedom and the various measures of governance (Frasier and Wall Street/Heritage) accounted for 43% of the variance in the defense burden across countries. The statistically significant variables (in order of importance) were: voice and accountability (2000s), The Frasier summary measure of economic freedom (1990s), the Fraser legal structure index and finally the World Bank rule of law index (1990s). As the examination of the group means suggested, lower military expenditures coincide with improved governance and economic freedom.

Since the two defense-based groupings are quite distinct, a reform threshold may be present – those countries able to build on initial reform

efforts are able to sustain them over time whereas those that do not get off on a positive step with reforms are never able to build up sufficient broad-based support capable of effectively pressing for deeper liberalization.[26]

Defense Expenditures and Economic Growth

As noted, one of the on-going debates in defense economics has been the role of military expenditures in effecting national economic growth. Traditionally models of the following type are used in a regression analysis to test the defense/growth link:

GDPYPG	=	f(GFCY, AIDPER, GFDIY, GCNPY, MILXY)				
(Expected sign)		+	+	+	-	?

Where:

- GDPYPG = Per-Capita GDP Growth (average 2000-2003)
- GFCY = Gross Capital Formation Share GDP (average 2000-2003)
- MILXY = Military Expenditure Share of GDP (average 2000-2003)
- AIDPER = Aid Per Capita (average 2000-2003)
- GFDIY = Gross Foreign Direct Investment Share of GDP (average 2000-2003)
- GCNY = Government Consumption share of GDP (average 2000-2003)

Aid and government consumption are usually added as control variables. Everything else equal, growth should be higher, the higher the rate of capital formation, foreign aid, and foreign direct investment. Because government consumption may divert resources away from more productive uses, its sign is usually assumed to be negative. Finally, the sign on the defense term MILXY is assumed indeterminate at this point, with many previous studies finding a positive sign, while others a negative sign, the results often depending on the countries chosen and the time period covered.

The main findings[27] of this analysis (equation 1) suggest that for the sample as a whole military expenditures have a negative (albeit) weak impact on growth. This negative impact strengthens (equation 2) if only the high defense countries are included in the analysis, while defense expenditures are not a statistically significant determination of growth in the low defense countries (equation 3).

[26] Footnote on the vicious and virtuous circles of the Transition countries.

[27] Ordinary least squares regression. ** = statistically significant at the 95% level, ( ) = t statistic; R2(adj) = adjusted R2; F = F statistic; df = degrees of freedom.

Total Sample of Countries
(statistically significant results, standardized coefficients)
(1) GDPYPG = 0.357 GFCY – 0.202 MILXY
(3.75)** (-2.10)**
R2(adj) = 0.150; F = 9.282**; df = 94

High Military Expenditure Countries
(2) GDPYPG = -0.438 MILXY
(-2.54)** R2(adj) = 0.162; F = 6.424; df = 28

Low Military Expenditure Countries
(3) GDPYPG = 0.422 GFCY
(3.72)** R2(adj) = 0. 165; F = 13.83**; df = 65

New Country Groupings – Relative Reform Environments

Taken literally, these initial regression results suggest that increased defense expenditures in the high defense group are detrimental to expanded growth. Two possible[28] and somewhat related mechanisms may be at work: (1) the money allocated to defense would have had positive growth enhancing impacts if allocated to other areas, (2) any positive externalities associated with defense are more than offset by the negative externalities related to this type of expenditure.

The fact that the high defense countries had fairly similar investment rates as the low defense countries may rule out the first explanation. This interpretation is strengthened by the fact that both groups of countries also had fairly similar rates of expenditures on health and education. On the other hand there is some support for the externality explanation. Negative externalities may have prevailed in the high defense group, because the supporting environment did not exist for supporting positive linkages between military allocations and the over-all economy.

For many countries then, the real question is how to create environments whereby the positive economic effects of defense expenditures dominate the negative. This is a particularly relevant issue for the many countries having pressing needs for improved domestic security or increased protection from external threats. If the IMF and World Bank are correct in emphasizing economic liberalization and improved governance as keys to improved economic performance, then the answer may lie in achieving some sort of balance between defense expenditures and liberalization.

[28] A third possible explanation is that certain key variables impacting defense expenditure were omitted from the regression equation. This is a problem for all regression analysis. In any case inclusion of additional variables even if significant is highly unlikely to change the sign on the defense term.

The regression equation for military expenditures noted above can provide an initial start in identifying different reform environments associated with defense expenditures. The regression equation itself defines an average rate of economic liberalization/governance to defense expenditures. Conceptually, if liberalization/governance is on the horizontal axis, those countries above the regression line have high defense expenditures relative to their progress in economic liberalization/governance. Correspondingly those countries below the regression line have made above average progress in reforms given their allocations to defense.

Differences in High-Low Defense Relative to Reforms Country Groupings

The new groupings of high and low defense countries relative to their economic liberalization and improved governance display some interesting characteristics:

1. In contrast to the simple high/low defense groupings (Table 1) the new groupings (Table 6) are closer together in terms of their allocations to defense (Figures 1 and 2). In the original grouping the difference in means (for the period 2000-2003) between the high and low defense countries was fairly high (5.49% of GDP vs 1.49%). The corresponding figures for the new groupings is (3.19% vs 1.67%).

