

CHAPTER 1

INTRODUCTION

Many studies have been undertaken in recent years focusing on the subject of military expenditure (mlex). Earlier studies concentrated on the determinants of mlex and its impact on economic growth while the trend today focuses on disarmament and the release of resources for non-military uses.

Two main schools of thought exist on the main economic effects of military spending programs, each with varying degrees of empirical support.ⁱ

The first focuses on the negative consequences of military spending for the economy. Under this model, military spending is considered a burden which encumbers societal resources that could be put to better use. Military expenditures are thought to divert resources from other uses, to bring about a reduction in private consumption, to reduce private and public savings (and thereby investment), and to focus government expenditures away from human capital investment such as education and health care. As well, since investment is reduced and redirected towards the military, the general research and development (R & D) effort is thought to be impeded, and skilled human capital (e.g. scientists and engineers) in the civilian sector is diverted to the military. In some countries this is thought to have an adverse effect on balance of payments positions. In addition, military expenditures are often thought to bring about negative externalities, such as environmental damage from nuclear weapons production and testing, enlarging of the military-industrial complex, and encouragement of inflationary policies.

A second interpretation of the linkages between military spending and economic productivity focuses on the beneficial aspects of defence spending. Supporters of this school of thought argue that the technology spin-off from military research to civilian uses is substantial in the long run. In addition, they maintain that training and other forms of human capital enhancement bring into the civilian economy skills that were developed in the military arena. As well, scholars and policy makers have suggested that resource mobilisation at a national level is often tied to military purposes and that for modern industrial societies, military programs increase aggregate demand. Some have also pointed out that in the presence of weak demand for goods and services, increased national spending, including military spending, will bring about volume increases in national production.

Research results have been controversial, beginning with a positive correlation between milex and economic growth in Benoit's early work on developing countries (1973), with more sophisticated research methods in recent years revealing a negative (or at least neutral) correlation between milex and economic growth.ⁱⁱ

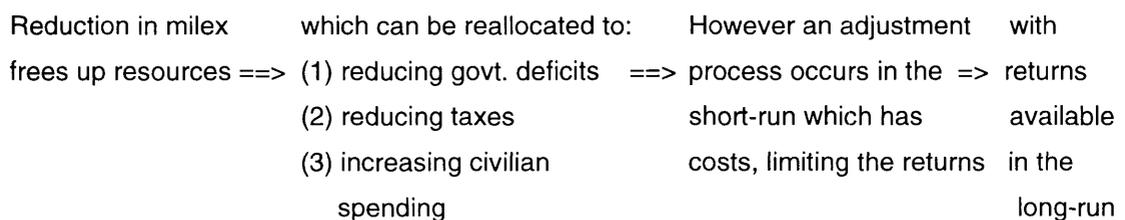
If the more recent results are accepted, then it is logical to assume that economies which spend a high proportion of their national budgets on milex have the **opportunity** to benefit greatly from milex reductions and a reallocation of resources. Not only will an economy not incur any damage from reducing its military spending (under a neutral correlation scenario), but in fact has the opportunity to reap real economic benefits from the reallocation (under a negative correlation scenario).

In general terms the benefits are available as three options (or combination of):

1. reduced national government budget deficits,
2. reduced national government taxes, and/or
3. an expansion of non-military government expenditure in areas such as education, health, housing, welfare and investment in infrastructure.

The benefits derived from lower defence spending and the consequent conversion of military production into civilian production have come to be known as the "**peace dividend**"ⁱⁱⁱ and with the end of the cold war in the mid-1980's, many writers expressed optimism about the future development of both industrialised and developing countries which capitalise on this emerging opportunity.

In broad terms, the "peace dividend issue" can be represented diagrammatically as follows:



This diagram illustrates the reduction in milex and the reallocation of resources as an **investment process**, with short-run costs and longer term gains.^{iv} The short-term conversion costs are felt immediately and include the costs of retraining defence workers, retooling, rebuilding new capital and the costs of developing the capability for non-defence production. In addition economies experience short-term direct and opportunity costs of unemployed labour, capital and other production inputs. The longer term gains are derived from resource allocation from military to civilian goods and services.

Intrigilator labels the return from reductions in defence spending the implied Social Rate of Return, which takes account of both the real benefits and costs of defence spending cuts. Importantly though, he argues that it is the **pattern** of costs and benefits which determine the economic effects of defence cuts.

The Social Rate of Return will be **high** if the pattern involves:

- relatively low conversion costs
- short transition time from costs to benefits, and
- relatively high benefits derived from resource reallocation

Conversely, the Social Rate of Return will be **low** (and even negative) if the pattern involves:

- relatively high conversion costs
- long transition time, and
- relatively low benefits.

While it could be argued that with sufficient time, the long-run benefits will eventually accrue to each country which reduces its military burden, this model indicates the possibility of speeding up the process and enhancing the end result. This can be achieved by:

- (a) minimising the initial conversion costs
- (b) determining the most appropriate timing of the military reductions
- (c) ascertaining the optimal use of the reallocated resources, and
- (d) develop a preferential pattern of government policies and the subsequent economic conditions prevailing at the time of the military cuts.

Overall Aim of this Dissertation

This dissertation aims to extend the knowledge available on the subject of the peace dividend, specifically in the area of how to capture the peace dividend opportunity and how to maximise it to achieve enhanced human development.

Through an analysis of national and international case studies which report on recent experiences with reduced military, this paper will report on the magnitude of the peace dividend in two industrialised nations (USA and France) and two African developing countries (Ethiopia and Kenya).

Recommendations will be made regarding the following:

- (a) measures to minimise the short-run adjustments
- (b) measures to maximise the long-run social rate of return
- (c) optimal economic and social conditions and
- (d) preferred economic policies

which together will enable a maximum peace dividend to be achieved.

This overall aim is chosen chiefly to assist developing countries and regions with their capturing of the peace dividend. Whilst many of the developed countries have embarked on the process of disarmament, many developing countries have yet to do so because they face ongoing security concerns and/or absence of political will. It is hoped that this paper will provide a blueprint for developing countries to assist them with achieving national security, disarmament and enhanced human development.

Specific Objectives

To assist in developing the above recommendations the following specific objectives will also be achieved:

- (a) specify the extent of the peace dividend post Cold War (1985-1995)
- (b) ascertain how the peace dividend has been spent ie., if and in what ways resources have been reallocated from military expenditure to other uses in a number of developed and developing countries, specifically, the United States and France, and developing countries on the African continent, Ethiopia and Kenya.
- (c) make policy recommendations regarding how the peace dividend might be implemented for maximum economic development and minimum adjustment costs
- (d) identify the factors inhibiting the attainment of a peace dividend and how these might be overcome

CHAPTER 2

LITERATURE REVIEW

The most comprehensive resource available on the subject of the “Peace Dividend” is undoubtedly the 1996 publication entitled “**The Peace Dividend**” edited by N.P. Gleditsch. Gleditsch brings together a collection of studies, including 14 national studies, 9 cross-national and international studies, together with several supporting subjects to create an extremely detailed and current “peace dividend” resource.

Michael D. Intriligator’s^v contribution, focuses on the **peace dividend as an investment process**, one with short-run costs (due to large conversion costs and time lags) but with potentially large long-run gains. He suggests that the rate of return on such an investment process will depend on prevailing economic conditions, adjustment time factors and government economic policies at the time of reduced military spending.

This dissertation will use Intriligator’s “investment process” concept as a framework for analysing national and regional case studies.

Olav Bjerkholt^{vi} gives a **general overview of the national studies** which follow in the subsequent chapters. Bjerkholt divides the models used in national studies into three types:

1. demand-oriented short-term models
2. applied general equilibrium models and
3. Input-Output models

S/he recognises that analyses on different kinds of models tend to emphasise different aspects of the problem - short-term stabilisation issues, particularly employment effects, medium-to-long-term equilibrium growth issues and industrial reallocation issues, respectively. Bjerkholt further argues that only disaggregate Input-Output studies would be appropriate for studies of the physical conversion of “swords into ploughshares”, making it possible to pursue the conversion problems down to enterprise level or regional disaggregation towards regional adjustment policies.

In general, s/he suggests that national studies show that for most countries, there are limited (or even negative) short-run gains to be reaped from reduced armaments. A common concern is the need to reduce the burden on national government budgets so as to prevent government debt from reaching unmanageable magnitudes and to release resources for worthy causes such as welfare, health, and education.

National Studies

Chapters 3 to 16 of "The Peace Dividend" inclusive examine the implications of reduced military spending in the G7 countries, USA, Canada, U.K., France, Germany, Italy and Japan, followed by 5 smaller European countries, Denmark, Greece, the Netherland, Norway and Turkey, as well as South Africa, East-Southeast Asia and Costa Rica.

The general consensus reached is that the policy mix existing in the country at the time of the reductions in military expenditure has a great impact the ability of countries to fully capitalise on their peace dividend opportunity. Several national contributions show this by comparing the effects of alternative policies to counteract the effects of changes in military expenditure.

The Peace Dividend in the United States is explored in "**The Macroeconomic Impacts of Disarmament and the Peace dividend in the US Economy**" by Robert Coen and Bert Hickman. They suggests 3 scenarios for the use of the peace dividend:

1. Reducing Federal Budget Deficits
2. Expanding Federal Non-Defence spending
3. Tax reductions.

Simulations of the Hickman-Coen Annual Growth Model of the US economy are performed to study the macroeconomic impacts of reductions in military spending under these 3 alternative uses.

The baseline solution of the model shows the military shares of federal purchases, GDP, and labour force declining to post-World War 2 lows by 2004, but still well above peacetime levels prior to 1940. The model's dynamic properties are shown to be similar on average to other US models when subjected to a permanent reduction of defence purchases equal to 1% of baseline GDP; with the exchange rate endogenous, GDP falls by 1.45% relative to baseline, but the decline gradually moderates to just 0.23% after nine years.

Alternative uses of the peace dividend are studied in a disarmament scenario in which real defence spending is reduced at an annual rate of 4%. By 2004, this amounts to a cut of approximately 1% of baseline GDP, but the paring is achieved gradually. Three uses of the peace dividend are considered: reduction of the federal budget deficit, increases in other federal purchases, and across-the-board reductions in federal taxes. The results indicate that

losses in output and employment are greatest with deficit reduction, but even in this case GDP is only 0.6% below baseline and the unemployment rate 0.3 percentage points above baseline GDP in 2004. The small losses of output are eliminated almost completely if the defence reductions are accompanied by equal increases in non-defence spending or equal decreases in taxes. Impacts on aggregate supply (full-employment GDP) are minor in all cases. While aggregate output tends to revert to the baseline, the use of the peace dividend markedly affects the composition of the national product.

- (a) With deficit reduction, the recovery of GDP occurs mainly because of increases in net exports.
- (b) If non-defence spending is increased, the composition of output is virtually unchanged except for the shift towards civilian federal programs.
- (c) Household consumption and business investment experience the greatest gains when the peace dividend finances tax reductions.

In **“Military Expenditure and the Canadian Macroeconomy”** by **Hung-Yi Li and Peter Pauly** a macroeconomic model of the Canadian economy (FOCUS) is simulated in order to study the short- and long-run implications of cuts in military spending. The initial reaction to cutbacks in military spending is dominated by the negative demand shock. In subsequent years, however, the slight reduction in interest rates, as well as minor reallocations of activity, stimulate private investment in structures and equipment so that GDP is close to the baseline after ten years. Along with the slight dampening of economic activity, inflation rates are marginally reduced. More importantly, however, the federal deficit is reduced along with the current account deficit. The results indicate that a further reduction in military expenditure will be an important part in Canadian deficit- and debt-reduction strategies, and that such downsizing can be achieved without significant negative activity effects.

Kanemi Ban investigates defence spending and its impact on the **Japanese economy**. According to the empirical results achieved, a cut in defence spending encourages investment by business firms and accelerates economic growth in Japan. Government spending on infrastructure also contributed to economic growth by improving productivity in the private sector. The analysis indicated that Japan's economic prosperity is due mainly to its experience of peace for the past 50 years with a corresponding low level of military spending (with the share of defence spending of GDP being less than 1%). Rather than spending on military activities, the government has played a central role in economic development by providing public goods and infrastructure. The experience of Japan clearly illustrates the size of the potential peace dividend available to other developed countries.

The peace dividend in **Germany** is examined by Bloching and Busse. In their article entitled **“Conversion in Germany: The Macroeconomic Impact”**, **Bjorn Bloching and Mattias Busse** evaluate the economic impact of conversion for the Federal Republic of Germany by

macroeconomic simulation. There is first an overview of the size and historical development of the military sector in the two Germanies, including the domestic armies as well as foreign troops and exports of military equipment. Financial aspects are especially highlighted. In the simulation, two disarmament scenarios are studied covering the period to the end of this century, differing mainly in their assumptions about the future structure of German forces. The first scenario deals with the reduction of the German Bundeswehr without significant structural changes, which the second scenario includes the conversion of the Bundeswehr into an all-volunteer army. Virtually all simulations indicate strong negative impacts on GDP, consumption, and investment, associated most particularly with a reduction of exports of services. A peace dividend for Germany is unlikely to be available until after the turn of the century.

In **“The Macroeconomics of the Peace Dividend in the UK”**, Bai, Hall, Nixon and Smith attempt to quantify the range of short- and long-run responses that may follow cuts in military spending in the U.K. In particular, they draw attention to the problem of specifying how government economic policy might respond to reduced spending: either in terms of lower interest rates in response to lower inflation or lower taxes in response to less public borrowing. The macroeconomic effects of the peace dividend will differ greatly depending on the concomitant macro policy.

“The Peace Dividend in France” by Thierry Baumgart and Catherine de Montlibert documents the outcome of simulations conducted of the macroeconomic impact of a reduction in military spending on the French economy. Results indicate an unfavourable effect in the short run brought about by a direct reduction in effective demand, and consequently, activity and GDP by the Keynesian multiplier mechanism. The results also indicate that after fifteen to twenty years, the reduction will have a favourable effect on supply; due mainly to a reduced public deficit which permits lower interest rates and an ex-ante decrease in total government spending which, in turn, makes it possible to increase public investment and infrastructure spending - with a progressively positive effect on manufacturing - or to lower taxation. However, the favourable long-term impact appears gradually and slowly, and depends on whether the unemployed production capacities of the defence industry can be rapidly used. Baumgart and Montlibert also conclude that the size of the positive impact is limited, and that the possibility of reducing military spending remains largely a political choice.

A contribution by **Giancarlo Graziola, Carlo D’adda, Lorenza Belfioria and Stefania Tomasini**, examines the size, determinants and effects of **Italian** military spending. Their article describes the evolution of Italy’s defence expenditure and of some other significant related macroeconomic variables. On the basis of this and what is known about the salient features of the Italian economy in different phases, conclusions are drawn about the effects of

defence spending on the growth rate, the level of economic activity and the defence industry. The chapter also focused on the impact of the cycle of Italian defence spending in the 1980s and 1990s on the defence industry. Because actual cuts in defence spending in the 1990s have been too modest to have any significant macroeconomic impact, the authors perform simulations on the macroeconomic impact of defence cuts which are much greater than those actually implemented, and of a defence spending much higher than actual spending. These simulations yield the standard results of a basically Keynesian model with negative shocks in the final demands for goods and labour, and a positive shock on the labour force.

In "**The Greek Military Sector and Macroeconomic Effects of Military Spending in Greece**", **Athanassios Balfoussias and Vassilios Stavrinis** deal with aspects of the strategic environment within which Greece's defence policy is formulated, investigate the main interconnections of military spending with fiscal policy and macroeconomic performance, and assess the macroeconomic effects of three alternative disarmament scenarios. Their results indicate that the relationship between defence spending, budgetary policy and macroeconomic performance appears to be very complex and dynamic. In addition, the disaggregated components of military expenditure show different associations with fiscal policy and macroeconomic variables, and real military spending appears to favour real economic activity and employment. The results also show that the macroeconomic effects of the alternative disarmament scenarios are, in general, on the low scale. The authors conclude that the economic implications of the investment scenario appear to be better than those of the consumption scenario in terms of GDP and the performance of the external sector, whereas the consumption scenario performs better in reducing unemployment. The balanced mix of tax-cuts scenario also has positive repercussions and differs little from those of the other two scenarios.

Ozmucur's contribution reveals information regarding the peace dividend in **Turkey**. In his/her contribution entitled "**The Peace Dividend in Turkey**", **Suleyman Ozmucur's** macroeconomic model calculations indicate that the peace dividend may prove substantial if resources were directed towards government non-military investment. It is also suggested that other target variables such as price levels, the rate of unemployment, and the trade balance, as well as GDP, should be included when evaluating the effects of defence expenditures and calculations of the peace dividend. Ozmucur concludes that, compared to its neighbours, Turkey allocates a modest proportion of GDP to national defence, making it difficult to cut military expenditure. Despite the adverse effects of defence expenditure, it does not seem likely that it will be lowered in the near future.