Figure 1 Country Group Comparisons: Military Expenditures

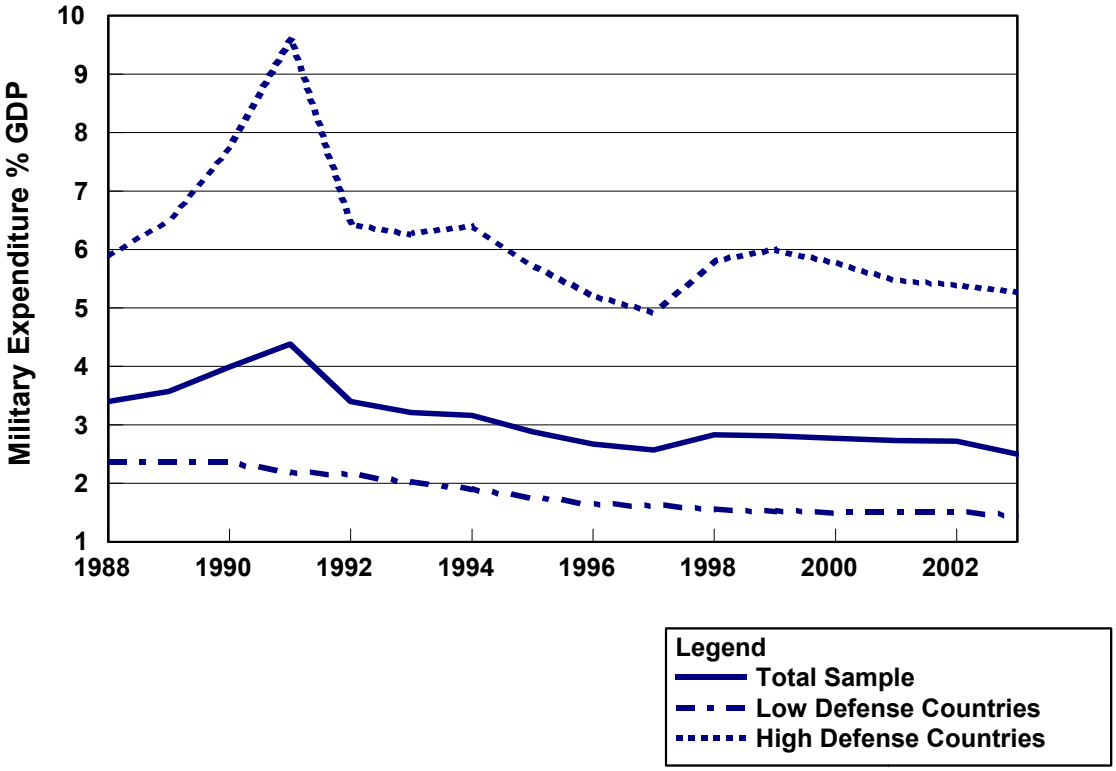
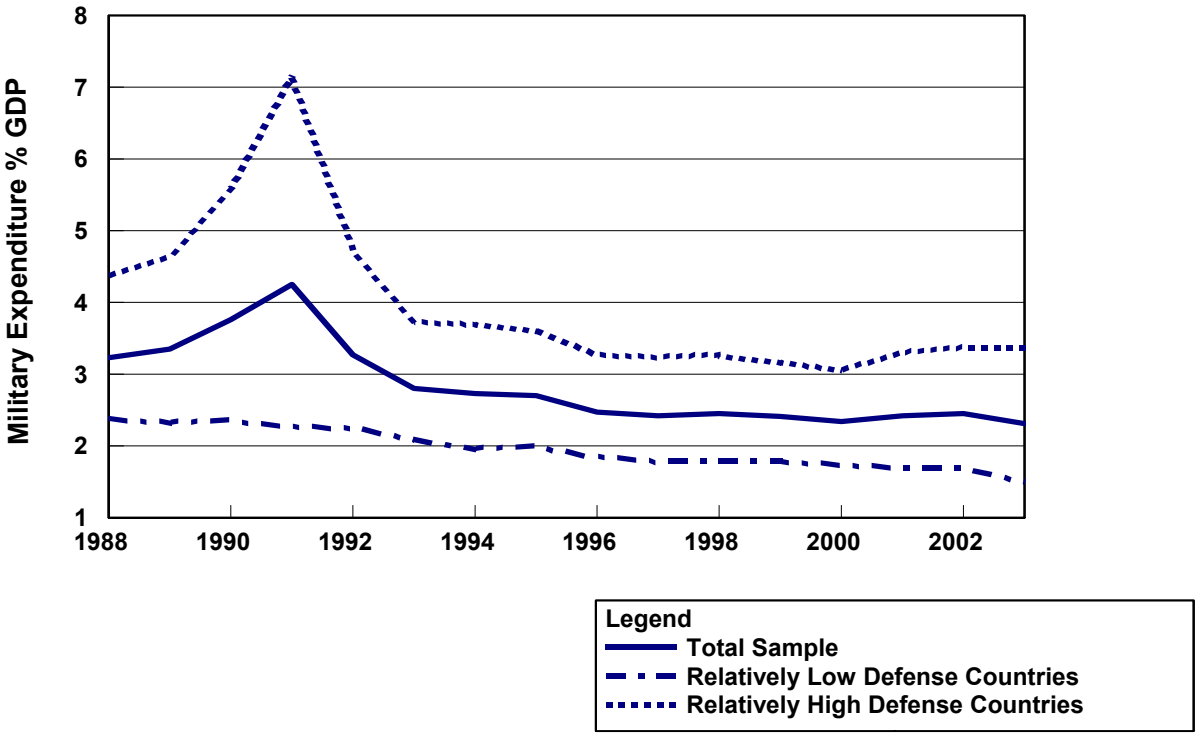


Figure 2 Relative Reform Group Comparisons: Military Expenditures



2. With regards to education expenditures, the new high defense group spends more on education (6.25% GDP vs 6.12% GDP than its low defense counterparts, while the low defense group allocates a larger percentage to health.

3. In sharp contrast to the situation in the first grouping the high defense group now grew faster (1.94% vs 1.76% per capita) than the low defense group in the early 2000s (Table 7). In recent years the growth paths of the high and low defense countries (by both measures) appear to be converging (Figures 3 and 4).

4. Since the mid-1990s the patterns of net foreign direct investment have diverged somewhat for the two groups of countries (by both definitions). Generally the low defenses countries have been more successful in attracting foreign investment (Figures 5, 6). At this point it is not clear whether this is because of their generally higher level of economic liberalization and governance or the fact that they are likely to be "safer" places for foreign investment. These patterns raise questions concerning the ability of high defense countries to maintain their relatively good growth rates.