The medium-term economic consequences of disarmament in **the Netherlands** is studied by **Antoniet Dortmans, Jan Dirk van de Hoef, Mike van den Tillaart, Hans Timmer and Michiel Vergeer** of the Dutch Planning Bureau. They assess the impact of structural changes

resulting from a significant cut in military expenditure of almost 25% by 1998, equivalent to approximately 0.6% of GDP. In their simulations, the authors assume that cuts in military expenditure are matched by cuts in direct taxes, so that the re-organisation is budget neutral. Whilst they acknowledge that cuts in military expenditure open the way for more non-military, private consumption, the authors suggest that it is unlikely that these potential gains will be realised in the medium term. They suggest that an important obstacle to rapid transformation of military employment towards non-military employment is that new investments in the private sector are necessary to create new jobs. When these investments are not immediately realised, a rise in unemployment and a fall in real wages is inevitable, with the result that private consumption declines. Dortmans et.al. conclude that only beyond the medium-term horizon may the cuts in military employment lead to more private consumption.

In their contribution entitled "**Military Spending and the Peace Dividend in Denmark**", **Per Bremer Rasmussen and Claus Flyng Baunkjaer** review the development in Danish military spending, emphasising the size and structure during the last decade. Evidence has shown a steady decline relative to GDP since the historical high of the years of rebuilding Danish defence after World War 11, from more than 3% of GDP to the present level of just below 2%.

Their approach is somewhat different from the other national studies in that they examine the reductions in military expenditure in relation to Denmark's pattern of foreign aid expenditure. The authors note that Denmark is one of the highest aid spenders in the world, totalling 1% of GDP, or about three times the US proportion. They argue that Denmark has realised a peace dividend in the past due to the relatively low level of military expenditure (compared to NATO partners), and that it has been redistributed to Third World countries. Calculations show that if the public savings (both future as well as historical) on military expenditure are redistributed to current generation consumers by means of tax cuts, the maximum persistent level of peace dividend is a rise of about 2% in private consumption. Other fiscal reactions are also considered and reveal that the question is not whether or not there will be a peace dividend, but rather who gets it - current or future generations, Danes or Third World populations.

The potential for either a domestic or international peace dividend resulting from **Norway's** reduction in military spending is examined by **Adne Cappelen, Nils Petter Gleditsch and Olav Bjerkholt** who borrow from several studies of the economic effects of disarmament in Norway over a 30 year period and conclude that the short-term national effects of disarmament, however rapid and drastic, can be overcome with the right countermeasures.

They argue that even in the short run, there is a double peace dividend: local government programs which enhance the life-quality of the Norwegian population can be expanded and employment and economic growth increase in the process. They replicate earlier national studies from a baseline after the Cold War, which has stopped the growth of Norwegian

military spending, although the current reduction is less drastic than in most other European countries. Using the large-scale macroeconometric model MODAG, three countermeasures are studied: increased government spending for health care, reduced personal taxation, and increased development assistance.

The Tax and Health scenarios yield a domestic peace dividend, while the third scenario is more altruistic, at best yielding an international peace dividend. The authors conclude that if a major share of the former arms expenditure is channelled into development aid, most of the peace dividend is exported. However, they suggest that results more favourable from a domestic perspective can be obtained if the aid is tied to the purchase of Norwegian goods and services.

The study of **Costs Rica** reveals profound results. **Juan-Rafael Vargas**, in his article entitled "The Peace Dividend in Costa Rica: Historical and Counterfactual" is able to draw on the long history of Costa Rica's non-military culture. Vargas suggests that the peace dividend was in place in Costa Rica as early as 1949, when the army was abolished by President Figueres. He examines historical developments and claims that the seeds of the non-militaristic society had been sown in Costa Rica as early as the turn of the century. The limited military spending (compared with similarly endowed Central American countries) yielded public budget space for human development projects. The long-run perspective is central in this study, as education and health attribute to development with time lags. Vargas shows that these budget priorities have put Costa Rica in the number one spot for Latin America on the Human Development Index. He also stresses the historical, as opposed to the counterfactual, features of the peace dividend. Some simulations are reported in the article, but the conclusion is that Costa Rica has already benefited from the peace dividend.

The peace dividend in **South Africa** is also a case of the non-typical national studies. **Geert L. de Wet, Estelle Jonkergouw, Renee Koekemoer, Nic J. Schoeman, Fritz G. Steyn and Mike L. Truu** illustrate how South Africa had to wait until the 1990's for a peace dividend when a decisive breakthrough in the freedom struggle was achieved and the country became a full democracy. This is because the policy of apartheid had long retarded long-term economic growth by impeding the optimal allocation and development of South Africa's human resources. It had also isolated the country from the world community and prevented its inhabitants from reaping the benefits of unrestricted access to the goods, services and financial markets of the world. The internal conflict in South Africa, which surfaced and escalated between 1960 and 1990, led to an increased allocation of resources for military purposes. In particular, the South African government established and developed a sophisticated defence force and arms industry, while the freedom movements continued to intensify their organisation, personnel and strength.

The advent of peace opened the way for the reallocation of resources towards more productive uses and also checked the growth in government expenditure and its deficit before borrowing. Reduced government borrowing in the capital and money markets lowered interest rates, the growth in the money supply and the rate of inflation, while increasing exports and the inflow of capital. The results have been an increase in the rate of real growth and a surplus in the current account of the balance of payments.

South Africa has now embarked on a programme of social and economic restructuring and development (originating as the Reconstruction and Development Programme, the RDP). In addition, as a consequence of the demise of the white minority apartheid government, it is now possible for South Africa to obtain foreign loans and reduce tariff protection against imports. The authors conclude that South Africa's outward orientation and human development programmes hold the promise of sustained long-term economic growth and development.

Research Approaches

With a change in focus from national studies to the issue of **how researchers should approach the subject of the peace dividend**, **F. Gerard Adams and Innwon Park** compare the Computable General Equilibrium (CGE) with the Econometric approach to modelling government military spending. They argue that the results obtained depend in very large part on the methodology employed and its implied assumptions about externalities and aggregate economic constraints.

For policy-simulation studies they suggest that traditional macroeconomic models are increasingly being displaced by CGE models, making it particularly important to contrast the implications of utilising these two methodological approaches. They compare the results of a macroeconomic approach with results from a CGE model. From simulation analyses, it was found that there is a peace dividend in the case of the CGE model approach by assuming an equilibrium labour market and no externalities of public services on private production. In contrast, no peace dividend was found in the case of the econometric model.

Regional and International Studies

Part two of the volume begins with shift from national studies to a **regional and international** level. Ron P. Smith gives an overview of three broad types of contribution:

- a) results obtained from simulating large macro models to get estimates of the national and global effects of reductions in military expenditure
- (b) investigations of the role of military expenditure, and
- (c) examinations of the security repercussions of cuts in military expenditures.

Smith argues that international studies are essential because cuts (in military spending) in one country have spillover effects or externalities in other countries through trade, which will feed back on output, and through financial flows, which will influence world real interest rates. These spillovers would not show up in a purely national simulation. Global simulations are also revealing about the distribution effects, who benefits or loses, in particular the distribution of the effects between the developed and developing countries.

He also suggests that military expenditure can impact on an economy and society depending on a number of factors, e.g. civil wars or regional hostilities; the structure of the military economy, e.g. the presence of a domestic arms industry, the capital intensity of the armed forces; and the economic structure of the particular country, which this is illustrated by the heterogeneity of the regional and international studies. In addition, cuts in military expenditure and in the arms trade will have security repercussions as well as economic consequences.

Smith emphasises that the regional studies all bring about the centrality of the security dynamics for understanding the likely evolution of military expenditure. These dynamics are quite different in the various regions, and with the end of the Cold War the local nature of the conflicts is becoming more apparent, with the regional surveys also bringing out the complexity of the links between security and development. He comments, sadly, that the increasing disparity between rich and poor countries in the world does not in itself seem politically destabilising. Poverty will exacerbate local conflicts - as in Burundi, Cambodia, Ethiopia, Liberia, Rwanda, Somalia and Sudan - but such conflicts tend to have few global or even regional repercussions. Sadly, because these countries are so poor, the rest of the world has "scant economic interest in them as sources of resources, trade or investment".

Overall, he concludes that while the economic analysis of the effects of reduced military expenditure is quite optimistic, the outlook for security and development in many parts of the world is less so. Both economic miracles, as in Asia, and increasing poverty, as in Africa, could have potentially negative effects on security, unless conflict resolution mechanisms are improved.

The first of the **regional studies** begins with **Nadir Mohammed and Jean Thisen's** article entitled "**The Economics of Disarmament in Africa**". Their contribution reviews recent trends and determinants of military spending in Africa and then offers three approaches for explaining the slowness in Africa's disarmament and military spending reductions:

- (i) some countries continue to emphasise that it is unrealistic to set criteria for freezing military spending without addressing their security concerns
- (ii) other countries show that they are concerned about excessive military spending which drain resources away from development, and
- (iii) others continue to argue for balanced measures to reduce military expenditures for raising living standards without jeopardising the security situation of newly independent states.

The authors also review theoretical and empirical studies on the economic impact of military spending on economic growth and development in Africa, and confirm that the arguments which claim that military spending has a positive impact on economic development in Africa are groundless. After a review of the evolution of militarisation in Africa and recent calls for establishing a link between disarmament and development, some suggestions are offered for attaining both security and development in Africa.

Focussing on the **East-Southeast Asian Region**, **Jose V. Ciprut** presents a comparative appraisal of the complex elements of national and international security. Relevant factors (GNP, military expenditure, central government expenditure, population/area, borders/coastlines, armed forces, social cleavages, the import and export of armaments) as well as critical ratios (GNP/cap, mil/cap, mil/GNP, mil/CGE, mil/soldier) are compared within and among 16 countries, over two 13 year periods (1967-80 and 1980-93). He suggests that most countries in the area exhibit a relentless determination to modernise aging arsenals and to sharpen the efficacy of internal and external policing.

Ciprut concludes that the political economy of international security, the country-specific geostrategic aspects of external order, the normative intrasocial dimensions of internal stability - all seem to call for domestic and outside measures which can permit new identities and new legitimacies to emerge, newer leadership functions to arise, and novel cooperative webs to develop. These will be necessary if peace and stability are to remain sustainable during the periods of realignment and reconfiguration awaited in the area.

"A Peace Dividend in South America? Defence Conversion in Argentina and Chile", by **Thomas Scheetz** suggests that arguments for military "conversion" that are applicable in the North are less appropriate for countries in South America. He argues that the concept "conversion" itself implies a rational orienting of the defence sector towards a lower level of "equilibrium". This ordered change is just what is lacking in the region and in the two countries

directly studied, most especially in Argentina. This is made evident politically, militarily, and economically. In both countries (as in the region), though for different reasons, an overarching integrated government defence policy is absent.

“Towards a Peace Dividend in the Middle East: The New dynamics of Military Spending” is the contribution by **Jordin S. Cohen and Michael D. Ward**. Unlike other regions of the world that have been able to take advantage of the end of the cold War and its attendant security-enhancing effects on defence budgeting (more peace => less spending => more growth), the Middle East continues to have considerably higher spending rates. They suggest that part of this can be explained by the apparently beneficial effects that defence spending has had on these more militarised nations; a part can also be explained by the ever-present internal and external threat environments that have resulted from arms dumping into a region where regimes still want to be “armed to the teeth and have enough money to pay the dentist!”.

They suggest that military spending is beneficial for economic growth throughout a cross-section of the Middle East; clear evidence against an expected peace dividend. As well, they looked at the political geography of military spending in the region. The end of the Cold War has not yet brought a peace dividend to the Middle East, though in some sub-regions, especially the Mediterranean area, defence spending is declining. Merging these two approaches may provide a more solid basis for understanding the wages of peace in the Middle east.

J. Paul Dunne, contributes an interesting article entitled **“Economic Effects of Military Expenditure in Developing countries: A Survey”**. He surveys the issues and empirical studies involved in the debate (over whether military spending is in fact an economic burden or whether it has positive effects) and attempts to draw some general conclusions. Firstly, he briefly outlines the trends, before summarising the main theoretical approaches and methodologies used. When attempting to operationalise the general theories, outlining the channels through which military spending can affect growth, the question of whether or not military spending is positive is seen to be an empirical one. The survey of the empirical analyses, mainly within the Keynesian framework, suggests that military expenditure has at best no effect on growth. It is likely to have a negative impact - certainly there is no evidence of a positive effect. This suggests that disarmament can indeed provide an opportunity for improved economic performance. Dunne argues that there are still problems, however, in moving to lower levels of military spending in the developing countries. Policies of conversion will be required at the national and international level, including assistance from the industrialised world.

In a move to a broader context, **Warwick McKibbin** examines “**Military Spending Cuts and the Global Economy**” . This contribution considers the quantitative implications of plausible cutbacks in defence expenditures in the industrial economies over the next two decades. McKibbin suggests that a reallocation of resources away from the defence industries in many economies will inevitably lead to reduced economic activity in the medium term because the resources released from defence-related industries cannot be automatically absorbed into private production. Nonetheless, in the short term there can be gains to credibly announced cutbacks in defence, and the medium-term costs can be reduced as long as the savings are used to reduce government deficits. In the longer run he estimates that the reallocation of resources for moderate cuts in military spending can raise global GDP by around 0.4% per year forever. The asymmetry between countries that lose (those that cut most) and those that gain suggest a payoff to cooperation and burden-sharing during the adjustment process. McKibbin’s contribution also considers the problem of the movement of weapons into developing countries as a result of the reduction in defence spending in the industrial economies. It is argued that a system based on economic incentives compatible with raising regional security is necessary to prevent future regional conflicts.

“**Global Disarmament and Developing Countries: A MULTIMOD Simulation**” by **Bayoumi, Hewitt and Symansky** investigates what economic impact a coordinated worldwide reduction in military expenditure of 20% would have on developing countries. Simulation results indicate that the present value of cumulative increases in civilian economic activity is equivalent to 46% of 1992 GDP, compared to military expenditure cuts equivalent to 33% of 1992 GDP. The gains reflect both the release of domestic resources and a positive international economic externality due to enhanced trade and lower world interest rates. The gains to net-debtor developing countries are estimated to exceed those of industrial countries. Examination of the impact of cutting military expenditure on individual developing countries confirms the significance of external trade on the pattern and level of these economic benefits.

“**Multilateral Disarmament: Project LINK Simulations**”, by **Hung-Yi Li and Peter Pauly** presents simulation results of disarmament for some of the large spending countries based on the global econometric model system of Project LINK. The case for studying multilateral action is straightforward, they suggest, as increased international security cannot be secured by unilateral disarmament. Global economic effects of cuts in military spending are studied in two alternatives:

- (1) where fiscal deficits are reduced, and
- (2) deficit-neutral where income tax reduction recycle the savings to private households.

The results show that after an initial reduction in global trade and GDP, economic activity returns to baseline in the medium term while trade is stimulated in the medium to longer term. The deficit-neutral alternative produces smaller adjustments to the baseline in terms of negative short-run effects and medium-term positive effects on trade.

“Economic Aspects of Peacekeeping Operations” by Lawrence Klein and Kanta Marwah looks into the economic costs and resource requirements for maintaining a standing army of significant strength, one that could conceivably be adequate to the task of helping to secure world peace. On a world scale, the authors suggest, the costs are manageable without causing significant stress for the international economy, and the necessary resources could be made available.

Gleditsch et. al. Main Contributions

Overall, Gleditsch et.al. offers a very detailed and comprehensive history of efforts to secure a peace dividend. They explore numerous national and international case studies, and indicate the direction for future research.

One of the issues to be resolved, is the vested interests of some players in the arms production and exports industry. However, this subject is largely beyond the scope of this dissertation.

Other unresolved issues include those of political will as it relates to achieving a maximum peace dividend, ways of minimising the short-run adjustment costs of reduced military, and mechanisms for maximising the long-run gains. This paper will explore these issues further.

The U.N. Approach

An alternative significant resource for researchers of the peace dividend is the **United Nations Development Program (UNDP), *Human Development Report 1994*** (Overview) which recommends the achievement of “a new paradigm of development”.^{vii} The recommended agenda for achieving this new concept of development includes the following seven items:

- the establishment of a “ new world social charter” to establish a framework of equality of opportunity among nations and people
- the endorsement of a new development paradigm of sustainable human development - with economic growth centred on people and sustainable from one generation to the next
- a “20:20 human development compact” to implement targets for essential human development over a ten-year period (1996-2005)
- mobilisation of the peace dividend to enhance human security

- the establishment of a global security fund to address the common threats to global human security
- a strengthened UN umbrella for human development to establish a more integrated, effective and efficient UN development system, and
- the establishment of a UN Economic Security Council to provide a decision-making forum at the highest level for global issues of human security.

This dissertation will focus on the issue of the **peace dividend** and the impact on **resource reallocation** that these newly available funds will have.

In order to capture the **peace dividend** the authors argue for continued pressure for reduced global military spending, (a) to ensure that the poorest regions (as well as the developed regions) also cut down their arms spending and (b) to develop a firm link between reduced arms spending and increased social spending.

They recommend a six point action agenda for the achievement of reduced military spending:

1. Agree on targeted reduction in military spending for the decade 1995-2005 of, say, 3% a year
2. Make a clear, explicit link between reduced military spending and increased social spending
3. Persuade all nations to allocate a proportion of the potential savings to a global human security fund say, 20% of the peace dividend in rich nations and 10% in poor nations
4. Mandate the United Nations to maintain a list of sophisticated weapons and technologies that should not be exported at all, except under international agreement
5. Persuade the industrial nations to close their military bases, phase out their military assistance and eliminate their subsidies to arms exporters over the next three years
6. Request the United Nations to strengthen its reporting system under the UN Register of Conventional Armaments, so that up-to-date information on arms and technology transactions is published regularly.

However it could be argued that much of this action agenda flies in the face of economic and political realities, including vested interests in the arms industry which exert enormous pressure on political policy makers, the corruption which occurs in many LDC military governments, and problems which exist with regard to gaining compliance of the private sector and factual information on sophisticated weapons and technologies.

In order to achieve cooperation between the varied and often conflicting interest groups involved, the United Nations Human Development Report (1994) recommends a "more inclusive and more coherent" approach to development cooperation addressing issues such as foreign direct investment, international trade, capital flows and ODA.

The recommended UN approach encompasses:

1. Compensation for Damages - the UN advocates that industrial countries who impose restrictive practices should **compensate** developing countries who suffer as a result. Two cases where compensation may be appropriate are (a) restrictions on migration (of unskilled labour from developing countries) and (b) restrictions on trade (frequently in the form of non-tariff barriers) on exports from developing countries.
2. Payment to Developing Countries for Services to Ensure Global Human Security - poor countries assist with the security of the rich ones in several ways (a) environmental controls e.g. measures to preserve the world's tropical forests which in turn helps to slow global warming and maintain biodiversity. The UN argues that the world community should share the cost of their preservation. Similarly developing countries contribute less to the destruction of the ozone layer. (b) the destruction of nuclear weapons and converting armament factories to peaceful use falls disproportionately on some of the weakest countries. The UN recommends that since all countries benefit from the removal of a global nuclear threat, payments for this task should be made on the basis of an international compact, rather than by using ODA funds intended for developing countries. (c) controlling communicable diseases - clearly it is in the interests of all countries, and it is much more efficient to do this as a global joint venture rather than country by country. (d) controlling narcotics - because developing countries (the source of most internationally traded narcotics) receive only around 1% of the street price, it is reasonable to expect that measures to control supply in developing countries be matched by measures in developed countries to curb demand. Thus, rather than scattered national plans, the UN argues that "a truly global effort is needed".
3. New Funding Sources Being Identified- options include (a) demilitarisation funds - created from the cuts in military spending (**the peace dividend**) (b) pollution taxes through the use of tradable pollution permits (c) taxes on global foreign exchange movements to dampen speculative activity
4. Restructuring Aid - to focus more sharply on strengthening global human security. The UN recommends linking aid to specific objectives by negotiating a **global compact** for human development. One suggestion for implementing a global human development compact is through a **20:20** formula. This formula is based on shared responsibility whereby developing country governments allocate, on average, 20% of public spending to human development priorities while aid donor countries allocate 20% of their contributions to human priority expenditure.

5. The Establishment of a Global Social Safety Net - to ensure that international development cooperation is better linked with poverty and deprivation. The global safety net recommended by the UN comprises two elements: (a) aid allocations to be adjusted to the human development index of each country and (b) allocations to be modified according to the recipient's spending on defence - to ensure that the funds promote human development rather than permit greater arms expenditure.
6. Establishing a Balance Between Emergency and Development Assistance - to ensure that long-term development objectives are protected.
7. A Fundamental Reform of Technical Assistance - through giving the technical assistance funds directly to developing countries - and letting them decide how to spend the money, and/or through regional development cooperation.

Whilst the UN is to be commended for such a positive vision, the realism of their recommended approach to development may be questioned. That industrialised countries will respond to altruistic (rather than pragmatic) motivations i.e., agree to (particularly) points 1,2,3, and 5(b) above needs further substantiation.

This dissertation will contribute to an understanding of the feasibility of the UN approach by determining:

- the **extent** of available new funding sources (in particular, **the peace dividend**) and if such funds are available,
- the **mechanism for their distribution**
- the extent that **resource reallocation** occurs from military expenditure to social expenditure (on, for example, health, education, employment creation and the alleviation of poverty).

In the article entitled "**Capturing the peace dividend**", the **United Nations**^{viii} expresses disappointment at the failure of the disarmament process to reap its potential benefits.

"The disappearance of the cold war and the ensuing reduction in military spending led to an initial expectation that world disarmament would follow. Clearly this is not the case"^{ix}

To remedy this situation and further the world disarmament process, the following steps are recommended:

- Establish forums for disarmament
- Defuse tensions around the globe
- Phase out military assistance
- Regulate arms trade

- Design a new aid policy dialogue
- Agree on criteria for UN mediation in conflicts within nations
- Create more effective information systems

because, as they suggest “the cold war is not over yet - the job is only half done”^x

By this the UN means that reducing military spending is only half the task. A genuine improvement in human security requires that the resources saved - the “**peace dividend**” - be fully harnessed for human development. During 1987-94, the industrial nations appear to have cumulatively saved some \$810 billion, and the developing nations \$125 billion, producing a sizeable peace dividend of \$935 billion^{xi} The question, central to the peace dividend opportunity, is then asked: What has happened to the peace dividend?

Some of it has been absorbed by the costs of conversion from military to civilian activities. Another part has been directed towards the reduction of budget deficits. However it is unclear precisely where the savings from military spending are going. They are not being differentiated in national budgets, nor are they being sufficiently monitored.^{xii}

The suggestion by Arias for making the peace dividend “visible” is the creation of a Global Demilitarisation Fund. He argues that the Global Demilitarisation Fund would be an important step towards achieving human security first, in creating and using the peace dividend; second, by speeding and encouraging the process of demilitarisation, demobilisation, and conversion; and third, by helping less developed countries to further their own democratic and human development goals by making a portion of the peace dividend available to them.

The UN suggested approach for the creation of such a fund would require each country to credit the savings from reduced military spending to a separate demilitarisation fund. Such a fund would be likely to have three main calls on it:

1. reducing budget deficits
2. paying the costs of military conversion
3. investing in human development both at home and in other countries

These national funds would be complemented by a global demilitarisation fund as suggested by Oscar Arias.

Robin Luckman’s “Disarmament and development: a survey of the issues”^{xiii} focuses on the theme of “reallocation of resources for development”. He suggests that the scope for reallocation of resources is “amply demonstrated” by input-output simulations of the global economy, such as the Institute for Economic Analysis study summarised in the 1981 Report of the Secretary General on the Relationship between Disarmament and Development. Luckman also includes two additional simulations, one based on the UNITAD model of the

global economy which assumes major cuts in global military spending in the 1990's, and secondly a simulation based on the LINK model of the international economy, which illustrates that military cuts linked to aid increases, bringing the latter up to 0.7% of GDP by 1990, would result in a 1.7% GDP rise in the developing countries and a 0.2% rise in developed countries, provided that the all of the additional aid was spent on investment goods.

He argues that "all these studies come to essentially the same conclusions: namely that concomitant cuts in military spending and increases in Official Development Assistance (ODA) would both benefit developing countries and contribute indirectly to the prosperity of the developed countries, offsetting any short run economic losses that might result from disarmament".^{xiv}

However, Luckman adds that a number of provisos must be stated. Firstly, military cuts and development assistance would only have positive effects if supported by appropriate international measures, including trade liberalisation and easier money because the gains from disarmament "could all to easy be wiped out by non-tariff barriers on the developing countries' exports and increased interest and debt repayments of the kind already burdening the developing countries".^{xv} He also adds a precautionary note "that the extra resources generated by military cuts will not suffice by themselves to deal with the manifold problems of development".^{xvi}

Under a cost-benefit analysis of disarmament in developed countries, Luckman concludes that broadly speaking, empirical comparisons support the view that military spending has high long run opportunity costs, in terms of foregone productivity, investments, employment and growth. Over most of the period since World War II, the United States and the United Kingdom have spent consistently more on defence, relative to GDP than other industrial market economies. Their economies have also performed consistently worse. Conversely, Luckman argues, Japan and the Federal Republic of Germany have borne much lighter relative burdens, complementing their more dynamic economic performance.

Such comparisons by no means **prove** that low defence burdens make for good civilian sector economic performance. Yet at the very least, Luckman claims, they establish that military spending is not essential for economic prosperity. Moreover, he contends that they are supported by existing econometric analyses which have repeatedly concluded that military spending has competed directly with civilian productive investment.

With this in mind, Luckman undertakes a superficial exploration of the relationship between **cuts** in military spending and **economic performance**. He concludes that a great deal depends on how the savings generated by the cuts are made available to the civilian economy; whether through tax cuts, by reducing budget deficits, through higher welfare expenditures or by means of direct government investment in infrastructure and production.

Clearly, further work is needed in this area.

Chan and Sommer's article entitled "**Swords into Plowshares: Some Propositions on the Prospects of Peace Dividend**"^{xvii} contributes greatly to the peace dividend debate by taking a more analytical approach, also focusing on the **reallocative** aspects of resources freed up by reduced military expenditure. Their work recognises previous contributions to the debate, but adds a discussion of eight "pertinent political and economic factors that are likely to impinge on the conversion of the military sector to civilian use, and on the success of such attempts at reallocating a society's resources". Discussions of these eight factors centres around the following points:

- The end of the cold war has cross-cutting effects on armament spending (some countries have increased military expenditure, some have decreased depending on political leadership and economic conditions)
- Domestic incentives could sustain military spending in spite of the relaxation of international tension (as a result of the influences of vested interests, politically powerful minority groups)
- The types of military spending matter in addition to their level (e.g. personnel or R & D)
- Resource savings (resource dividend) from military cutback may not be fully or immediately translated into productivity gains (product dividend) because of the distinction between the direct, discrete, short-term impact of spending on specific defence allocations, and the indirect, cumulative, long-term impact of sustaining chronically high levels of military expenditures
- The nature and extent of product dividend depend critically on policy choice
- The relatively shorter electoral cycle (compared with the economic cycle) results in substantial political resistance by incumbent officials to undertake drastic fiscal austerity measures, including defence cuts
- Some countries are better positioned to realise product dividend than others (depending on the nature of existing economic structure, the extent to which defence industries are already involved in civilian production, and the efficiency with which a country is likely to further convert military resources into civilian production)
- Peace dividends could spread beyond one's borders and be captured by other countries (through its effects on trade competitiveness, currency stability and capital flows)

Chan and Sommer's more in-depth approach reveals the weaknesses of some of the more superficial examinations of the peace dividend. Whilst ideologically sound, many of the supporters of the concept of the peace dividend fail to come to terms with the political (as well as the economic) influences which impact on the **resource reallocation** process.

Whilst Chan and Sommer's article takes the more analytical path, it does not proceed to thoroughly explore all of the above eight issues. Rather it highlights a number of them (those regarding the political and economic incentives for perpetuating defence spending, those relating to the choice of alternative policy offsets, and the assessment of "spillover" effects on international trade competitiveness) for further research.

Malcolm Knight, Norman Loayza, and Delano Villanueva in their article "**The Peace Dividend: Military Spending Cuts and Economic Growth**"^{xviii} extend a standard growth model and obtain consistent panel data estimates of the growth retarding effects of military spending via its adverse impact on capital formation and resource allocation. Their simulation experiments suggest that a substantial long-run "peace dividend" - in the form of higher capacity output - may result from markedly lower military expenditure levels achieved in most regions during the late 1980s, and the further spending cuts that would be possible if global peace could be secured.

Whilst the model and empirical methodology used by Knight, Loayza and Villanueva is extremely useful in overcoming earlier methodological shortcomings, the major contribution of this article is its consideration of long-term global security issues. Although relatively brief, its focus on national peace and security as it relates to countries' opportunities for capturing the peace dividend takes the article beyond an econometric exercise into a discussion of the important prerequisite for disarmament - the attainment of peace.

D.R. Lee and R.K. Vedder, in their article "**The political economy of the peace dividend**"^{xix} examine the peace dividend within a political economy framework. They develop a model of the peace dividend and use it to predict the fiscal consequences of a reduction in the demand for military spending. The model is based on the assumption that the political process responds to political demands and costs in a way that maximises the net **political** benefits. Their predictions of how a peace dividend will be allocated over nonmilitary spending, tax relief, and deficit reduction is tested against experience of eight major wars in United States history.

Lee and Vedder's approach is very valuable because, unlike most studies of the peace dividend, it focuses on the issue of political will. Many researchers allude to the necessity for political will to enable the full capturing of a peace dividend, but in this article, the authors go that step further by constructing a model and undertaking an analysis of historical data, the results of which they use as the basis of their predictions.

Minoru Okamura's article entitled "**The welfare effects of disarmament on the United States under NATO and the Warsaw Pact**"^{xx} develops a model of disarmament by incorporating rationing theory into the theory of alliance. In order to provide an econometric measure of welfare gain from a disarmament treaty, s/he employs the cost functions predicated on rationed and unrationed demand systems. By combining the economic theory of foreign aid with that of alliance, s/he is able to examine the impact of disarmament on the developed economies' foreign aid to developing countries as a peace dividend. The model is applied in the case of the US economy under mutual disarmament between NATO and the Warsaw pact.

The results obtained indicate that the United States could enjoy a gain of 21.70 billion dollars from the disarmament treaty that imposes a 10% reduction in military expenditures on each nation, and 41.59 billion dollars gain from a 20% reduction. However the results also indicate that the United States could suffer a serious loss from unilateral disarmament of NATO, whereas it could enjoy a large gain from unilateral disarmament of the Warsaw Pact by optimally choosing its own reduction rate. In addition, a 1% reduction in U.S. military expenditures i.e., US\$3.011 billion, by the treaty induces an increment of US\$1.399 billion in aid to developing countries as a peace dividend.

Whilst focusing on the issue of the trade-off between military and economic growth, **Michael Ward, David Davis and Corey Lofdahl** enhance the debate on the peace dividend in their article, "**A Century of Tradeoffs: Defence and Growth in Japan and the United States**"^{xxi}, by showing how, over time, the economic impacts of military spending are composed of **two** parts, **externalities** (foregone economic growth) and **volume** (civilian goods and services foregone).

Using data which spans 102 years for USA and 106 years for Japan, they show that these two parts need not be identical, and not necessarily move in the same direction. In addition, they have used a methodology designed to reveal the dynamics of the two effects. By looking at the ways in which the positive and negative implications of defence spending ebb and flow, they show how the diverse findings in the literature may be accommodated and reconsidered, pointing the way to a general understanding of the diverse findings that incorporates **context** into the cases examined.

Their general contribution is to show that defence spending has both positive and negative impacts at different points in time and space. They suggest that the debate over whether defence is negatively or positively related to economic productivity is not, in and of itself, likely to be very informative, either in theory or to policy, because the effects change in size and direction rapidly.

The implication of their findings is that researchers conducting further examinations of the peace dividend need to consider both factors (volume and externalities) and the context (economic conditions and political policies) within which reductions in military are made.

Hartwig Hummel, in his article entitled “**Japan’s Military Expenditures after the Cold War: The ‘Realism’ of the Peace dividend**”^{xxii} examines Japanese data to assess the realists’ assumption that Japan will turn its economic potential into a corresponding military power. He finds that the data do not support this proposition, and that because of very strong public opinion opposing military buildup, it is unlikely occur in the future.

In another country-specific article **James Simmie’s “R & D and the ‘Peace Dividend’: A Review of the Implications for some Local Defence-Dependent Economies in the UK”**, examines the impact of reduced British military on the aerospace and electronics industries and the local regions within which they are located. He anticipates that with the demise of these industries in the Bristol subregion and the Thames Valley/Western Arc around London, professional scientific and technical employees will face declining employment opportunities, flowing down the division of labour and out into the surrounding local economy with multiplier effects of around 2.0.

Given the limited opportunities for these communities to diversify or regenerate, Simmie recommends national-level policies to effect the needed structural change.

In her article “**War and underdevelopment: Can economic analysis help reduce the costs**”^{xxiii} **Frances Stewart** outlines the routes through which war imposes human development and economic costs. Stewart presents a typology of wars and reviews the available evidence of 16 countries at war. The routes through which wars impose costs are traced with a view to identifying some policy interventions which can mitigate the economic effects. Feasible policies include interventions which help to alleviate the impact of war, such as providing food and relief to maintain social services, and those which mitigate against long-term costs by, for example, maintaining infrastructure. She suggests that the economic analysis of wars can assist in the design of policies to reduce the developmental costs associated with wars.

The value of Stewart's contribution is that she defines peace dividend opportunities at the macro, meso and microlevels, illustrating to policy makers and researchers where to direct their efforts.

In his article "**Budgeting for Disarmament: The costs of War and Peace**", **Michael Renner^{xxiv}** calculates and compares the costs of preparing for and conducting wars with the costs of disarmament and peace. **Renner addresses the heart of the war/peace problem.** He argues that to be ultimately successful, a comprehensive peace policy needs to combine measures that address the symptoms of conflict - the institutions and arsenals of the war system - with those that address the roots of conflict - the accelerating social, economic, and environmental pressures that cause unemployment, poverty, and dislocation and that set different communities, classes, and countries on a collision course with each other in a struggle for resources and survival. Working to reduce these pressures and to overcome the inequalities and divisions that are likely triggers of conflict will be a continual challenge for local, national, and international policymakers.

This article points researchers and policy makers in the general direction of much needed information gathering and analysis.

CHAPTER 3

ANALYTICAL FRAMEWORK

Introduction

Because the end of the cold war and the subsequent reduction in military spending is a relatively recent occurrence (from the late 1980's onwards), the concept of the Peace Dividend is a newcomer to the world of "development" economics. Until recently, most studies of military expenditure have focused broadly on the relationship between military expenditure and economic growth. However, with the shift in some circles of economic research to a more "global" approach, a new "paradigm" relating to the study of economics and development is emerging.