Figure 3 Country Group Comparisons: GDP Growth Per Capita

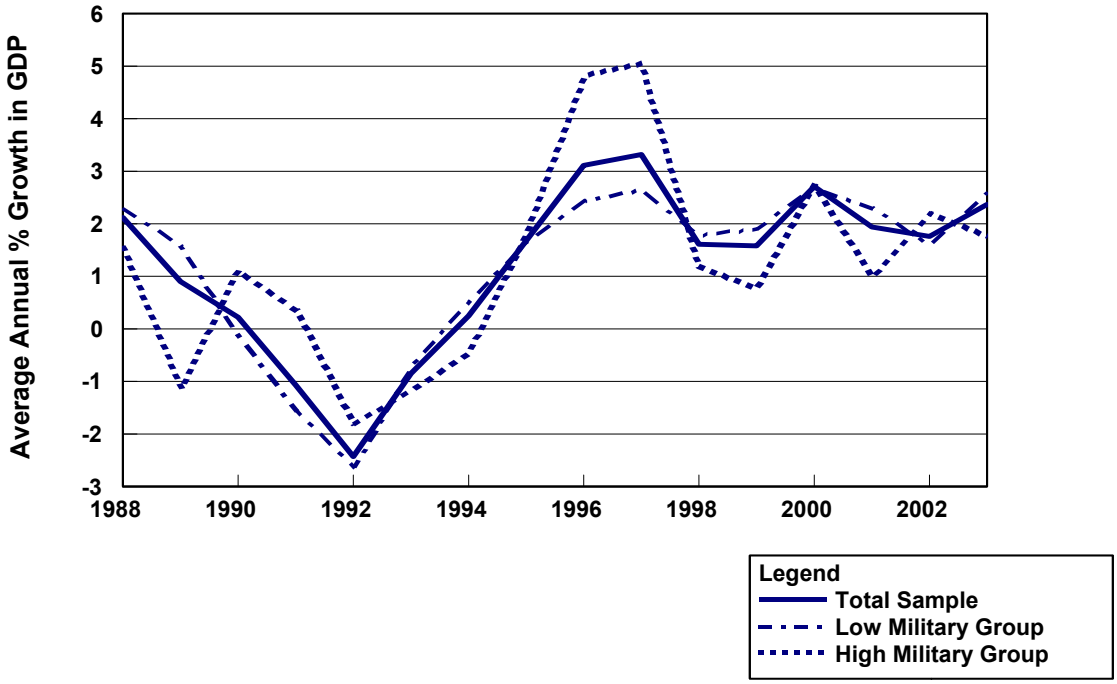


Figure 4 Relative Reform Group Comparisons: GDP Growth Per Capita

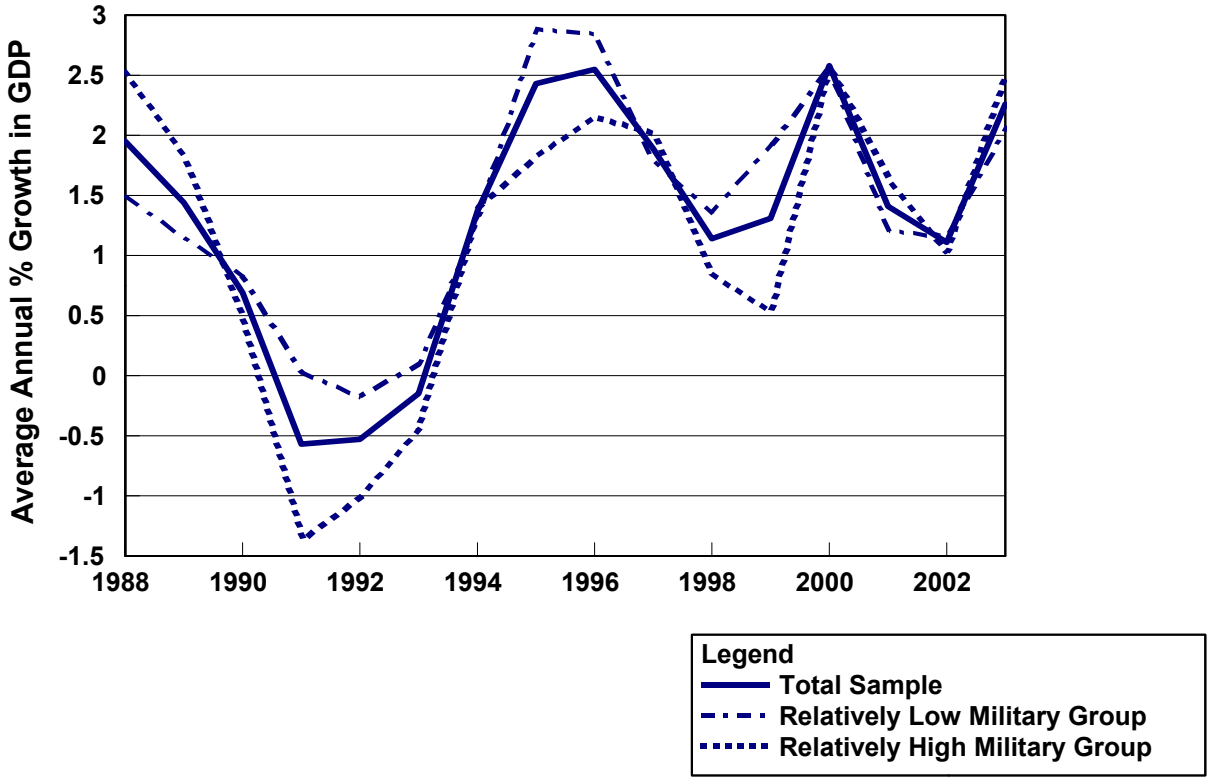


Figure 5 Country Group Comparisons: Net Foreign Direct Investment

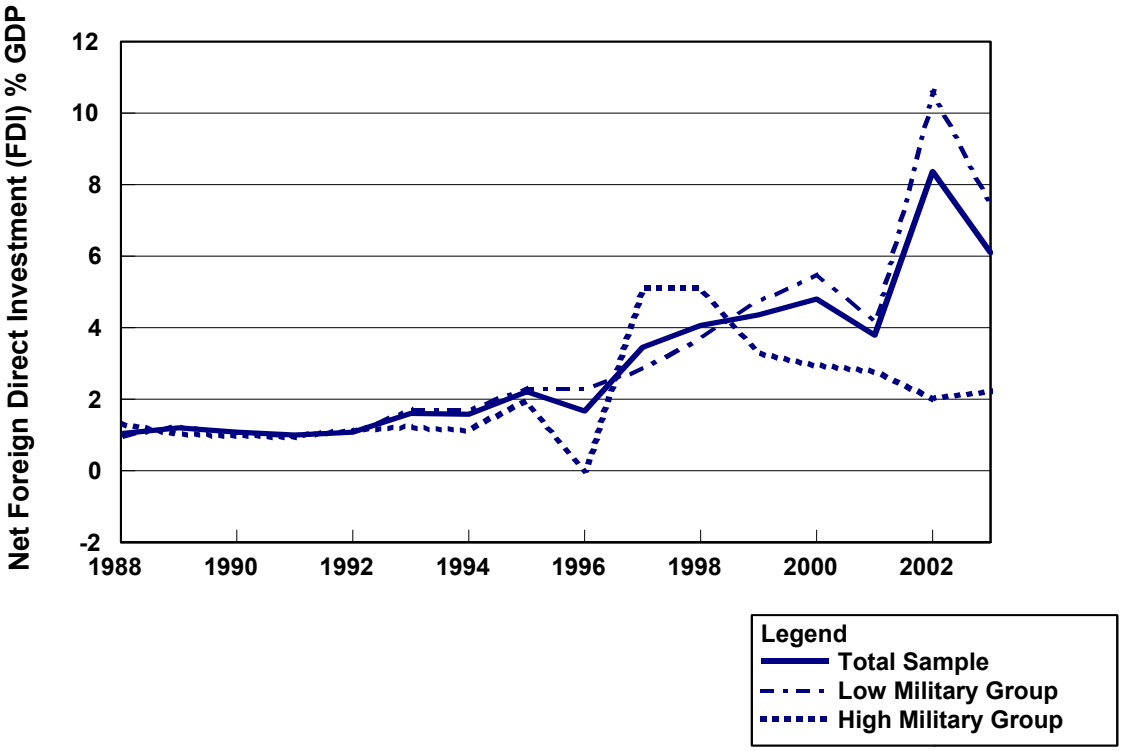
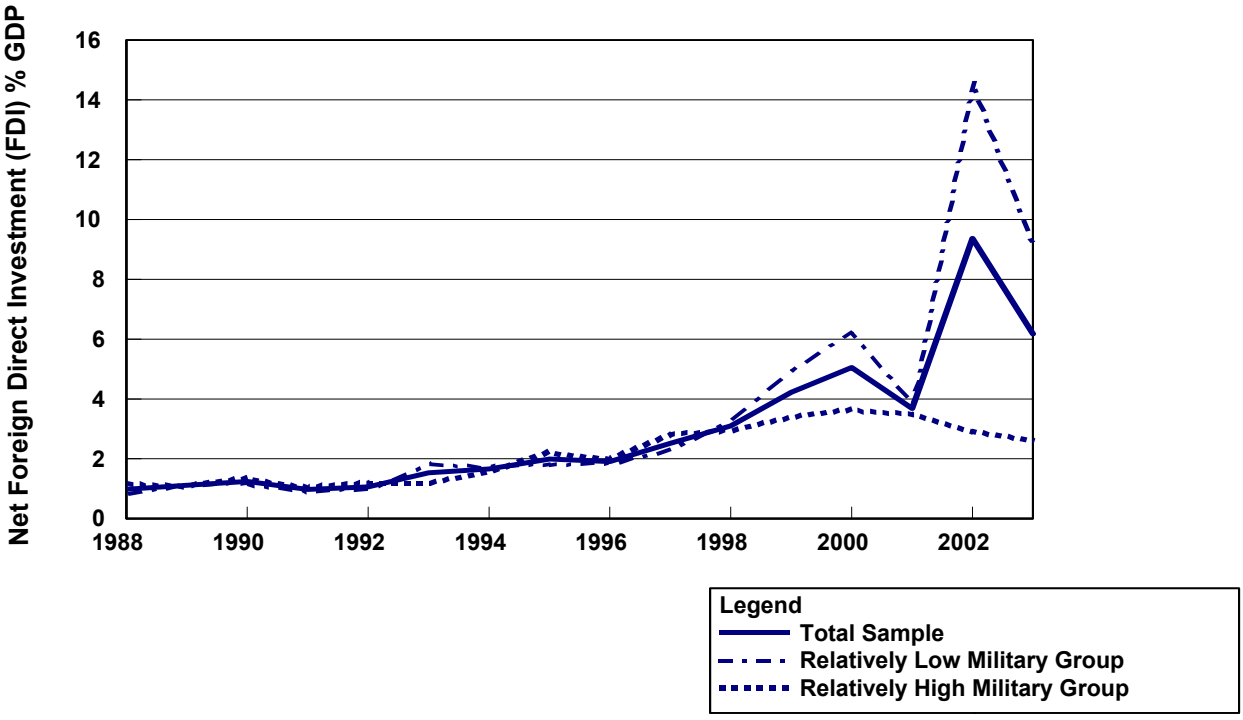