This new paradigm, a UNDP-mode, is characterised by a wholistic approach, focusing on the interrelatedness of economic, cultural, social, and political issues as they occur within and between nations. When this approach is adopted by the field of economics and development, issues such as people-centred development, sustainability, environmental responsibility, human equity, income distribution, production and consumption patterns, and economic growth as a means rather than an end, become priorities. This approach differs fundamentally from traditional approaches where development is concerned with maximising economic growth, from which all else follows. The Peace Dividend is one major spin-off of this new, overall approach to economics and development, and has the potential to deliver enormous benefits to both developed and developing nations.

With this trend towards a more broadly-based approach to economic research and its embracing of a multitude of relevant variables, researchers find themselves faced with a multitude of methodological decisions. Research into the peace dividend is typical of the "new" approach and highlights the complexity of such decision-making.

Consequently, when researchers move on from studies of the **determinants** of military expenditure, through the **effects** of military expenditure, and logically onto studies of the **outcomes of disarmament**, methodological decisions must incorporate factors which are specific to developed and developing countries.

These factors have been taken into account in my decision to adopt a **methodological approach for this dissertation** which comprises:

- (a) an analysis of data relating to patterns of individual national government's spending during the period 1985-1995
- (b) an examination of region-specific data (case studies) relating the reallocation of (peace dividend) resources
- (c) the identification of constraints which inhibit the capturing of the peace dividend
- (d) the deduction of policy recommendations to assist with the achievement of a maximum peace dividend and enhanced sustainable human development

United Nations Recommendations regarding the attainment of the Peace Dividend

Sustainable human development requires as a basic premise the achievement of human security, defined in its broadest terms. This embraces the notion of security in two forms:

- (i) safety from conflict, and
- (ii) safety from constant threats of hunger, disease, crime, repression and from sudden and hurtful disruptions in daily lives.

The UN also suggests that progress towards achieving sustainable human development requires

- (a) a new world social charter - to establish the framework of equality of opportunity among nations and people
- (b) a 20:20 human development compact - to implement targets for essential human development over a 10 year period
- (c) **mobilisation of the peace dividend** - to set concrete targets for reducing global military expenditure and for capturing the ensuing peace dividend to enhance human security
- (d) a global human security fund - to address the common threats to global human security
- (e) a strengthened UN umbrella for human development - to establish a more integrated, effective and efficient UN development system, and
- (f) a UN Economic Security Council - to provide a decision-making forum at the highest level for global issues of human security.^{xxv}

In order to **mobilise the peace dividend** (point (c) above), the UN recommends that human security be promoted at a global level, involving high level cooperation between industrialised and developing countries. The specific recommendations of the UN were listed earlier in this dissertation and include:

- (a) Agree on a targeted reduction in military spending for the decade 1995-2005 say, 3% a year
- (b) Make a clear, explicit link between reduced military expenditure and increased social spending

- (c) Persuade all nations to allocate a proportion of the potential savings to a global human security fund, say 20% of the peace dividend in rich nations and 10% in poor nations
- (d) Mandate the UN to maintain a list of sophisticated weapons and technologies that should not be exported at all, except under international agreement
- (e) Persuade the industrial nations to close their military bases, phase out their military assistance and eliminate their subsidies to arms exporters
- (f) Request the UN to strengthen its reporting system under the UN Register of Conventional Armaments, so that up-to-date information on arms and technology transactions is published regularly.^{xxvi}

It is probably too soon to evaluate the success of the UN's recommended course of action. However, an examination of both country-specific and regional data in the following sections of this paper may indicate the likely future success and highlight issues and constraints which need to be addressed.

Four Broad Schools of Thought

Studies of the peace dividend can be divided broadly into four schools of thought: Neoclassical, Keynesian, Institutionalist, and Marxist. A summary of the main points relevant to each approach follows.^{xxvii}

The Neoclassical approach views the state as a rational actor which balances the opportunity costs and security benefits of military spending in order to maximise a well-defined national interest reflected in a societal social welfare function. This approach treats military expenditure as a pure public good where the economic effects on military expenditure will be determined by its opportunity cost, the trade-off between it and other spending.

This general approach has the advantage of allowing the development of consistent formal models for empirical analysis. However, it can be criticised for being ahistoric, always able to justify observed actions, concentrating on the supply side, ignoring the internal role of the military and military interests, implying a national consensus and requiring extreme knowledge and unrealistic computational abilities of the rational actors - all points particularly relevant in the context of developing country economies.

The most influential neoclassical model is Biswas & Ram (1986), developed from Feder (1982). The new classical theorists use military expenditure as an important shock to the system, which can have dynamic real effects on output. There have also been attempts to introduce military spending into endogenous growth models (Berthelemy, Herrera & Sen, 1995).

The Keynesian approach sees a proactive state which uses military spending as one aspect of state spending to increase output through multiplier effects in the presence of ineffective aggregate demand. In this way, increased military spending can lead to increased capacity utilisation, increased profits and consequent increased investment and growth (e.g. Faini, Annez & Taylor, 1984).

The Keynesian approach has been criticised for its failure to consider supply-side issues, leading many researchers to include explicit production functions in their Keynesian models (e.g. Deger & Smith, 1983). It also makes assumptions about the **desirability** of military spending as a means of stimulating an economy (as opposed to other forms of public expenditure)

The Institutionalist approach. This radical liberal approach (Smith, 1977) is usually combined with a Keynesian perspective while focusing on how high military spending can lead to industrial inefficiencies and to the development of a powerful interest group composed of individuals, firms and organisations who benefit from defence spending, usually referred to as the military-industrial complex (MIC). The MIC increases military expenditure through internal pressure within the state even when there is no threat to justify such expenditures.

The Marxist approach sees the role of military spending in capitalist development as important though contradictory. Dunne suggests that a number of strands to this approach exist which differ in their treatment of crisis, the extent to which they see military expenditure as necessary to capitalist development, and the role of the MIC in class struggle. One offshoot of this approach has provided the only theory in which military expenditure is both important in itself and an integral component of the theoretical analysis, the **underconsumptionist** approach. Developed from Baran & Sweezy (1966) this sees military expenditure as important in overcoming realisation crises, allowing the absorption of surplus without increasing wages and so maintaining profits. No other form of government spending can fulfil this role. While this approach has been very influential in the general literature on economic development, empirical work within this approach has tended to be limited to developed economies.

These four broad-brush theoretical approaches can be further fine-tuned to reveal greatly enhanced information by researchers adopting a variety of techniques of empirical analysis. Techniques may be qualitative, quantitative, historical, institutional or some combination of these. In addition to this, researchers choose from among a number of time-periods for their studies, including short-run analysis, long run analysis, or analysis based on the time period for which data are available. Decisions also have to be made regarding sample selection, determining whether the research will focus on cross-country analyses, single country, or regional groups of countries. Furthermore, researchers then have to decide on the empirical

method to be used, choosing from regression, correlation, discriminant, and factor analysis.^{xxviii}

Methodological Approach

Background

This dissertation sets out to explore the peace dividend as it relates to two industrialised countries, the United States and France and two developing countries on the African continent, Ethiopia and Kenya.

These countries have been chosen because the United States has significantly reduced its military expenditure since the end of the Cold War, while France, with a large military-industrial complex, has not. The military policies of these two industrialised countries will then be compared with the policies of the developing countries to reveal significant peace dividend issues.

It is important to note characteristics and methodological issues specifically relevant to these two different types of economies. Firstly, the **determinants of military expenditure** will not necessarily be uniform across developed and developing countries. In developing countries, military expenditure is often independent of economic conditions and generated mainly by the internal logic of the state. The overall economic environment may provide a constraint on military burdens over time; but the importance of strategic factors, security and threat perceptions, both internal and external, has to be recognised. In estimating demand functions, the income variables need to be specified and the political and strategic influences quantified. Furthermore, the income effects of military spending in developing countries can also differ from those in developed countries: higher income can lead to structural changes, inequalities and hence conflict - requiring higher military spending to maintain internal control. As well, the type of government can affect military spending, with military governments most likely to be higher spenders, though it is unlikely that there will be a simple dichotomy between military and non-military governments. Similarly, the situation in developing countries will differ from developed countries as there is less likely to be arms production.

Overall, results of studies into the determinants of military spending are mixed, but they do tend to suggest that in developing countries economic conditions are not the main determinant of military burden.^{xxix}

Consequently, in analysing developing countries the specific nature of these countries will have to be taken into account, regardless of how formal the adopted methodological approach is. Indeed, with respect to developing countries, such factors lead to serious questions about the computational ability and rationality of actors assumed in formal neoclassical models.

Secondly, the **economic effects of military expenditure** may vary between developed and developing countries, and indeed may vary across a number of developing countries. The debate in the empirical literature on the economic effects of military spending started with the contributions of Benoit (1973,1978) which purported to show that military expenditure and development went hand in hand. Ball (1983) provided a comprehensive critique of Benoit's work, undermining the conclusions drawn. This led to considerable research activity using econometric analysis to overcome the deficiencies.

Three types of econometric studies are used:

Single equation analyses use economic growth as the dependent variable and military spending (burden, per capita or absolute) as the, or one of the, independent variable(s). Frederiksen and Looney (1983) re-examined Benoit's data, including more factors in the estimated equation and dividing the group of countries into resource constrained and non resource-constrained. The significant relation for military expenditure on growth held only for the resource-unconstrained group (negative for resource-constrained); similar results for an updated dataset are found in Frederiksen and Looney (1982). Several studies using other data have followed. Overall, this approach has generally found a positive or insignificant effect of military expenditure on growth.

Simultaneous equation systems emphasise the importance of the interdependence between military spending, growth and other variables. The majority of studies using this method tend to confirm the existence of negative impact of military expenditure on economic development.

Macroeconomic and other forms of world models are also used. A pioneering study by Loentief and Duchon (1980) used a macroeconomic model of the world economy to analyse the global effects of disarmament in the major powers and an ensuing transfer of the resources to low-income countries. The overall impact was found to be positive, though not particularly significant.

In recent years, the international implications of cuts in military spending have been examined in a number of global econometric models. The results differ in some detail, but not in the general long-run tendencies.

While it would be appropriate at this point to undertake a series of simulations using data relating to a number of case study countries or regions, my research has revealed two international simulations (LINK and MULTIMOD) which have already been completed, the details and results of which will be used in this paper.

The following section highlights some of the features of these two global econometric models, Project LINK and the IMF's MULTIMOD macroeconomic model. Chapter 4 presents and discusses the results. From the results of these macroeconomic models and other national and regional macroeconomic studies, a set of policy recommendations will be deduced.

The LINK Model.

Project LINK is a cooperative international research project and a forum for research on econometric methods and applications to the world economy and is located within the United Nations. Its major accomplishment has been the development of a global model system which links together macroeconomic models for 79 countries and regions. The LINK model is used to forecast the level and geographic distribution of world activity and trade and to analyse the impact of economic shocks or alternative policy scenarios on the international community. The model has grown since its inception in 1968 not only in geographic detail but in the scope of endogenous international linkages, which now include interest and exchange rates in addition to trade flows and prices. It will soon include invisibles in the current account. Its size has increased from 1,500 equations in 1972 to 22,000 today.^{xxx}

Developed Economies

The models for developed market economies included in LINK are basically disaggregated IS-LM systems of behavioural equations on the demand side. They include

- supply structures featuring production and factor demand functions
- labour supply equations
- Phillips-Curve determination of wages, and
- mark-up pricing equations

Some incorporate considerable industrial detail via input-output relationships. Most are large models comprising 200 or more equations.

Developing Countries

The models of developing countries also exhibit common characteristics. In general,

- industrial output is supply-constrained by available capital stock and non-fuel imports
- agriculture production is given special attention
- consumption and investment are demand-related and may also depend on import availability
- aggregate price level is usually a function of real money balances and foreign prices.

Under the LINK simulations the specifications of national models vary considerably in individual detail. No attempt is made to force a common mould on the indigenous models, on the basis of the guiding LINK philosophy that each modelling team knows its own country best.

In the LINK model the explanation of **real trade flows and prices** is decomposed into two stages.

(1) in stand-alone simulations of the national models, the import-demand functions explain their real imports, and their export prices are determined by other equations

(2) given a trade-share matrix for the world economy, the exports of each country are determined as the sum of its market shares in the imports of all other countries.

To ensure consistency in the simultaneous solution of the national and trade models, the real export quantities and import prices predicted with the share matrix are fed back into the national models until convergence is achieved.

Several routes exist by which changes in **foreign prices affect domestic prices and quantities** in the LINK country models.

1. Import prices are direct arguments in the equations for the sectoral final demand deflators, with coefficients depending primarily on the import content of the goods in question and the degree to which the prices of domestically-produced substitutes are affected by import competition.
2. In most of the models, import-led increases in consumer goods prices will induce additional wage increases and raise unit labour costs and prices generally.
3. Changes in the relative price of domestic and imported goods affect real imports and export, trade balances, and domestic absorption at given income levels, with resulting multiplier effects on prices and incomes, in conformity with the elasticities approach to equilibration of payments imbalances. In accordance with the absorption approach to balance-of payments adjustment and the Keynesian aggregate demand framework, real incomes and trade balances may also vary as a result of income-autonomous shifts in exports or imports, and import leakages may transmit income fluctuations abroad.

Monetary linkages are implemented directly for interest rates among some national models, and through an exchange-rate submodel for the major industrial countries.

MULTIMOD Model

The IMF's MULTIMOD macroeconomic model, a multi-region econometric model, was designed to analyse the economic interactions among industrial and developing countries. It is regularly used in the Fund's work in the *World Economic Outlook*.

Three features of the model are particularly important for analysing the effects of multilateral disarmament.

1. It is a rational expectations model: which means, for example, that consumption and investment depend on expectations about future income, and the movement of future prices, interest rates, and exchange rates affect their values
2. It has a well-defined supply side based on a production function, so that changes in investment feed through into higher potential output in the future
3. The trade equations take account of the geographic distribution of trade across different economies.

The main linkages among the regions are through trade, exchange rates, and interest rates. Imports of the industrial and capital-exporting developing countries are functions of relative prices and aggregate demand, while imports by other developing countries depend upon the amount of available foreign exchange. Short-term interest rates depend on monetary policy through the money demand equations, while long-term interest rates are a moving average of current and expected future short-term rates. Nominal exchange rates are determined by relative interest rates.

In the version of MULTIMOD by Bayoumi, Hewitt and Symansky^{xxx} used for this paper, domestic aggregate demand in developing countries is modelled in a relatively simple manner, with **non-oil developing countries** assumed to face a constraint on borrowing from abroad. This constraint depends upon their ability to service loans in the future, becoming less severe as interest rates decline or as exports increase. The authors use behavioural equations to determine the level of exports and total consumption (the sum of government consumption and private consumption). The levels of imports and investment are then calculated as residuals, given the behavioural equations for external finance and for internal supply of goods, respectively. The **oil-exporters** have a similar underlying domestic framework. As the main suppliers of oil, exports reflect the balance of demand and supply in the oil market, and imports reflect the difference between absorption and the aggregate supply of goods for the home market. In both developing-country sectors, output is assumed to equal underlying supply, which in turn depends upon factors such as export performance.

Overall, this version of MULTIMOD represents developing-country groups fully modelled in a forward-looking manner, with consumption and investment reacting to anticipated changes in economic welfare. The major difference between the developing countries and the industrial countries is the flexible external financing constraint on the developed economies. In other respects, the empirically determined parameters indicate that developing countries behave in a manner similar to industrial countries.

Limitations of the MULTIMOD framework

- (a) the model includes very broad classifications of alternative forms of government expenditure and revenue.
- (b) since the model relies on aggregate national production functions, this precludes consideration of sectoral dislocations which normally accompany the switch from military to civilian spending.

Thus, the structure of the model does not permit an in-depth analysis of conversion issues or the distributional and social consequences which will accompany such a major reallocation of resources. Because of these limitations assumptions are needed as to how to use the released resources.

In the simulations under consideration, it is assumed that lower military spending leads to a decrease in personal and business taxes by an amount that leaves the long-term level of the deficit unchanged in proportion to GDP. Alternatively, if the resources were used for higher government spending, the economic gains would depend upon the relative mix between consumption and investment, and on the efficiency of the investment. Assuming the same split between consumption and investment as the private sector and market rate of return on public investment, the economic gains from raising non-military spending so as to leave total government spending unchanged would be similar to those reported in the simulations where taxes are cut.

The results of the LINK and MULTIMOD simulations relating to disarmament are included in Chapter 4. In chapter 5, conclusions will be drawn regarding the attainment of the peace dividend, and recommendations will be made relating to how it might be optimised.

CHAPTER 4.

RESEARCH RESULTS - THE SIMULATIONS.

The purpose of this chapter is to draw on the simulated experiences of individual countries and regions throughout the world in order to distil from them the likely success of future attempts to capture the peace dividend. Having done this, chapter 5 of this dissertation will examine the evidence relating to four case-study countries.

Drawing on the results of both the national and regional simulations and the four case studies recommendations will be made concerning measures to

- (a) maximise the peace dividend
- (b) overcome constraints to the achievement of a maximum peace dividend, and
- (c) use it to achieve sustainable human development.

In this analysis, the pattern of military spending that existed prior to the end of the Cold War (1987-89) will be used as the basis.