Figure 6 Relative Reform Group Comparisons: Net Foreign Direct Investment



5. In part the growing gap between the high and low defense countries has been offset somewhat by higher aid flows to the high defense countries (Figures 7, 8). However in the period prior to September 11, 2001 these flows had experienced a long-run secular trend downward. It is unclear at this point if the post September 11 increases in resources from this source will be sustained.

6. Another concern for the high defense countries is the long-run secular decline (relative to that experienced in the low defense countries) in investment rates (Figures 9, 10). While investment rates have picked up slightly in recent years enabling these countries to converge with the low defense countries rates in the low defense countries, it is unclear whether rates will revert to their long-run pattern, placing more pressure on economic liberalization and governance reforms as sources of growth.

7. There is much more parity in economic liberalization between the two newly constructed groups. In terms of the Fraser indexes the high defense group now leads in several areas (Table 8): size of government and exchange with foreigners while pulling even in the access to sound money dimension. In contrast with the previous groupings the high countries had better progress in only one area of the Wall Street Journal/Heritage economic freedom index (Table 4) they now lead the low defense countries in 6 of the 10 major index subdivisions (Table 9).

8. Finally in the important area of governance the newly defined high defense countries lead their low defense counterparts (Table 10) in (1) voice and accountability, (2) political stability, and (3) regulatory quality. In the previous grouping (Table 5) the low defense group had attained higher levels in all six areas of governance.

Applying the previous growth regression model to the new country groupings produced sharply different results. For the high military expenditure group (equation 4), defense expenditures did not adversely affect growth – the defense term was not statistically significant in the estimated equation.

In contrast those countries with relatively low levels of defense given their progress in economic liberalization and governance (equation 5) experienced positive linkages between allocations to the military and overall economic growth.