Results from two alternative macroeconomic approaches will be used in this chapter - Project LINK model simulations and MULTIMOD model simulations, as well as results from numerous national and regional studies.

The Magnitude of the Peace Dividend

Before presenting the econometric simulations of the peace dividend, it is valuable to specify its magnitude:

- * Most of the reductions in military spending have been in the industrial countries. Between 1987 (when military spending peaked) and 1991, global military spending fell from \$995 billion to \$855 billion, yielding a cumulative peace dividend of \$140 billion.
- * In the industrial countries, the drop was from \$850 billion to \$725 billion (almost 15%); in the developing countries, from \$145 billion to \$130 billion (10%).
- * Projections of continued reductions (See Table 4.1) yield a cumulative peace dividend of **\$US933 billion** during the period 1987 to 1994^{xxxii}.

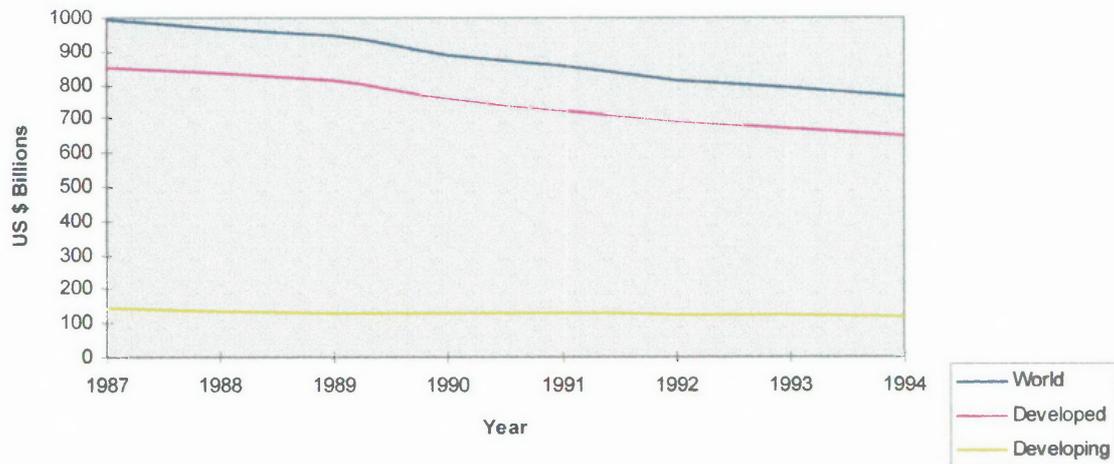
A peace dividend of this magnitude presents global policy makers with an enormous opportunity to use these previously-military resources to achieve sustainable human development.

Table 4.1 Global military expenditures and the peace dividend

(US \$ Billions in 1991 prices and exchange rates)

	1987	1988	1989	1990	1991	1992	1993 (est)	1994 (est)	TOTAL 1987-94
Actual milex									
World	995	970	945	890	855	815	790	767	7,027
Developed	850	835	815	760	725	690	669	649	5,993
Developing	145	135	130	130	130	125	121	118	1,034

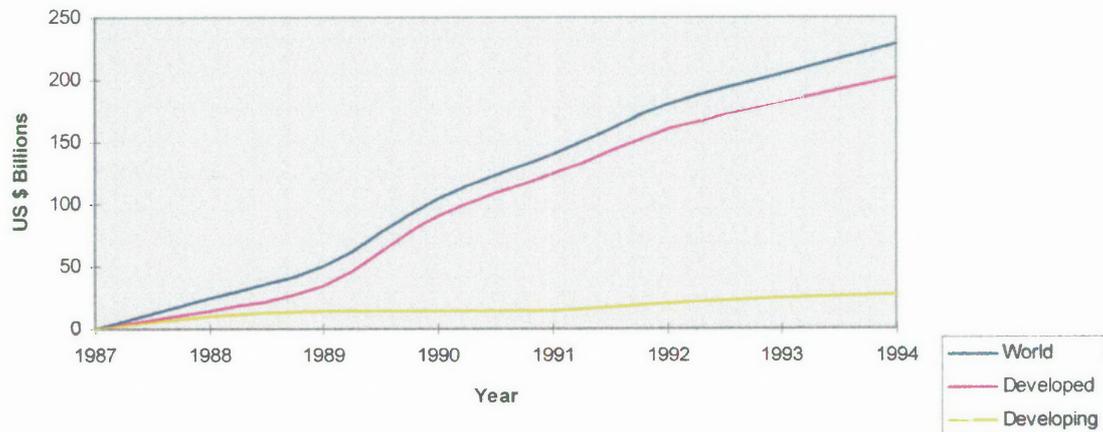
Actual Milex



Actual cumulative peace dividend

World	0	25	50	105	140	180	205	228	933
Developed	0	15	35	90	125	160	181	201	807
Developing	0	10	15	15	15	20	24	27	126

Actual Cumulative Peace Dividend



Capturing the Peace Dividend - Some Empirical Results

1. The LINK Model.

In an attempt to evaluate the orders of magnitude of the international economic effects of further disarmament, the LINK system has been simulated to examine coordinated multilateral spending cuts in a large number of industrial and developing countries.

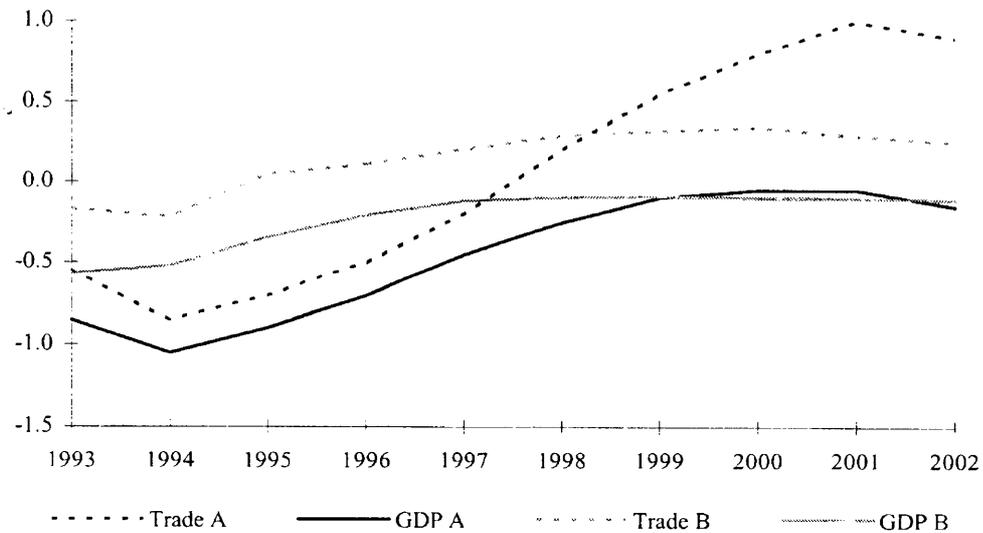
Specifically, cutbacks were implemented for 14 industrial countries, 3 developing countries, and Russia. These countries include most of the large spenders on millex. Because the current level of spending across countries is diverse and assumptions about reductions in uniform dollar amounts would not be appropriate, the subsequent analysis assumes that in all countries the **1993 shares of military expenditure in GDP would be reduced by 25%, commencing in 1994.**

These reductions have been analysed under two alternative reallocative scenarios:

- A.** all spending reductions are being used uniformly for **deficit reductions**, i.e. they reduce the net claims of public sectors on capital markets and therefore, large interest-rate reductions can be expected, and
- B.** in the major industrial (G-7) countries **income tax reductions** are used to recycle savings to private households. In this case private consumption spending can be expected to cushion the contractionary fiscal policies.

Figure 4.1 summarises the effects on world trade and world GDP, relative to the LINK baseline projection, under both assumptions^{xxxiii}. While the orders of magnitude are somewhat smaller in B (the deficit-neutral case), the adjustment paths are quite comparable.

Figure 4.1 World Trade and World GDP, 1993 - 2002 (%) - Case A Deficit Reduction and Case B Deficit-Neutral



During an initial period of about five years the negative effects of disarmament dominate. Following this, World GDP will return to its baseline path, led by an improvement in World trade. In fact, in the long run, and under slightly accommodating discretionary policies, the overall macroeconomic effects are unambiguously positive, and in models that focus on forward-looking elements on international capital markets both the turn-around and the long-run implications tend to be even slightly more favourable.

2. The MULTIMOD Model

The Bayoumi, Hewitt and Symansky "main case" simulation (they also studied four variations which are reported later) investigated the economic impact of all countries simultaneously reducing the millex by 20%, phased in five equal annual increments. This represented a total drop in government spending of 0.7% of GDP for industrial countries and 0.6% of GDP for non-oil-exporting developing countries, based on expenditure patterns in 1987-89. Each nation also lowered its military exports and imports by 20% phased in over five years.

Aggregate Results.

Table 4.2 summarises the simulation results for the main case.

Table 4.2 Sample Simulation Results: Main Case, Deviation from Baseline (%).

	Govt Consumption	Private Consum	Private Invest	Total demand	GDP	Real Exchange Rate	Exports	Imports
Developing countries								
Year 1	-1.1	0.1	0.4	0.0	0.0	-0.1	0.1	0.1
Year 5	-5.5	0.5	1.7	0.0	0.1	-0.3	0.5	0.2
Year 10	-5.5	0.8	2.1	0.3	0.2	0.4	0.3	0.8
Industrialised countries								
Year 1	-0.7	0.0	0.5	0.0	0.0	-0.1	0.1	0.2
Year 5	-3.9	0.8	1.6	0.1	0.0	-0.1	0.7	0.8
Year 10	-3.9	1.0	1.8	0.3	0.3	-0.2	0.6	0.6

In the main case, developing countries are found to have a small **increase** in GDP in the first year. There is no short-term economic downturn because the permanent decrease in taxes, increase in wealth, and other factors induce an immediate rise in private consumption (0.1%) and investment (0.4%) which together exceed the drop in millex, leading to a net increase in GDP. As well, the initial increase in private demand strengthens over time as military spending is reduced further, so that after five years the increase in consumption and investment is more than five times the first year increase.

The gains continue after military expenditure stabilises in proportion to GDP, so that after ten years consumption is 0.8% higher, investment 2.1% higher, and overall GDP is 0.2% higher.

This significant rise in civilian economic activity in developing nations from a coordinated decrease in world military spending is caused by both domestic and foreign economic events. **Domestically**, the saving from millex is used to lower individual and business taxes which provides a direct stimulus to the private sector. The lower domestic real interest rates caused by lower government spending also increase private sector investment and consumption through improved business prospects and increased household wealth. However, these increases in private sector consumption and investment tend to be detrimental to the current account. In order to rectify this, the real exchange rate tends to depreciate, leading to higher net exports.^{xxxiv}

The **foreign** stimulus arises from two sources. Firstly, as all nations experience a fall in domestic interest rates due to their lower military spending, there is a fall in world interest

rates. This tends to reduce interest payments on foreign debt and loosen the external financing constraint on developing countries, which further stimulates private consumption and investment. Secondly, since the military sector can be thought of as a relatively domestically oriented activity for the industrialised nations, civilian consumption and investment are, on average, more import-intensive than military expenditure. As a result, a decrease in military spending by the industrial countries stimulates their demand for imports from developed countries. For these reasons, decreasing millex by one country has a positive economic externality on the country's trading partner, and indeed all (net debtor) countries through downward pressure on world interest rates. These effects tend to improve the external position of a country, which allows the exchange rate to appreciate, boosting domestic expenditure as real imports rise by more than real exports.^{xxxv}

Since coordinated reductions produce cuts in both domestic and foreign millex, the overall effect on the external position depends on the relative importance of the domestic and foreign cuts. In the main case simulation, the overall effect is slightly negative and results in a depreciation of the real exchange rate for developing countries. Because of this depreciation, real exports rise by more than real imports over the medium term as total absorption rises by less than output. In the long run, lower world interest rates ease the external constraint, allowing the real exchange rate to appreciate, imports to increase, and absorption to rise by more than output.

Four alternative scenarios presented by Bayoumi et al also reveal significant results. The first scenario analyses the effect of an alternative financing assumption. The next two scenarios examine how the phasing of the cuts in military spending affects the results, while the last alternative scenario assumes that part of the reduction in millex comprises productive investment, with cuts in millex having a direct negative impact on the capital stock and hence on underlying output.

The results from these scenarios are summarised below.

Table 4.3 Sample Simulation Results: Variants, Deviations from Baseline(%)

	Govt consum	<u>Main Case</u> Demand	Inv	<u>More Mil. Aid</u> Demand	Inv	<u>Faster cuts</u> Demand	Inv	<u>Cuts not Antic.</u> Demand	Inv	<u>Part Invest.</u> Demand	Inv
Developing countries											
Year 1	-1.1	0.0	0.4	0.0	0.4	-0.3	0.9	-0.1	0.2	0.0	0.3
Year 5	-5.5	0.0	1.7	0.0	1.6	0.4	2.3	0.2	2.1	0.0	1.1
Year 10	-5.5	0.3	2.1	0.3	2.0	0.4	2.0	0.3	2.2	0.2	1.4

Industrialised countries

Year 1	-0.7	0.0	0.5	0.0	0.5	-0.4	0.9	-0.1	0.2	0.1	0.9
Year 5	-3.9	0.1	1.6	0.1	1.6	0.3	1.9	0.1	1.9	0.0	1.0
Year 10	-3.9	0.3	1.8	0.3	1.8	0.3	1.8	0.3	1.9	0.2	1.2

Alternative Scenario 1 - More Military Aid. When the level of foreign financing provided to importers of military goods was increased to 80% instead of 40% as assumed in the main case, the economic welfare gains to developing countries were 70% **lower**. Thus, the extent to which military imports are foreign-financed or paid for directly by the importer has a noticeable but modest impact on the results. This is because the trade component of milex is modest, even for the developing countries. The economic welfare gains come mostly from the lower domestic consumer and business taxes, lower domestic and world interest rates, and the increased demand for exports from industrial countries.

Alternative Scenario 2 - Faster Cuts. This scenario shows the results when the full 20% military spending cuts occur immediately, rather than being phased in steadily over five years. This provides insight into the importance of the assumption that the spending cuts are phased in over time. This simulation produced a significantly larger initial decline in real absorption (and output) than in the main case scenario, reflecting the larger reduction in demand in the first year of the simulation. This is most striking in the case of the USA, which implements the largest cuts in both absolute terms and as a ratio to GDP, and where absorption and GDP fall by 0.9% and 0.8% in the first year, respectively.

The simulation shows that these negative effects are short-lived, however, and GDP recovers rapidly. The speedy recovery reflects the response of investment and private consumption. Larger short-term reductions in milex free more resources for the private sector, and both private consumption and investment rise by more than in the main case scenario. These benefits continue in the medium-term; both absorption and investment are considerably higher than in the main case, both initially and after five years, particularly in the developing-country regions. The results after ten years indicate very long-term impact from changing the speed of the cuts in milex. As might be expected, the differences in behaviour are particularly important in those regions where the milex cuts are the largest, such as Africa, Other developing countries, the USA, and the NIE's. Welfare in developing countries rises by 10% more than in the main case, while the corresponding figure for industrial countries is 5%.

Alternative Scenario 3 - Cuts Not Anticipated. This variant shows the results when the future cuts in milex are not anticipated by individuals, while the main case scenario assumes that individuals correctly anticipate the path of milex cuts. Since consumers and investors are forward-looking, in the main case they anticipate the beneficial effects of future cuts in milex, which causes an immediate rise in both consumption and investment. By contrast, in this variant consumers assume that current levels of milex will be maintained in the future.

Larger short-term losses in absorption and output are experienced than in the main case, as the failure to anticipate future spending cuts causes smaller increases in private consumption and investment. However, these short-term losses are balanced by medium-term gains, as consumers and investors react to unexpected additional cuts in millex. The failure to anticipate the future reductions in millex reallocates some of the benefits to private consumption and investment from the short to the medium term; however the impact on long-term welfare is negligible.

Alternative Scenario 4 - Part-investment. In the part-investment scenario simulation, part of the spending cut on military goods was in the form of a decline in productive investment. While it is now well established that certain types of government expenditure can promote productivity, the extent to which millex enhances productivity has been hotly debated. This scenario raises the question relating to the extent to which the military has a positive effect on civilian productivity. This simulation assumed that 20% of the reduction in millex in the industrial countries constituted a cut in productive investment, together with 10% of the cuts in developing countries. Thus, 90% of the spending cuts were assumed to be equivalent to government consumption and 10% to productive government investment.

The main effect of the simulation was to reduce the long-run welfare gains from cutting millex, because part of the increase in civilian investment brought about by lower taxes and interest rates is offset. The short-run path of output is very similar to the main case, particularly after the first year, however, the longer-term gains were smaller. By the year 2002, investment in developing countries had increased by 1.4%, compared to 2.1% under the main case scenario. Hence, while the short-term impacts of the spending cuts are similar, the long-term benefits are lower. The present-value calculation indicated that the economic welfare of developing countries rises by 36% of 1992 GDP - approximately 20% lower than in the main case. A similar effect occurred in the industrial countries.

Results

Overall, Bayoumi et al found substantial long-term economic gains to developing countries from cutting military expenditure, as well as an immediate boost to civilian economic activity commensurate with the size of the cuts in millex. However, the short-run effects on total output, which includes military expenditure, is ambiguous, depending on the underlying level of military spending as well as other assumptions. Cutting military spending by 20% worldwide could produce a long-run increase in private consumption of 0.8% in developing countries and 2.1% in private investment. These gains in turn produce a rise in economic welfare, which is estimated to be USD 1.45 trillion in 1992 prices, or 46% of 1992 GDP.

Their results also show that for individual developing countries, welfare gains are affected by various factors. Larger gains in welfare are associated with larger cuts in military spending, larger cuts in military imports, higher ratios of commodities exports, and close bilateral links with the USA. On the other hand, triangular patterns of trade in which countries import from Japan and export to the USA are associated with lower welfare benefits, due to an unfavourable terms of trade effect. Overall the developing region which benefits most from cuts in millex is Africa.

These results are relatively unaffected by the timing of the spending cuts or expectations about the future, although such factors do have an impact on the size of the short-term losses in output. If the 20% cut in millex is collapsed into one year or if the initial decrease is perceived to be a one-shot event, the short-term decrease in GDP is larger. Thus it is clearly possible that decreasing millex can have significant short-term negative effects on GDP growth, depending on the exact circumstances. Regardless, they found that cutting military expenditure leads to an immediate short-run boost in civilian economic activity in all scenarios.

When 10% of developing country and 20% of developed country cuts in millex are assumed to represent a fall in productive investment, the estimated gains in economic welfare are seen to fall by around 20%. Whereas the extent to which military expenditure has productive side-effects determines the level of long-term gains, it does not alter the general direction.

Finally, they conclude, that since these simulations are based on a 20% reduction in millex as a ratio to GDP, and actual world millex has reduced by between 25% to 30%, these simulations tend to underestimate the size of the cuts which have already occurred.

3. The US Experience

The United States has been chosen for this study because it has shown leadership in reductions in millex.

The Simulation

Coen and Hickman's simulations^{xxxvi} estimate the potential macroeconomic impacts of reduced levels of defence expenditure on the US economy during 1996-2004 and considers some alternative uses of the peace dividend. The outcomes of their simulation are presented below.

In general terms, the simulation indicates that a peace dividend is available to the US economy as a result of reduced millex, albeit with initial adjustments to the fiscal shock.

Effects on Output and Employment

Coen and Hickman conclude that the US economy displays considerable resilience to demand shocks. They suggest that automatic fiscal stabilisers, the monetary authority's reaction function, and exchange rate adjustments all work together to moderate the impact of disarmament on real output and employment. Coen and Hickman's simulation indicate that the impact multiplier for a reduction in defence spending, accompanied by a reduction in the federal deficit, is approximately 1.5, however, the multiplier rapidly declines to 0.5 after one year and 0.2 by the ninth year. A large reduction in defence spending accomplished in a single year can be painful initially, but the economy's built-in policy and market adjustment mechanisms soon operate to reduce the losses in aggregate output and employment. They found that a gradual cutback in defence spending, e.g. 4% per year, is more easily absorbed, because the damped effects from past reductions help to offset the larger impacts of current reductions. Coen and Hickman note that for either a large reduction executed in one year, or the same reduction achieved gradually over several years, it is notable how quickly the economy adjusts to absorb the shocks and how modest the losses in output and employment are after initial setbacks - even when the peace dividend is devoted to deficit reduction, which is the least favourable policy option with regard to macroeconomic stabilisation. The small losses of output associated with the gradual reductions of defence spending can be eliminated almost completely if they are offset by equivalent increases in federal non-defence spending or by equivalent reductions in taxes.

Effects on the Composition of Output

Coen and Hickman found that the recovery of aggregate output following a decline in defence spending accompanied by deficit reduction occurs mainly because of increases in net exports. They found that apart from the modest output and employment losses, domestic consumption and investment are permanently reduced. They cast doubt on whether the benefits of deficit reduction and of increased net foreign investment would generally be regarded as great enough to outweigh the losses of reduced home consumption and domestic investment. They suggest that if the peace dividend were used to increase other government spending, the composition of output would remain virtually unchanged, except for the shift from military to civilian programs within the government. Households and businesses are likely to experience the greatest gains from the peace dividend if it is devoted to tax reductions, because in that case the recovery of real output would be accompanied by increases in domestic consumption and investment.

Limitations to the Coen-Hickman simulation

The authors warn that while tax reductions appear to be a relatively appealing way to use the peace dividend in their simulations, it is necessary to bear in mind some important limitations of most macroeconomic models for studying alternatives. In particular, a model such as the one used here cannot do full justice to the potential impact of increased public investment on economic growth. Government investments in areas such as infrastructure, education, and scientific research are not separately accounted for, and their potential effects on aggregate output are not included in their production framework. The result of this is that they may be missing a significant channel by which the peace dividend could augment private consumption and investment in the long-term, even if it were devoted to increases in other spending by the federal government.

4. The French Experience

France has been chosen as an example of a developed country with a large military industrial sector, with a high level of arms exports.

The simulation

The simulation to be reported below, was carried out by Thierry Baumgart and Catherine de Montlibert of the French Planning Office^{xxxvii} using the PROTEE Model, a quarterly model designed for studying long-term effects by introducing supply considerations. Three scenarios were considered:

- (1) a simple disarmament run for the period of 1996-2005
- (2) a scenario which takes into account the additional effect a reduction in military exports would have on French exports of military equipment, and
- (3) a scenario which assumes that the production capacity of the defence industry can only be converted to civilian production gradually, in this case after one year only 20% of unemployed production capacity of defence industries have been converted to other uses.

Results from the three simulations are summarised in Figures 4.7 and 4.8.

Figure 4.7 Effects on GDP (in Constant Prices) of Reduction in Military Expenditure 1996 - 2015. Deviations from Baseline (%)

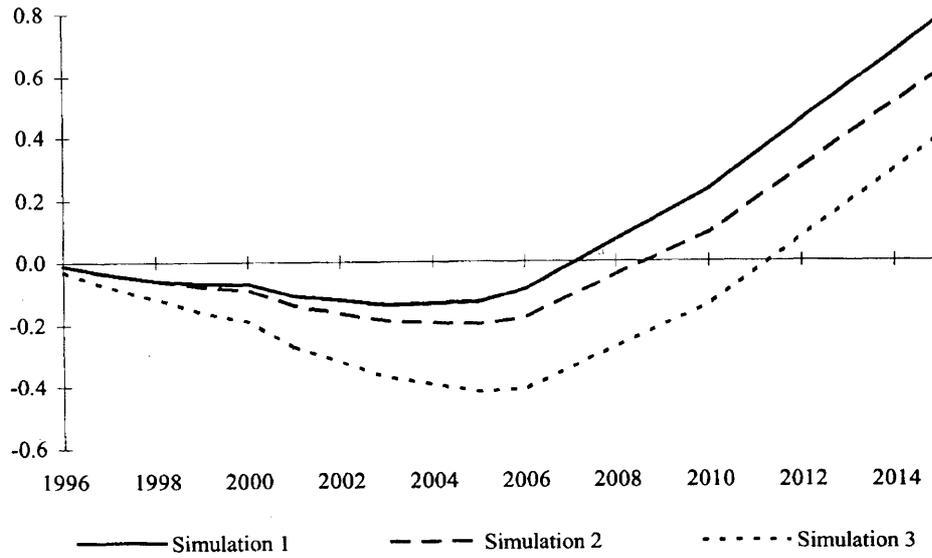
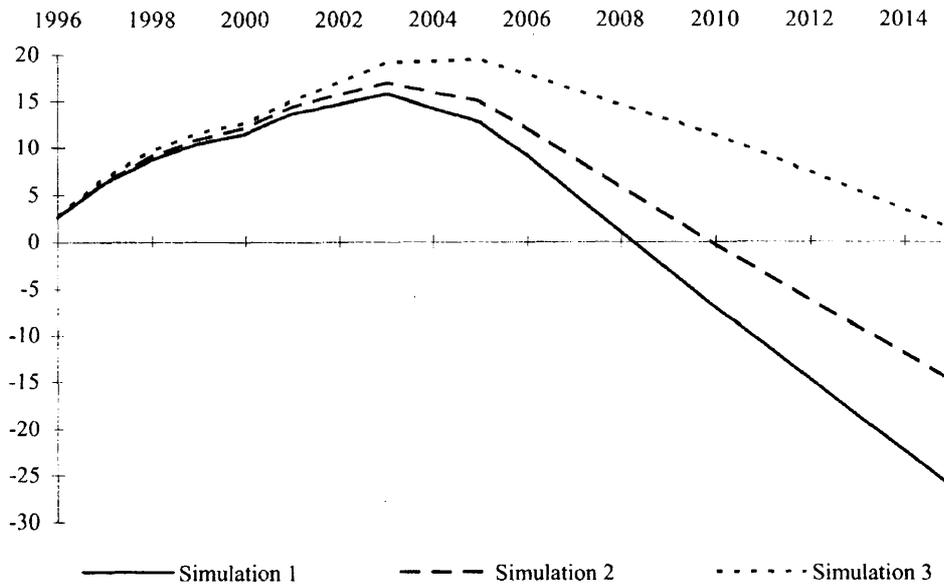


Figure 4.8 Effects upon Unemployment of Reductions in Military Employment 1996 - 2015. Deviations from Baseline (1000 Person)



Results.

Scenario 1 - Simulating Disarmament.

In the short term, the Keynesian effects prevail and the ex-post impact is lower activity, a decrease in real GDP and total employment and an increase in unemployment. However, an

increase in exports reduced the importance of the decrease in effective demand. The increase in exports was due to a reduction in the domestic demand for tradeable goods and an increase in exports of manufacturing products.

After five years, a decrease in exports was observed. Baumgart and de Montlibert suggest that this was due to another supply effect: a decrease in activity reduces business profits and, consequently, business investment. In turn, this leads to a slower increase in capital stock and a slower increase in the potential output and production capacities of manufacturing. This decrease in capacities reduces exports and increases the negative impact on activity and real GDP.

In the long term, the authors found that the impact of disarmament on activity becomes favourable. From the thirteenth year on, the impact on activity and real GDP becomes positive, and in the twentieth year, in 2015, they found an increase of around 0.8% of real GDP. At this point, the reduction in military spending is decreasing unemployment rather than increasing it. The impact of the reduction in military spending after fifteen years appears quite favourable, as it increases real GDP and total employment, decreases unemployment, reduces the public deficit and improves the current balance.

Scenario 2 - Reducing Arms Exports

In this simulation, Baumgart and de Montlibert assumed that the reduction in military spending which reduces the production of the French defence industry, will reduce French exports of military equipment.

The results of the simulation show that due to the unfavourable impact on exports, the decrease of the GDP in the short term is larger and the positive impact after fifteen years is smaller. After twenty years, the net positive impact on GDP is only 0.6% as compared to 0.8% in the first simulation. The impact on unemployment becomes positive only after fifteen years, instead of thirteen, and the impact in 2015 is a decrease of only 14,800 unemployed people compared with a decrease of 26,300. See figure 4. .

The positive effects on the external balance and the current balance are also smaller in this simulation.

Scenario 3 - Limited Conversion of Military Production Capacities

The third simulation assumed that the production capacity of the defence industry could only be converted to civilian production gradually. After one year, only 20% of the unemployed production capacities of the defence industries could be absorbed.

The first consequence was an unfavourable effect on GDP. The short-term negative impact was found to be larger than in the other simulations, and the positive impact was smaller in the long-term. After twenty years, GDP rose by only 0.4%, see Figure 4. . Compared to the first simulation, the long-term positive effect was halved, but Baumgart and de Montlibert suggest that it would have been reduced even more if they had assumed a higher impact on military exports through a reduction in government military spending or that the unemployed production capacity of the defence industry could not be converted at all.

In this simulation, the impact on employment was also less favourable. It was only after twenty years that a decrease in unemployment relative to the baseline was evident.

Conclusions.

Three conclusions emerge from these simulations.^{xxxviii} First, while a reduction in government spending has an unfavourable impact on GDP and employment in the short-term, it has a favourable impact in the long-term. Reducing *milex* reduces the public deficit (and in the long-term interest rates) and enables a revamping of the public spending structure. In particular, it allows for the reduction of taxes and an increase in public investment.

Secondly, the favourable impact in the long-term - especially for GDP and employment - appears slowly, only after thirteen years in Simulation 1 and after more than twenty in Simulation 3.

Thirdly, the size of the results - particularly for GDP and employment - depends on several conditions; for example, whether released capacity of the defence industry can be rapidly used and the impact on military exports of the reduction in military spending.

From a purely economic point of view, Baumgart and de Montlibert conclude that a reduction in *milex* will have a favourable impact on the French economy. They suggest that whether this gain outweighs the possible loss in defence capacity is a difficult political choice since that favourable impact on the French economy is limited by various assumptions and will appear quite slowly.

5. Developing Countries of the African Continent

The Peace Dividend in Developing Countries.

Disarmament and the capturing of the peace dividend in developing countries requires a special approach. While relatively meagre absolute amounts of money are being spent on military expenditure in developing countries, the proportions as a percentage of GDP are high,

and most remarkably, these funds are being spent whilst basic human needs are unmet. The work of J. Paul Dunne^{xxxix} suggests that military spending in developing countries is determined mainly by strategic (rather than by economic) factors. Opposition to reduced military spending will be caused by ongoing civil and regional wars, highly militarised security forces, military regimes, the use of the military for internal repression, and ethnic/religious conflicts. Institutional structures within developing countries will also provide opposition to cuts. While few developing countries have an arms industry of any magnitude, they do have a form of “military-industrial-complex” which will resist cuts. Bureaucrats, politicians, salespeople, importers, corporate interests, managers and workers, all benefiting from the import of weapons and the maintenance of a strong military group will dismiss the negative impact of their activities on scarce foreign reserves and the sustainable human development of their fellow citizens. Their “power and resilience” are helped by foreign companies’ hard selling techniques and the well-known corruption surrounding the arms trade.

In the short-run, unemployment may result from demobilisation and reduced numbers of related civilian workers and indirect employment effects. There may be a decline in companies involved in arms production and imports. There are also likely to be effects on local communities dependent on bases or factories.

However, despite the perceived or real opposition, evidence suggests that the “**potential** for developing countries to cut military spending with, at worst, no harm to economic performance and, at best, higher economic growth”^{xi} clearly **exists**. Results of studies reported by Dunne suggest that disarmament need not be costly, and can indeed provide an opportunity for improved economic performance.

As with the industrial nations though, adjustment costs will occur and policies of conversion will be required at the national and international levels - including assistance from the developed world.

Kaldor (1991)^{xii} argues that the potential for a peace dividend for the developing world remains, but only as part of an international policy for disarmament and development, and only when supported by sincere political will.

CHAPTER 5

RESEARCH RESULTS - CASE STUDY COUNTRIES - USA, France, Ethiopia and Kenya.

In order to test the validity of the simulated results above, the above four countries have been chosen as case studies where data relating to government expenditure on defence, patterns of government expenditure, patterns of private consumption expenditure and government deficits will be used in order to ascertain if a peace dividend has been achieved, and if so, how it has been spent.

The data is listed as follows: firstly, data relating to levels of government expenditure on defence as illustrated in Tables 5.4, 5.8 and 5.12 below indicate the trend in *milex* and the subsequent release/non-release of resources for alternative uses. Secondly, data relating to the distribution of total government expenditure as in Tables 5.5, 5.9, and 5.13 are used to ascertain the pattern of resources reallocation (if indeed it has occurred), i.e., the extent to which the peace dividend has been used for health, education, housing and other welfare issues. Thirdly, levels of private consumption which are represented in Tables 5.6, 5.10, and 5.14 have been chosen as an indicator of the extent to which the peace dividend might have been reallocated to a reduction in private taxation. Lastly, data contained in Tables 5.7, 5.11, and 5.15 reflect the trends in government deficits experienced by the case study countries.

Case Study 1 - The USA Peace Dividend

Data for US military spending indicate that it has continued its downward trend since the late 1980's, consistent with aggregated NATO spending. The following figures from the IMF Govt. Finance Statistics Yearbook of 1995^{xliii} and confirmed by 1996 figures, clearly indicate the US pattern of **reduced *milex*** and the subsequent changed pattern of resource allocation (the peace dividend).