Figure 7 Country Group Comparisons: Aid Per Capita

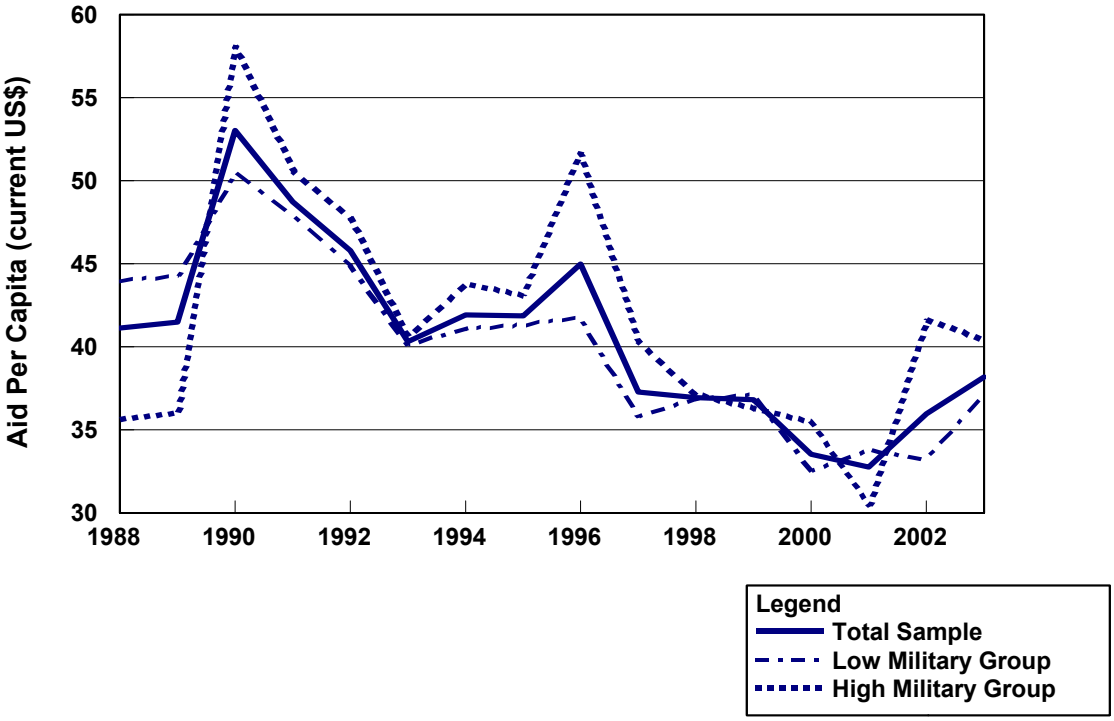


Figure 8 Relative Reform Group Comparisons: Aid Per Capita

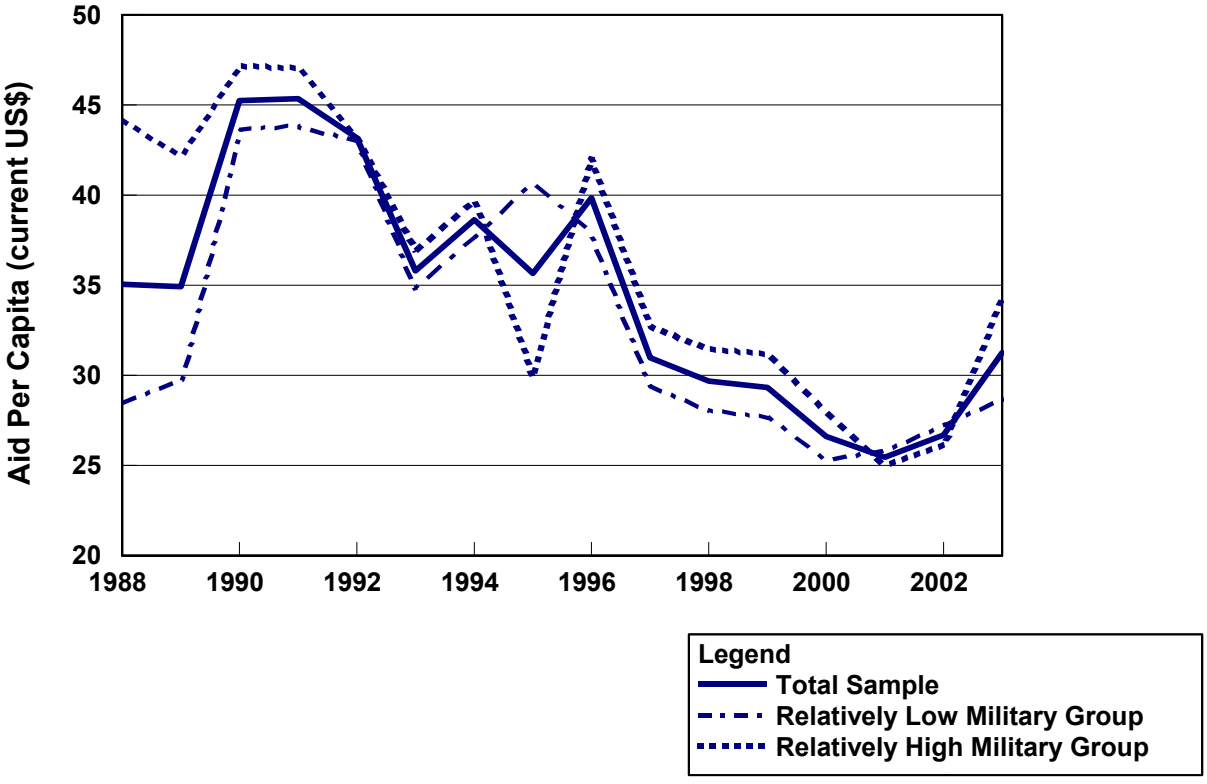


Figure 9 Country Group Comparisons: Gross Capital Formation

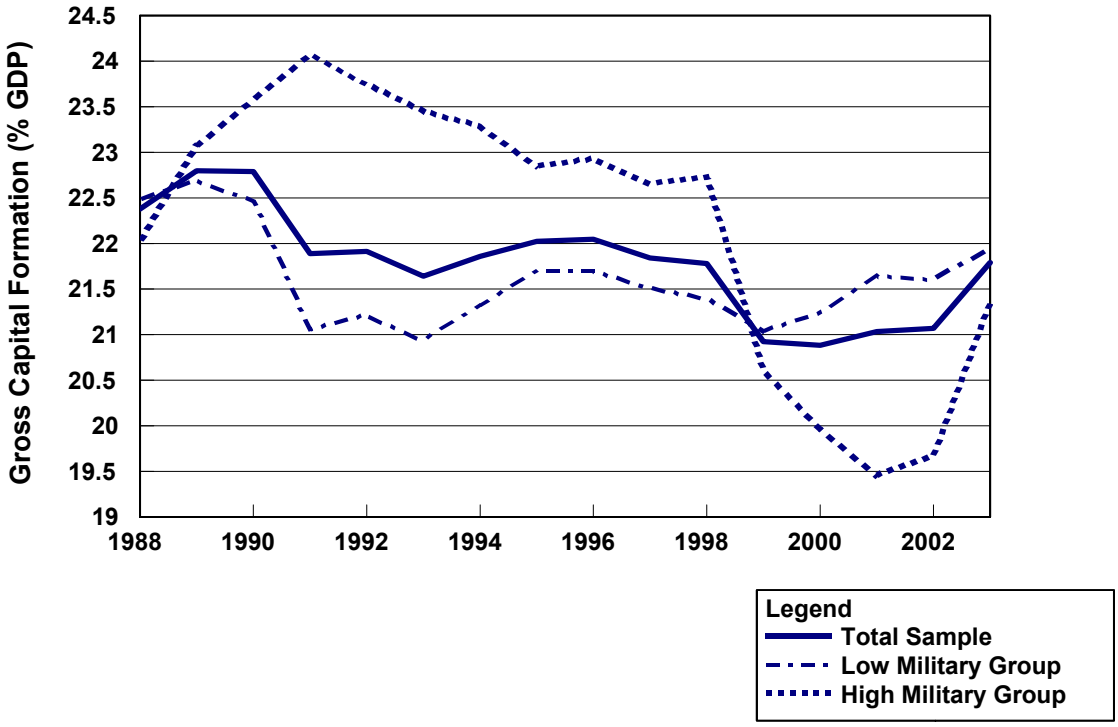
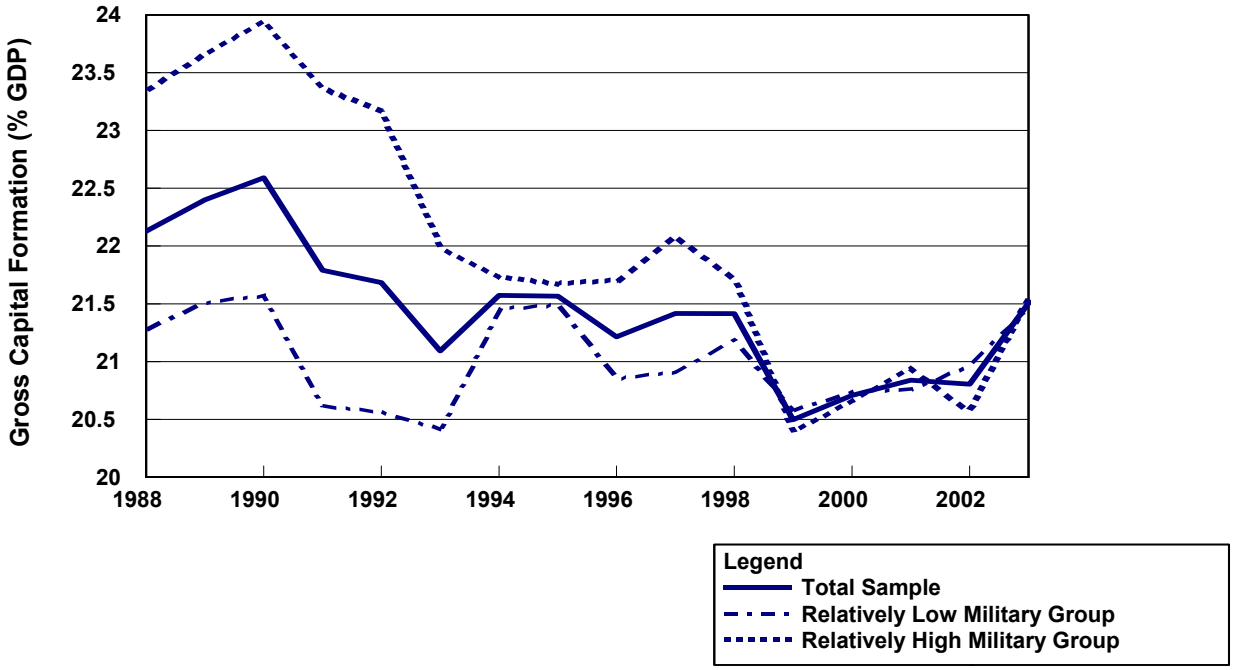


Figure 10 Relative Reform Group Comparisons: Gross Capital Formation



High Military Expenditure Countries
(statistically significant results, standardized coefficients)
(4) GDPYPG = 0.567 GFCY
(3.95)**
R2(adj) = 0.301; F = 15.621**; df = 34

Low Military Expenditure Countries
(5) GDPYPG = 0.565 GFCY + 0.285 MILXY
(4.21)** (2.12)**
R2(adj) = 0.353; F = 10.80; df = 36

The results are also stable across groups above (over-achievers—actual rates of growth greater than predicted) and below (under-achievers—actual rages of growth lower than predicted) the regression equations. Note the increase in the coefficient of determination (r2) signifying improved model specification with more homogenous sub-groupings of countries.

Over-Achieving Countries With Relatively High Military Expenditures
(6) GDPYPG = 0.532 GFCY + 0.406 AIDPER
(2.86)** (2.19)**
R2(adj) = 0.624; F = 13.47; df = 15
Under-Achieving Countries With Relatively High Military Expenditures
(7) GDPYPG = 0.873 GFCY
(7.40)**
R2(adj) = 0.749; F = 54.69; df = 18

Over-Achieving Countries With Relatively Low Military Expenditures
(8) GDPYPG = 0.565 GFCY + 0.510 MILXY
(3.37)** (3.04)**
R2(adj) = 0.495; F = 9.839; df = 18

Under-Achieving Countries With Relatively Low Military Expenditures
(9) GDPYPG = 0.659 GFCY + 0.405 MILXY
(4.05)** (2.49)**
R2(adj) = 0.549; F = 11.37; df = 17

Implications

Previously, much of the conventional wisdom of defense economics has left those countries facing declining economic growth combined with rising security problems with few attractive alternatives. Cutting defense expenditures to stimulate the economy, may create a vicious cycle whereby

increased security concerns begin negatively impacting on the economy, requiring further military cut-backs and so on. Increasing defense expenditures were felt to harm the economy, perhaps in turn resulting in increased domestic discontent over time. The results presented here suggest that choices facing decision makers may not be this stark and that countries may have a wider variety of policy options than previously thought.

A recent IMF study[29] on armed conflict and terrorism in low and middle income countries concluded that conflict is associated with lower growth and higher inflation. The study also found that conflict and terrorism also leads to higher government spending on defense. From this they conclude that there is a potential for a sizeable "peace dividend for countries that are able to resolve conflict and terrorism. Our results don't dispute this. On the other hand, they are consistent with the position that increased defense expenditures under certain conditions may be an effective means of staving off conflict and terrorism in the first place.

While the empirical work is still at the exploratory stage, the main fining of this study is that it is likely there are key combinations of reforms and governance measures capable of neutralizing many of the adverse economic effects often found associated with defense expenditures. Specifically countries with low levels of defense expenditures relative to their overall progress in economic liberalization and governance appear to have a good chance of creating environments capable of actually obtaining a positive economic stimulus from allocations to defense. With the right economic and governance reforms this might create a virtuous circle of improved security leading to further growth and pressure for additional economic and governance reforms to sustain the expansion – an environment likely to lessen the attractiveness of domestic terrorism.

For countries with high levels of defense relative to their progress in reforms, gains in some areas of economic freedom and governance appear sufficient to neutralize many of the negative impacts often found associated with defense expenditures. While it is unlikely these countries will be able to obtain net positive effects from defense expenditures, they are not necessarily condemned to defense budgetary cuts as their sole means of obtaining some sort of peace dividend. Selective economic liberalization, and improved governance in key areas may be sufficient for this purpose. For these countries security sector reform is best thought of in a broad context with coordinated reforms in the economic and governance areas just as important as

[29] Sanjeef Gupta, Benedict Clements, Rina Bhattacharya, and Shamit Chakravarti, Fiscal Consequences ofArmed Conflict and Terrorism in Low- and Middle-Income Countries," (Washington: International Monetary Fund, August 2002).

developments in the defense area in attaining security objectives, particularly those of combating the pull of terrorism.

In the European context the term "security sector reform" has its roots in the development donor debate on how best to target and implement development assistance.[30] In this sense the implications for donors and the international financial organizations are clear. Rather than worrying about and trying to define what levels of defense expenditures are "excessive" or looking at defense expenditures as "unproductive" aid donors, the IMF, and World Bank should let countries determine their own security needs. At that point, the role of the international organizations would be to play a constructive role in suggesting and supporting reforms to integrate defense expenditures into an overall pro-growth, economic liberalization/governance reform agenda.

Finally, a major element of democratic civil-military relations, defense efficiency seeks to understand whether military and security establishments can accomplish roles and missions at the least possible cost to society. Economic liberalization always entails a number of paradoxes: free trade from a mercantilist perspective is thought to weaken national economic strength when in actuality it enhances national economic power. To those primarily concerned with security issues, the wave of economic liberalization and neoliberal policies in the 1990s under the Washington Consensus appeared to give appeared to give the international financial agencies, as well as domestic reformers a rationale for cutting allocations to the military, and, as noted above, cuts have been associated with increased economic liberalization. However these same reforms may create an environment minimizing many of the disruptive economic effects often responsible for dampening necessary build-ups in security budgets. The key is to coordinate economic liberalization and governance reforms in the civilian sector with the requirements for improved security in the defense sector.