Table 5.4 - Expenditure on Defence as a Percentage of Gross Domestic Product

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
USA	5.90	6.14	6.30	6.06	5.79	5.67	5.39	5.49	5.05	4.58	4.18

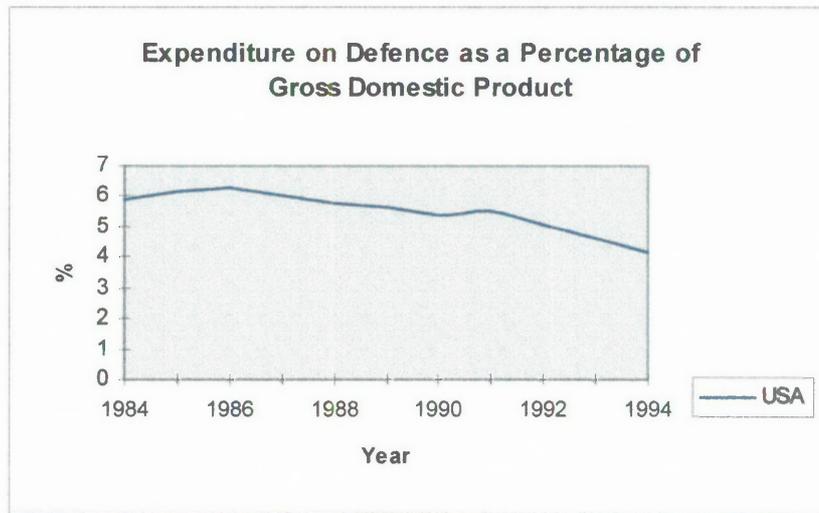


Table 5.5 - U.S .A. Central Government: Expenditure by Function as a Percentage of Total Expenditure

	1988	1989	1990	1991	1992	1993	1994
Expenditure on Defence	24.89	24.57	22.61	21.61	20.53	19.28	18.13
Expenditure on Soc. Security and Welfare	27.59	26.60	25.56	26.14	28.48	29.12	29.64
Expenditure on Education	1.67	1.80	1.74	1.73	1.75	2.00	1.61
Expenditure on Health	12.48	12.91	13.48	13.75	16.00	17.10	18.29
Expenditure on Housing & Comm. Amenities	2.94	2.73	2.62	2.56	2.66	2.63	2.65
Expenditure on Economic Affairs & Services	7.46	8.05	10.22	10.08	6.09	6.17	6.41

USA Central Government: Expenditure by Function as a Percentage of Total Expenditure

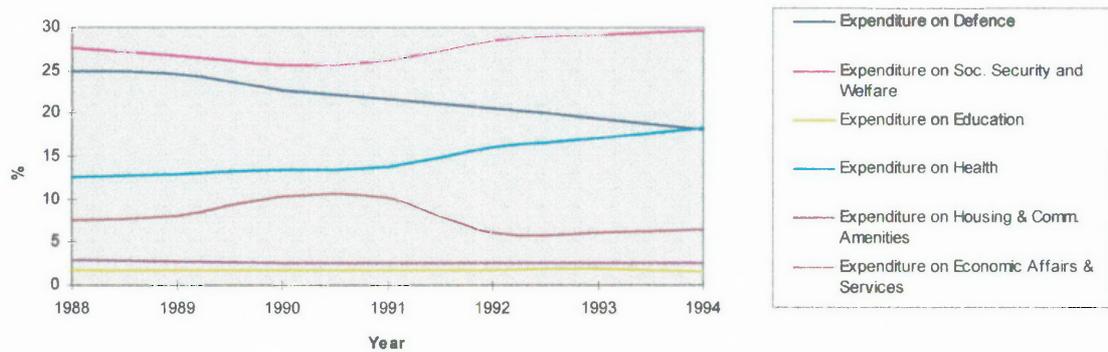


Table 5.6. Patterns of U.S. Private Final Consumption Expenditure (Source UN Statistical Yearbook 1993) (% of GDP)

1985	1991	1992
64.7	66.9	67.1

Patterns of US Private Final Consumption Expenditure

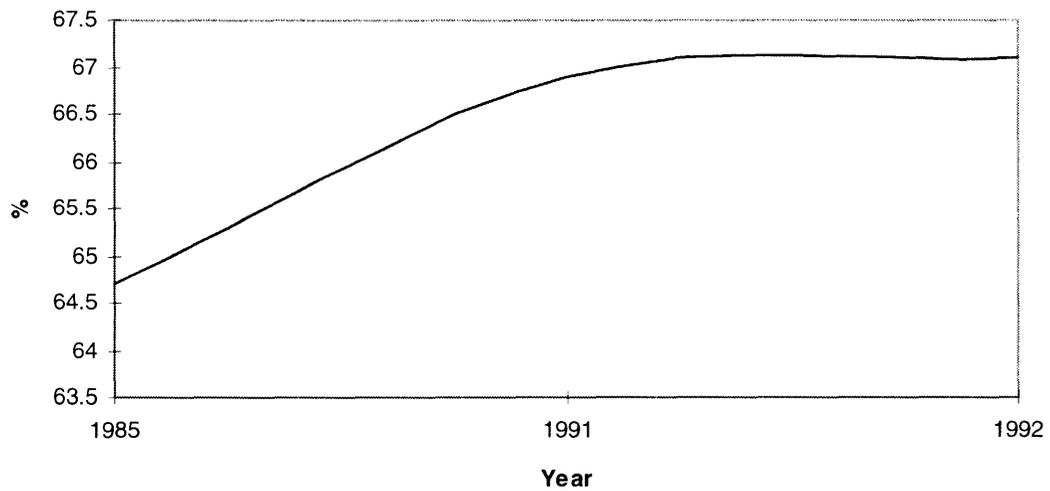
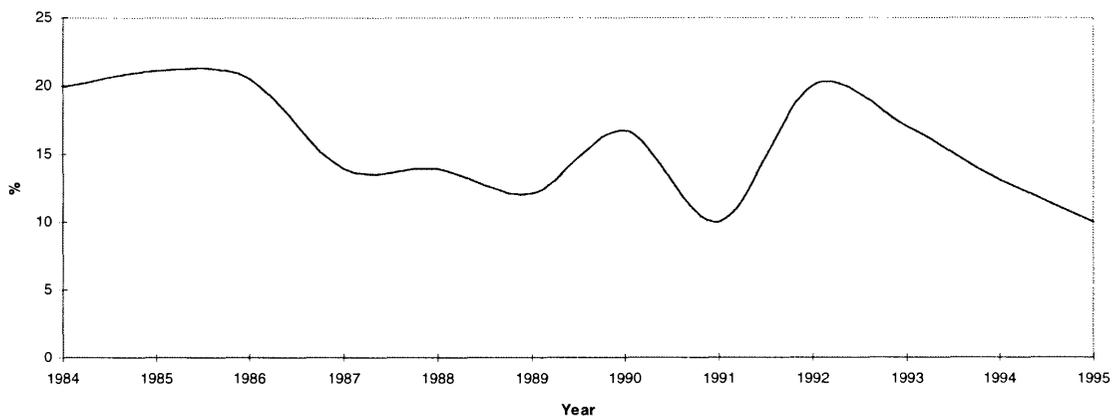


Table 5.7 - USA Central Government Overall Deficit/Surplus as a % of Total Expenditure and Lending Minus Repayments

1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
-19.88	-21.13	-20.53	-13.95	-13.91	-12.08	-16.73	-10.02	-20.02	-17.03	-13.15	-9.96

USA Central Government Overall Deficit as a % of Total Expenditure and Lending Minus Repayments



The above data indicate that a peace dividend for the US has been realised, and that resources have been reallocated primarily to reducing the government deficit and the provision of health services, social security and welfare. The trend towards increasing levels of private final consumption, and indicator of a downward trend in levels of private taxes, also point to a reallocative effect resulting from reduced defence spending.

Case Study 2 - The French Peace Dividend

The following data are taken from the IMF Govt. Finance Statistics Yearbook, 1995 and the UN Statistical Yearbook, 1993.

Table 5.8 - Expenditure on Defence as a Percentage of Gross Domestic Product

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
France	2.74	2.80	2.72	2.63	2.85	2.67	2.73	2.60	2.54	-----	-----

Expenditure on Defence as a Percentage of Gross Domestic Product

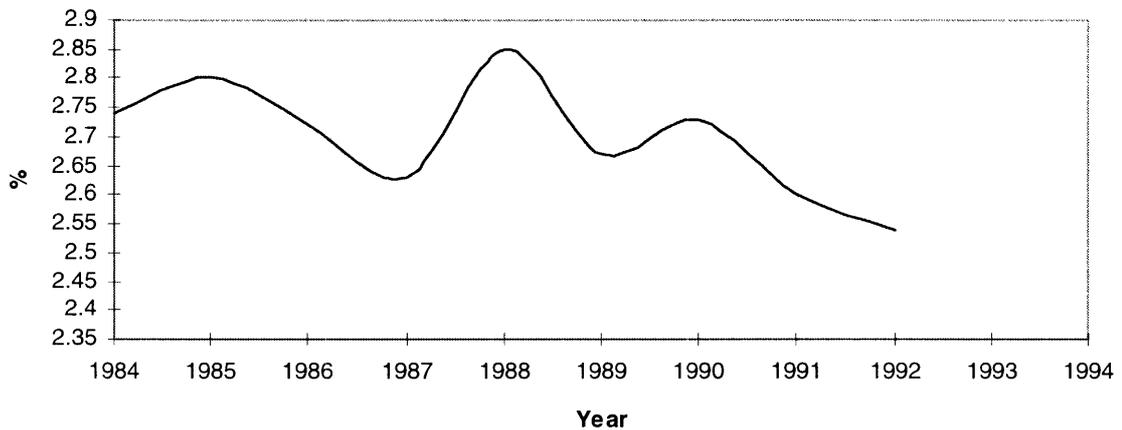


Table 5.9 - French Central Government Expenditure as a Percentage of Total Expenditure

	1988	1989	1990	1991	1992	1993	1994
Expenditure on Defence	6.64	6.34	6.40	5.98	5.65	-----	-----
Expenditure on Social Security & Welfare	44.86	44.87	44.00	44.32	45.05	-----	-----
Expenditure on Education	6.76	6.89	6.97	7.02	6.99	-----	-----
Expenditure on Health	15.23	15.48	16.04	16.13	15.47	-----	-----
Expenditure on Housing & Comm. Amenities	1.25	1.33	1.14	1.18	1.23	-----	-----
Expenditure on Economic Affairs & Services	5.39	5.22	4.97	4.98	4.68	-----	-----

French Central Government Expenditure as a Percentage of Total Expenditure

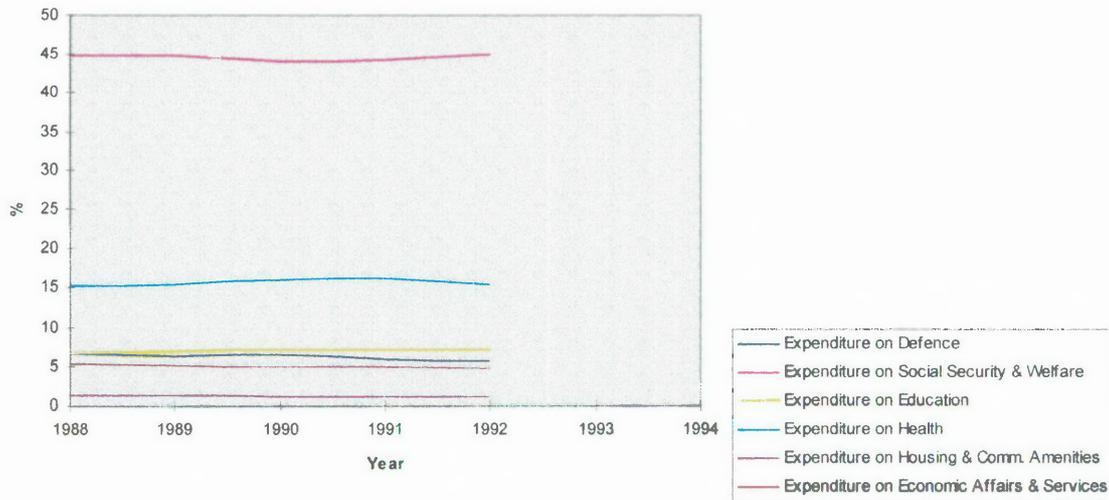


Table 5.10 - Patterns of French Private final Consumption Expenditure (Source UN Statistical Yearbook, 1993) (% of GDP)

1985	1991	1992
61.1	60.2	60.5

Patterns of French Private Final Consumption Expenditure

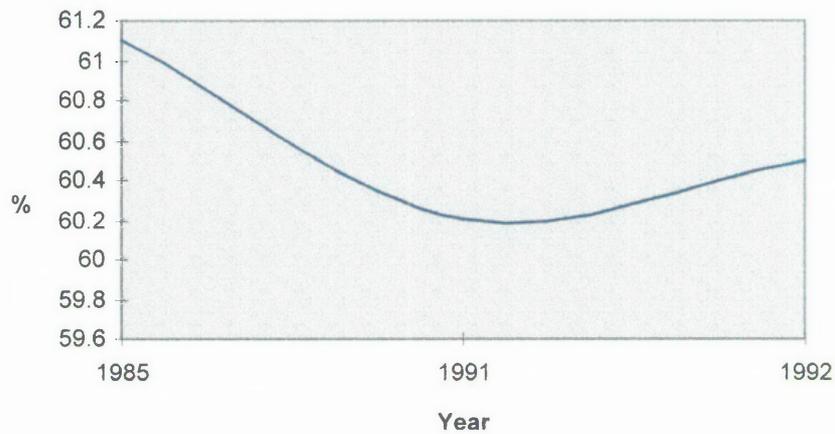
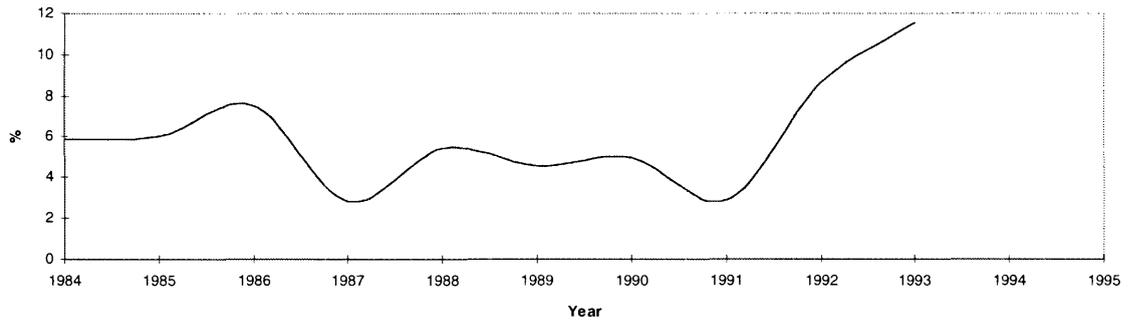


Table 5.11 - French Central Govt. Overall Deficit/Surplus as a % of Total Expenditure and Lending Minus Repayments

1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
-5.90	-6.02	-7.50	-2.79	-5.41	-4.54	-4.94	-2.87	-8.66	-11.52	---	---

French Central Govt. Overall Deficit as a % of Total Expenditure and Lending Minus Repayments



Data for government expenditure in France in recent years (above) indicate a very gradual, and relatively small reduction in miles. Patterns of government expenditure have remained generally constant. Surprisingly, the French government deficit has increased (with the exception of 1992), possibly due to a reduction in export income from arms (with the reduced demand following the end of the Cold War). Levels of private consumption have remained relatively steady.

Case Studies - The Peace Dividend in Ethiopia and Kenya

Data from developing countries are less readily available than for industrial countries, however the following gives some indication of the patterns of government expenditure and private consumption in Ethiopia and Kenya over recent years. (Source IMF Govt. Finance Statistics Yearbook, 1995 and UN Statistical Yearbook 1993).

Table 5.12 - Expenditure on Defence as a Percentage of Gross Domestic Product

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Ethiopia	7.93	6.68	6.41	6.52	8.44	9.92	10.95	8.93	.....	.....	.....
Kenya	3.32	2.36	2.33	2.68	3.46	2.49	2.93	2.84	1.95	1.88	.....

Expenditure on Defence as a Percentage of Gross Domestic Product

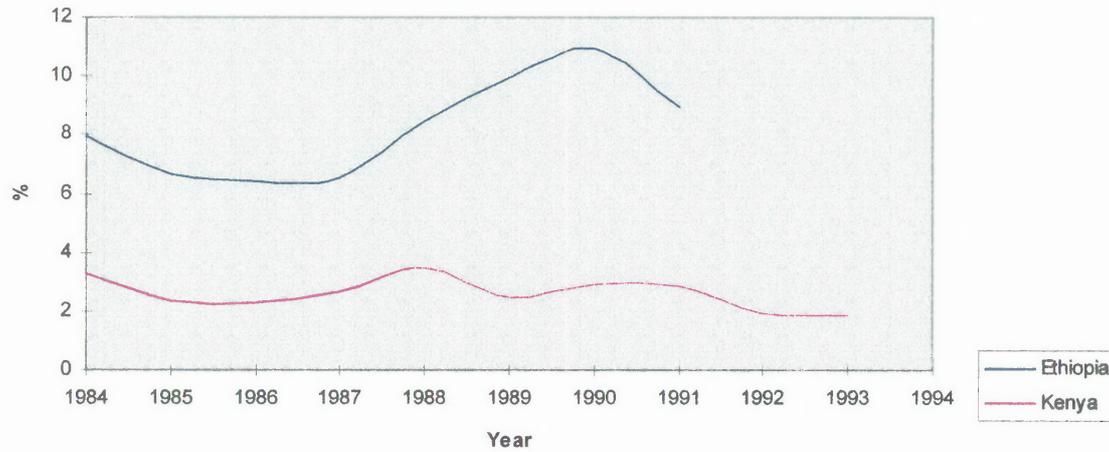
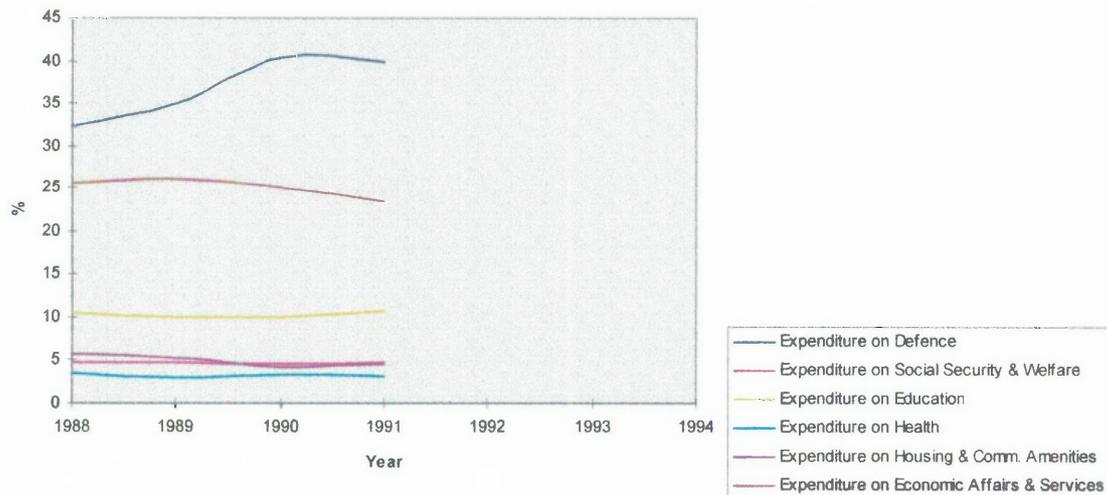


Table 5.13 - Central Government Expenditure as a Percentage of Total Expenditure

	1988	1989	1990	1991	1992	1993	1994
1. Ethiopia							
Expenditure on Defence	32.46	34.98	40.49	40.00	.....	.....	.....
Expenditure on Social Security & Welfare	4.66	4.68	4.49	4.65	.....	.....	.....
Expenditure on Education	10.53	9.92	9.92	10.63	.....	.....	.....
Expenditure on Health	3.42	3.04	3.25	3.18	.....	.....	.....
Expenditure on Housing & Comm. Amenities	5.81	5.33	4.28	4.48	.....	.....	.....
Expenditure on Economic Affairs & Services	25.61	26.04	25.09	23.52	.....	.....	.....