[30] Michael Brzoska, Development Donors and the Concept of Security Sector Reform, Occasional Paper No. 4 (Geneva: Geneva Center for the Democratic Control of Armed Forces, November 2003), p. 3.

Table: 1

Comparison: High/Low Defense Expenditure Countries

Military/Social	Defense Budgetary Share	Defense Expenditure % GDP	Military Personnel % Labor Force	Health Expenditure % GDP	Education Expenditure %GDP
Group Differences 2000-2003					
Low Defense Countries					
Mean	**6.30**	**1.49**	**0.99**	**6.03**	**4.50**
Germany	4.57	1.48	0.69	10.77	4.55
India	14.38	2.30	0.51	6.17	4.11
Indonesia	--	1.14	0.48	3.00	1.41
Romania	8.21	2.41	1.93	6.07	3.29
Uganda	12.85	2.35	0.48	7.07	--
High Defense Countries					
Mean	**18.35**	**5.49**	**3.08**	**6.00**	**4.40**
Chile	18.91	3.71	1.83	5.73	4.07
Colombia	17.69	3.85	1.41	8.13	4.64
Russia	18.41	4.05	1.78	5.97	3.02
United States	17.22	3.43	0.99	13.87	5.75
Group Differences 1995-1999					
Low Defense Countries					
Mean	**7.24**	**1.57**	**1.13**	**5.85**	**4.16**
Germany	4.81	1.58	0.86	10.60	4.60
India	15.11	2.23	0.53	5.45	3.61
Indonesia	9.66	9.66	0.52	2.55	1.24
Romania	9.08	2.80	2.81	8.50	5.59
Uganda	17.42	2.33	0.42	5.80	2.48
High Defense Countries					
Mean	20.82	5.78	3.44	6.06	4.38
Chile	--	3.58	2.08	6.05	3.78
Colombia	--	3.08	1.36	9.80	4.18
Russia	--	3.82	2.14	5.65	3.67
United States	--	3.26	1.12	13.00	5.39

Source: Compiled from World Development Indicators 2005 (Washington: World Bank, 2005).

Table: 2

Comparison: High/Low Defense Expenditure Countries

Macroeconomic Measures	Government Consumption % GDP	Private Consumpt % GDP	Gross Domestic Savings %GDP	Gross Capital Formation %GDP	Foreign Direct Invest %GDP
Group Differences 2000-2003					
Low Defense Countries					
Mean	14.98	67.31	17.73	20.91	18.29
High Defense Countries					
Mean	18.42	67.35	14.98	19.23	4.65
Group Differences 1995-1999					
Low Defense Countries					
Mean	14.74	68.54	16.66	20.70	5.43
High Defense Countries					
Mean	18.41	68.11	13.24	21.83	4.93

Macroeconomic Measures	GDP Per Capita % Growth	Gross Capital Formation % Growth	Government Consumption % Growth	Exports % Growth	Per Capita Income $PPP
Group Differences Values 2000-2003					
Low Defense Countries					
Mean	2.32	5.33	5.45	7.62	9540.41
High Defense Countries					
Mean	1.88	1.89	4.32	8.30	7150.72
Group Differences 1995-1999					
Low Defense Countries					
Mean	2.17	6.35	2.43	6.50	8566.55
High Defense Countries					
Mean	2.99	12.50	5.13	7.04	7046.63

Source: Compiled from World Development Indicators 2005 (Washington: World Bank, 2005).

Table: 3 Relative Reform/Governance Progress: High/Low Defense Expenditure Countries -- Share of Defense Expenditures in GDP

Fraser Economic Freedom Index	Size of Government	Legal Structure	Access to Sound Money	Exchange With Foreigners	Regulation
Group Differences 2000-2002					
Low Defense Countries					
Mean	4.31	4.25	5.92	5.23	4.35
High Defense Countries					
Mean	4.25	4.06	5.58	4.94	4.25
Group Differences 1990-1995					
Low Defense Countries					
Mean	5.21	5.86	6.20	6.41	5.25
High Defense Countries					
Mean	5.19	4.88	6.33	5.99	5.15

Fraser Economic Freedom Index	Summary 2000s	Summary 1990s	Average Rank 2000s	Average Rank 1990s
Group Differences				
Low Defense Countries				
Mean	4.81	5.77	44.51	59.04
High Defense Countries				
Mean	4.62	5.48	51.09	68.50

Data derived from: Economic Freedom of the World 2003 (Vancouver: Fraser Institute, 2005); Global Economic Software, www.globlecomicsoftware.com

Table: 4 Relative Economic Reform: High/Low Defense Expenditure Countries—Share of Defense Expenditures in GDP (contd)

Heritage Foundation Economic Freedom Index	Trade Policy	Fiscal Burden	Government Intervention	Monetary Policy	Foreign Investment
Group Differences 1995-1999					
High Defense Countries					
Mean	3.73	3.73	3.58	3.41	3.04
Low Defense Countries					
Mean	3.47	3.91	3.15	3.34	2.69
Group Differences 2000-2003					
High Defense Countries					
Mean	3.43	3.38	3.46	2.46	3.11
Low Defense Countries					
Mean	3.32	3.66	2.88	2.43	2.78

Heritage Foundation Economic Freedom Index	Banking & Finance	Wages & Prices	Property Rights	Regulation	Informal Market
Group Differences 1995-1999					
High Defense Countries					
Mean	3.22	2.97	2.88	3.26	3.56
Low Defense Countries					
Mean	2.95	2.85	2.72	3.35	3.39
Group Differences 2000-2003					
High Defense Countries					
Mean	3.22	2.92	3.27	3.55	3.55
Low Defense Countries					
Mean	2.86	2.68	2.96	3.44	3.41

Note: Low values indicate greater progress in economic reforms
Compiled from: Index of Economic Freedom Rankings, (Washington: Heritage Foundation), various issues).

Table: 5 Relative Reform/Governance Progress: High/Low Defense Expenditure Countries -- Share of Defense Expenditures in GDP

World Bank Governance	Voice Accountability	Political Stability	Government Effectiveness	Regulatory Quality	Rule of Law	Control Corrupt
Group Differences 2000-2004						
Low Defense Countries						
Mean	0.1177	0.0397	0.0827	0.1338	0.0157	0.0476
High Defense Countries						
Mean	-0.5597	-0.4554	-0.1473	-0.2244	-0.1616	-0.0972
Group Differences						
Low Defense Countries						
Mean	0.1041	0.1429	0.1514	0.1812	0.0764	0.0750
High Defense Countries						
Mean	-0.4997	-0.4287	-0.1404	-0.2074	-0.0465	-0.1136

Notes: Higher numbers = greater economic freedom/Governance. Governance Data Compiled from: Daniel Kaufmann, Aart Kraay and Massimo Mastruzzi, Governance Matters IV: Governance Indicators for 1996-2004, (Washington: World Bank, June 2005). Economic Freedom measures from Fraser Institute – Economic Freedom of the World, www.globaleconomicsoftware.com,

Table: 6

Comparison: High/Low (Relative to State of Governance/Economic Reforms) Defense Expenditure Countries

Military/Social	Defense Budgetary Share	Defense Expenditure % GDP	Military Personnel % Labor Force	Health Expenditure % GDP	Education Expenditure %GDP
Group Differences 2000-2003					
Low Defense Countries					
Mean	**7.40**	**1.67**	**1.10**	**6.12**	**4.63**
Germany	5.58	1.48	0.69	10.77	4.55
India	14.38	2.30	0.52	6.17	4.12
Uganda	12.85	2.35	0.48	7.07	--
High Defense Countries					
Mean	**11.53**	**3.19**	**2.01**	**6.25**	**4.33**
Chile	18.91	3.71	1.83	5.73	4.07
Colombia	17.69	3.85	1.41	8.13	4.64
Indonesia	--	1.14	0.48	3.00	1.41
Romania	8.21	2.41	1.93	6.07	3.29
Russia	18.41	4.05	1.78	5.97	3.02
United States	17.22	3.42	0.99	13.87	5.75
Group Differences 1995-1999					
Low Defense Countries					
Mean	**9.24**	**1.80**	**1.24**	**5.98**	**4.27**
Germany	4.81	1.58	0.86	10.60	4.60
India	15.10	2.23	0.53	5.45	3.61
Uganda	17.42	2.33	0.42	5.80	2.48
High Defense Countries					
Mean	**12.58**	**3.18**	**2.33**	**6.05**	**4.18**
Chile	--	3.58	2.08	6.05	3.78
Colombia	--	3.08	1.36	5.80	4.18
Indonesia	9.66	1.23	0.52	2.55	1.24
Romania	9.08	2.80	2.81	5.50	3.52
Russia	--	3.82	2.14	5.65	3.67
United States		3.26	1.12	13.00	5.39

Source: Compiled from World Development Indicators 2005 (Washington: World Bank, 2005).

Table: 7

Comparison: High/Low (Relative to State of Governance/Economic Reforms) Defense Expenditure Countries

Macroeconomic Measures	Government Consumption % GDP	Private Consumpt % GDP	Gross Domestic Savings %GDP	Gross Capital Formation %GDP	Foreign Direct Invest %GDP
Group Differences 2000-2003					
Low Defense Countries					
Mean	15.12	64.60	20.14	20.49	25.82
High Defense Countries					
Mean	16.58	65.33	18.24	19.74	5.68
Group Differences 1995-1999					
Low Defense Countries					
Mean	14.62	66.16	19.10	20.22	5.12
High Defense Countries					
Mean	16.41	65.73	17.85	20.54	5.03

Macroeconomic Measures	GDP Per Capita % Growth	Gross Capital Formation % Growth	Government Consumption % Growth	Exports % Growth	Per Capita Income $PPP
Group Differences Values 2000-2003					
Low Defense Countries					
Mean	1.76	3.90	5.37	6.40	11326.83
High Defense Countries					
Mean	1.94	3.64	3.43	7.26	9540.10
Group Differences 1995-1999					
Low Defense Countries					
Mean	1.96	5.56	3.03	7.43	10379.30
High Defense Countries					
Mean	1.39	9.06	3.01	6.45	8741.01

Source: Compiled from World Development Indicators 2005 (Washington: World Bank, 2005).

Table: 8
Comparison: High/Low (Relative to State of Governance/Economic Reforms) Defense Expenditure Countries (contd)

Fraser Economic Freedom Index	Size of Government	Legal Structure	Access to Sound Money	Exchange With Foreigners	Regulation
Group Differences 2000-2003					
Low Defense Countries					
Mean	4.25	4.27	5.84	5.10	4.36
High Defense Countries					
Mean	4.36	4.12	5.84	5.24	4.28
Group Differences 1990-1995					
Low Defense Countries					
Mean	5.20	5.67	6.24	6.18	5.36
High Defense Countries					
Mean	5.22	5.54	6.23	6.49	5.07

Fraser Economic Freedom Index	Summary 2000s	Summary 1990s	Average Rank 2000s	Average Rank 1990s
Group Differences 2000-2003				
Low Defense Countries				
Mean	4.82	5.78	44.52	59.05
Group Differences 1990-1995				
High Defense Countries				
Mean	4.62	5.49	51.09	68.50

Data derived from: Economic Freedom of the World 2003 (Vancouver: Fraser Institute, 2005); Global Economic Software, www.globlecomicsoftware.com

Table: 9
Comparison: High/Low (Relative to State of Governance/Economic Reforms) Defense Expenditure Countries (contd)

Heritage Foundation Economic Freedom Index	Trade Policy	Fiscal Burden	Government Intervention	Monetary Policy	Foreign Investment
Group Differences 2000-2003					
Low Defense Countries					
Mean	3.42	3.72	2.91	2.19	2.78
High Defense Countries					
Mean	3.03	3.50	2.95	2.37	2.64
Group Differences 1995-1999					
Low Defense Countries					
Mean	3.51	3.89	3.14	3.04	2.69
High Defense Countries					
Mean	3.19	3.78	3.03	3.42	2.48

Heritage Foundation Economic Freedom	Banking & Finance	Wages & Prices	Property Rights	Regulation	Informal Market
Average Values 2000-2003					
Low Defense Countries					
Mean	2.87	2.62	2.79	3.33	3.11
High Defense Countries					
Mean	2.79	2.58	2.90	3.26	3.37
Average Values 1995-1999					
Low Defense Countries					
Mean	2.76	2.62	2.47	3.24	2.96
High Defense Countries					
Mean	2.92	2.78	2.67	3.076	3.49

Compiled from: Index of Economic Freedom Rankings, (Washington: Heritage Foundation), various issues).

Table: 10
Comparison: High/Low (Relative to State of Governance/Economic Reforms) Defense Expenditure Countries (contd)

World Bank Governance Index	Voice Accountability	Political Stability	Government Effectiveness	Regulatory Quality	Rule of Law	Control Corrupt
Group Differences 2000-2004						
Low Defense Countries						
Mean	0.0940	-0.0238	0.2495	0.2175	0.1946	0.2355
High Defense Countries						
Mean	0.1863	0.0654	0.1785	0.2853	0.1195	0.1352
Group Differences 1996-1998						
Low Defense Countries						
Mean	0.1177	0.0616	0.3231	0.3357	0.3275	0.2779
High Defense Countries						
Mean	0.1581	0.1356	0.2034	0.3259	0.1372	0.1038

Governance Data Compiled from: Daniel Kaufmann, Aart Kraay and Massimo Mastruzzi, Governance Matters IV: Governance Indicators for 1996-2004, (Washington: World Bank, June 2005), and Economic Freedom of the World, www.globaleconomicsoftware.com,