ETHIOPIA: Central Government Expenditure as a Percentage of Total Expenditure



2. Kenya

Expenditure on Defence	12.22	7.76	10.03	9.25	7.28	6.23	.....
Expenditure on Social Security & Welfare	0.11	0.14	0.10	0.11	0.12	0.07	.....
Expenditure on Education	22.13	19.80	19.89	20.14	21.89	18.85	.....
Expenditure on Health	5.90	5.36	5.37	5.41	5.95	5.36	.....
Expenditure on Housing & Comm. Amenities	2.53	3.46	3.79	3.28	3.03	1.83	.....
Expenditure on Economic Affairs & Services	17.92	26.62	20.73	18.06	15.51	14.91	.....

KENYA: Central Government Expenditure as a Percentage of Total Expenditure

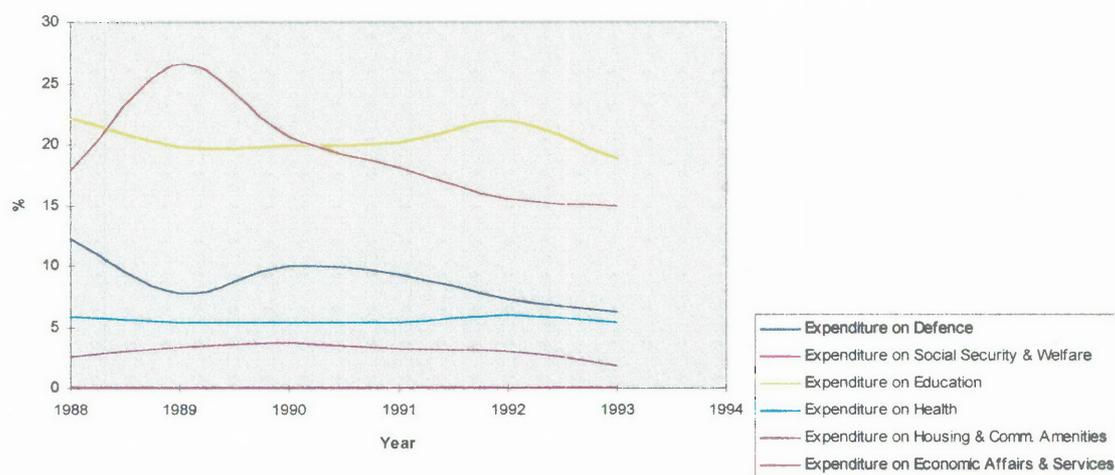


Table 5.14 - Patterns of Private Final Consumption Expenditure in Ethiopia and Kenya (Source UN Statistical Yearbook 1993). (% of GDP).

	1985	1991	1992
Ethiopia	75.9	69.9	86.7
Kenya	58.0	62.9	68.5

Patterns of Private Final Consumption Expenditure in Ethiopia and Kenya

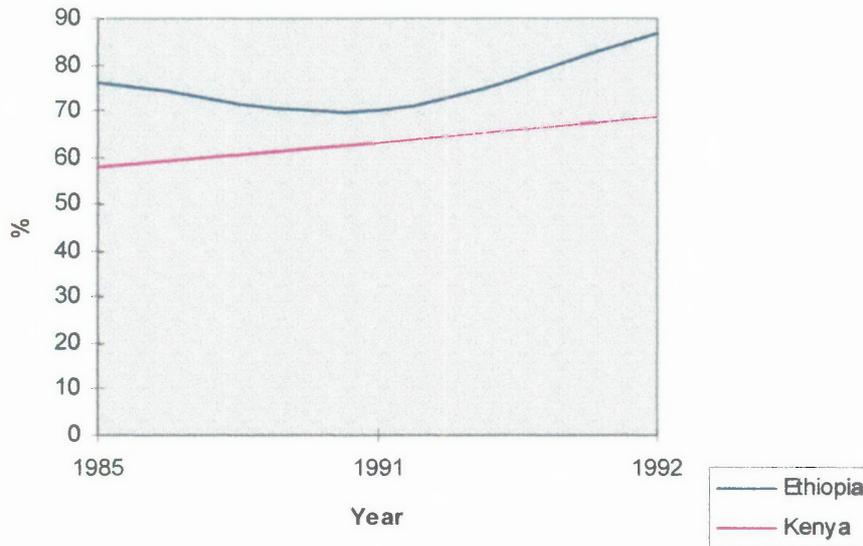
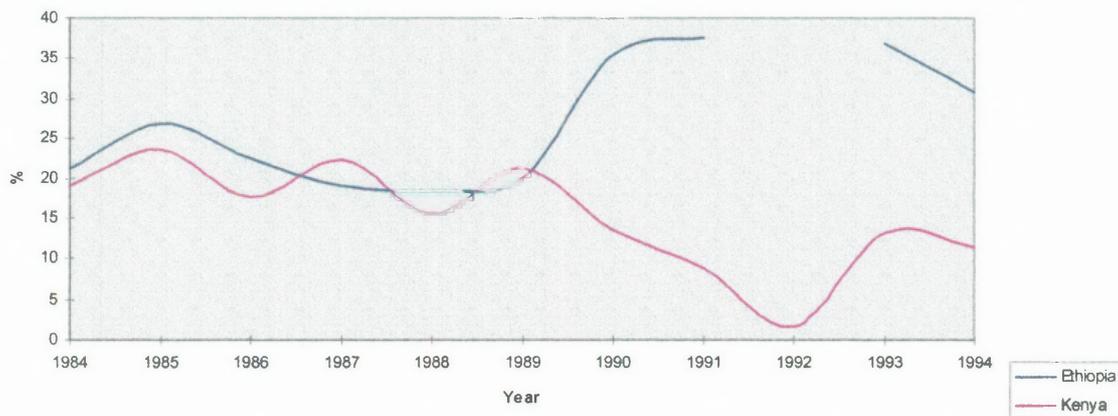


Table 5.15 - Overall Government Deficit/Surplus as a percentage of Total Expenditure and Lending minus Repayments

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Ethiopia	-21.24	-26.87	-22.44	-19.05	-18.40	-20.15	-35.42	-37.70	.....	-36.96	-30.82
Kenya	-19.02	-23.48	-17.57	-22.24	-15.45	-21.24	-13.49	-8.80	-1.63	-13.09	-11.37

Overall Government Deficit as a % of Total Expenditure and Lending Minus Repayments



For Ethiopia, the limited availability of data make it difficult to draw reliable conclusions. Data presented above would indicate that the reality of the peace dividend remains elusive to the Ethiopians. Patterns of government expenditure are largely constant, with the exception of millex which has increased. The increased millex has occurred despite the end of the Cold War and mounting evidence to indicate the opportunity foregone. Correspondingly, the government deficit has increased reflecting the increasing debt burden and likelihood of

ongoing poverty and deprivation for the vast majority of Ethiopians. However, the recent ending of the Ethiopian civil war may have changed this picture, and with the availability of more current and comprehensive data a clearer picture of the situation in Ethiopia today will be evident. Until this is achieved, conclusions regarding the achievement of a peace dividend in Ethiopia cannot be drawn.

Kenya's experience as reflected in the data indicates a more reliable picture. Miley has decreased markedly since the end of the Cold War, with the major beneficiary being the government deficit. Private final consumption expenditure has also increased indicating a possible reduction by the Kenyan government in the level of private taxes.

The data indicate that a peace dividend has been realised and has been used, not to augment other forms of government expenditure directly, but rather to reduce the deficit in the short-term with the flow-on from expected interest rate reductions to materialise in the medium to long term.

It would be very inappropriate to generalise from the results of these developing countries, or indeed the industrial nations studied above, with respect to the capturing of the peace dividend. Clearly, conditions in France and Ethiopia differ from those in the USA and Kenya, limiting the availability of the peace dividend.

The following chapter will list some of the constraints to the capturing of the peace dividend and make recommendations for their removal in the interests of sustainable human development.

CHAPTER 6

SUMMARY AND CONCLUSIONS

In the introductory chapter of this paper, the reduction in military expenditure and the reallocation of resources was presented as an investment process, one with short run costs (of conversion), and long-run gains, the Social Rate of Return.

It was suggested that the maximisation of the long-run return depended on the following factors:

1. low conversion costs
2. a short transition time from costs to benefits
3. optimum use of reallocated resources, and
4. a preferential pattern of government policies and economic conditions.

The literature review in chapter 2 highlighted some of the more recent studies of the peace dividend, reporting on national and international studies and simulations.

The methodological approach suggested in chapter 3 comprised a review of the historical experience of a number of countries and regions, as well as empirical simulations involving a multitude of alternative "peace dividend" scenarios. Chapters 4 and 5 detailed the results.

This chapter will now deduce from the accumulated information above, a set of strategies for achieving a maximum peace dividend.

Maximising the Peace Dividend.

The results presented in chapters 4 and 5 clearly indicate that a peace dividend is there for the taking, as evidenced by the experiences of USA and Kenya. However, as alluded to above, several imperatives need to be considered.

1. Minimise Conversion Costs and Transition Time To Minimise Short-run Adjustments

Many of the studies considered earlier in this paper point to the need to minimise the short-run adjustment costs, i.e., the costs of converting military capability into civilian. These include James Simmie's^{xiii} examination of the U.K. experience in the aerospace and electronics industries, and other contributions summarised in chapter 2: the experience of France, a

developed country with a very large MIC, also the Netherlands, Ron Smith's regional studies, Argentina and Chile's situation as reported by Thomas Scheetz, the LINK Model simulations, and Chan and Somers "Swords into Ploughshares".

What can be learned from these studies is that the conversion costs and adjustment time will be minimised if:

1. there exists a degree of interaction and cooperation between the military sector and the civilian sector in terms of production and research and development prior to the cuts
2. political alliances between the MIC and government defence procurement agencies could be overcome, possibly as a result of pressure exerted from ever-increasing defence expenditure burdens or the attainment of peace and national security
3. conversion is combined with policies of diversification (increasing defence contractors' capacity for civilian products), and regeneration (the starting of completely new civilian products).
4. there exists a strong demand internationally for high-tech civilian products, capable of being produced by the (previously) military sector
5. national policies for structural change are implemented
6. new investments in the private sector are made simultaneously with reduced military expenditure in order to create employment opportunities for displaced workers
7. a deficit-neutral approach is adopted by policy makers
8. the economy instituting the reduction in military expenditure displays considerable resilience to demand shocks through its automatic fiscal stabilisers, the monetary authority's reaction function and exchange rate adjustment mechanism

2. Optimal Use of Reallocated Resources To Maximise the Long-run Social Rate of Return

As suggested above three alternative uses of the peace dividend are available. These include deficit reduction, taxation reduction and/or increased government spending on goods, services and infrastructure. Whilst all three are considered preferential to military expenditure in terms of long-term aggregate GDP, there exists a degree of conflict with regard to which alternative use is optimal.

Many of the simulations and national studies reported in the literature review give accounts of alternative uses. The results are inconclusive. While there are conflicting results of the simulations and studies, many reveal an optimal gain from the peace dividend will be experienced if it is devoted to tax reductions, because this enables the initial demand shock to be counteracted by increases in domestic consumption and investment.

Should the peace dividend be used to increase other government spending, it was found that the composition of output would remain virtually unchanged, except for the shift from military to civilian programs within the government. Others suggest that a small stimulus would be produced.

If the decline in military is used to reduce the government deficit (and thereby reduce the net claims of public sectors on capital markets), interest rate reductions can be expected resulting in a modest recovery of aggregate output.

It is important to recognise that the relationship between defence spending, budgetary policy and macroeconomic performance is very complex and dynamic. In addition, the disaggregated components of military expenditure show different associations with fiscal and macroeconomic variables. The determination of an optimal alternative use for the peace dividend is, therefore, difficult. Overall, though, what is important is that any of the above options produce long-term positive results.

3. Preferential Pattern of Government Policies and Economic Conditions

The inconclusive nature of the results of studies relating to alternative uses of the peace dividend can partly be explained by variations in the kinds of economic policies which are pursued concomitantly with reduced military.

What emerges from the studies and simulations is that national-level policies to effect needed structural change are imperative if the short-run adjustment costs are to be minimised. As well, the significance of the electoral cycle needs to be taken into account as economic and politics operate according to differing time horizons. The political time horizon may be considerably shorter than the time necessary for the economic feedback loop to vindicate the benefits of reduced military.

Expansionary accommodating macroeconomic policies by countries that do not have to go through prolonged structural adjustments to reallocate resources to non-military uses would also assist.

For developing countries, the military cuts and development assistance available from developed countries would only have positive effects if supported by trade liberalisation and "easier" money which would protect their gains from non-tariff barriers and increased interest and debt repayments.

Revisiting Specific Objectives

To assist with developing recommendation regarding the achievement of a global peace dividend, chapter 1 nominated four specific objectives to be addressed by this dissertation. They included:

- (a) Specify the extent of the peace dividend post-Cold War
- (b) Ascertain how the peace dividend had been spent
- (c) Make policy recommendations regarding how the peace dividend might be implemented for maximum economic development and minimum adjustment costs
- (d) Identify factors inhibiting the attainment of a peace dividend and how these might be overcome.

Addressing these specific objectives has yielded the following results:

- (a) The global peace dividend** available during the post-Cold War period is estimated to be in the order of **\$US933billion**.
- (b)** While figures on the reallocation of peace dividend resources are not being clearly differentiated in national budgets, nor are they being sufficiently monitored, evidence reported in the above chapters indicates that the **peace dividend has largely been spent on the reduction of national government deficits**.
- (c) How the Peace Dividend Might be Implemented for Maximum Economic Development and Minimum Adjustment Costs**

Outcomes of the addressing of specific objectives (c) and (d) are reported below.

Recommendations - How the Peace Dividend Might be Implemented for Maximum Economic Development and Minimum Adjustment costs

After taking into account the evidence presented in the foregoing chapters, the following recommendations are made:

- (i) Make sustainable human development the over-riding goal of disarmament
- (ii) Adopt a global, integrated, cooperative, burden-sharing approach
- (iii) Address the underlying roots of national and international conflict
- (iv) Achieve long-term global security
- (v) Undertake multilateral, global cuts in military expenditure

- (vi) Announce military expenditure cuts to accommodate forward-looking consumers and investors
 - (vii) Make the peace dividend visible through the establishment of a demilitarisation fund
 - (viii) Assist developing countries to cut military expenditure
 - (ix) Ensure resources are reallocated to sustainable human development initiatives
- (d) Identify factors inhibiting the attainment of a peace dividend and how these might be overcome.
- (i) Address the issue of political will, with the USA to show political leadership in all areas of reduced millex, including land mines
 - (ii) Correctly design accompanying macroeconomic policies
 - (iii) Reduce foreign financing of imported arms
 - (iv) Minimise the influences of vested interests in the arms industry through the achievement of peace.

Redefining the Process

The attainment of a sustainable human development through the capturing of a maximum global peace dividend might better be represented by the following diagram:

Sustainable ==>Roots of Conflict =====>Lack of Security =====> Conflict =====> Milex

Human	* Poverty
Development	* Inequality
Does Not	* Unemployment
Exist	* Dislocation

IF disarmament initiatives are implemented:

Milex is Reduced ==> Reallocation of ==> S.R. Adjustments ==> L.R. Sustainable
 which frees up **Resources** **Human**
 resources **Development**
Does Exist

Clearly, an “intervention” at the beginning of the process, i.e. the multilateral addressing of the roots of conflict, would be preferable.

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