

Structural Adjustment for the Transition to Disarmament An Assessment of the Role of the Market

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ملخص

التكيف الهيكلي من أجل الانتقال إلى نزع السلاح مع التأكيد على دور السوق

ثمة من يجادل أنه بما أن أسلوب السوق يركز على الربحية قصيرة الأمد، فإن التكيف الهيكلي من أجل الانتقال إلى نزع السلاح سيتحقق عن طريق البطالة لتقليل الكلفة استجابة للانخفاض في مبيعات منتجات الدفاع. في هذه الحالة سوف لا يعكس مستوى الأجر السائد ذلك المستوى المرغوب به اجتماعياً، الأمر الذي يعني عدم تحقق الكفاءة الانتاجية من الناحية الاجتماعية. وفي نفس الوقت وبالقدر الذي تعني فيه البطالة أن الموارد لم يتم استغلالها في أي نشاط انتاجي، فإن كفاءة توزيع الموارد لم تتحقق.

أن المبرر الأساسي لدور الدولة في هذا المجال هو أن الدفاع يعتبر سلعة عامة. وعليه عندما ينخفض الطلب على هذه السلعة فإن على الدولة تقع مسؤولية أن يتم التخفيض في الإنفاق العسكري بشكل منتظم إلى أقصى درجة ممكنة حتى يتم تمكين السوق من استيعاب خفض هذا الإنفاق وفي الدول الأخذة في الانتقال إلى نظام السوق فإن هذا السوق لم يتكون بعد، الأمر الذي يتطلب توفر ظروف مستقرة تساعد الدولة على توفيرها. وفيما يتعلق الأمر بالدول النامية فإن هناك حاجة إلى الدولة لكي تساعد في تخصيص موارد العملة الأجنبية المدخرة للأغراض التنموية وتوسيع فرص العمالة في القطاع المدني.

وباستخدام أسلوب المحاكاة Simulation تم التوصل إلى أن مجرد تخفيض الإنفاق العسكري في الدول النامية أو ما يمكن تسميته بعائد السلام المحلي لا يكفي لتحقيق نمو مستدام في هذه الدول. إن ذلك يستدعي توفر قوة دافعة للمساعدة في تحقيق مثل هذا النمو. ومثل هذه الدافعة يمكن أن تتأتى عن طريق زيادة تدفق الموارد إلى هذه الدول والتي تتوفر، في جزء مهم منها، من خلال خفض الإنفاق العسكري في الدول المتقدمة أو عائد السلام الخارجي.

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Introduction

The end of the cold war has raised hopes and expectations that world and regional peace is about to prevail, implying that all countries should move towards disarmament and end their arms race. Such a development, for the various countries in the world, is an exogenous event, forcing them to undertake some sort of structural adjustment. The nature and the extent for this adjustment depend on the stage of development of the country, the size and composition of its military sector and whether the country is an importer or exporter of arms. The transition to disarmament and the ensuing structural adjustment entails reduction in military expenditures (MILEX). This, in turn, means that macroeconomic and sectoral policies will have to be formulated and institutional changes and reforms undertaken.

The macroeconomic dimension of structural adjustment for the transition to disarmament (SATD) deals with its consequences for fiscal and external balances and the level of employment.

The sectoral and microeconomic dimension relates to the adjustment of military industries and their adaptation to civilian use, which may mean that the industries could be diversified or converted. Conversion could be interpreted in two different ways. In the first instance, it implies the re-use of real resources released from the military sector (armed forces and military industries) in the civilian sector. The other interpretation, much narrower, involves re-using military plant itself to produce civilian products (UNIDIR, 1993).

As the institutional dimension normally stresses public sector reforms, SATD may involve, when applicable, a transfer in the ownership of military industries from the public to the private sector.

This paper will devote a large section to examining the extent to which the market will be able to effect SATD.

I. Military Expenditures:

A review of some Macroeconomic Effects

In this chapter, some light will be shed, in a critical fashion, on the overall macroeconomic effects of military expenditures (MILEX).

It is sometimes argued that MILEX contribute to total saving, private or public, to the enhancement of the absorptive capacity of investment resources, and to employment opportunities.

In the first instance, and with respect to private saving, the effect of MILEX is normally seen in an indirect way. It is presumed that MILEX, by enhancing the defence and deterrence capabilities of the country, create a sense of security among the population. In addition, when military expenditures are taken to include those relating to internal security⁽¹⁾, they should, it is further argued, prevent internal disturbances. Whether related to external defence or internal security, MILEX is therefore set to ensure political stability in the country. Under stable political conditions, individuals will change their temporal preferences and give higher weight to future consumption at the expense of present consumption thereby increasing their propensity to save. Military expenditures, it is also argued, through their increasing aggregate demand, will be inflationary, and this may contribute to compulsor saving⁽²⁾.

As far as government saving is concerned, it is claimed that MILEX, as they are incurred by the government itself, contribute to the government deficit, thereby compelling the government to finance this deficit through, inter alia, improving the tax system. Unlike MILEX, other components of government expenditures, especially those on health and education, can be financed by the government and the private sector which means that the contribution of those expenditures to the deficit is uncertain.

Furthermore, military imports as part of military expenditures also contribute, in a number of cases, to the trade deficit, thereby inducing military aid and increasing external saving of the country and to the extent that such financial resources are fungible, there is a possibility that they further growth⁽³⁾,

Secondly, the effect of MILEX on investment is seen through its alleged enhancement of absorptive capacity which emanates from training in the army and in the military industry, from the greater inclination of the military to allocate resources to research and development, and from the promotion of work ethics and discipline. In addition, the intensive reliance of

the military on infrastructure like roads and military bases has, it is claimed, a positive impact on the absorptive capacity.

As regards the effect of MILEX on employment, it can be seen in a direct and indirect manner. The military sector generates employment in a direct way through conscription and volunteers. In addition, through the increase in total demand that MILEX generates, various industries and production units will increase their demand for labour.

The above argument can be questioned on the following grounds:

- (i) The argument that MILEX provide security for individuals, persuading them to change their time preference in favour of the long run, can be refuted on the grounds that MILEX may also encourage the arms race among countries, thereby providing a source of tension and conflict. People will then give higher priority to the short run. Under these circumstances, not only will domestic saving decline, capital flight will probably increase. Security is better "purchased" through an improved regional and international political atmosphere than through military expenditures.

MILEX directly increase government consumption but, due to the fact that they are classified as strategic, they normally enjoy top priority among the items of government expenditures. That is way they crowd out other expenditures, and in developing countries in particular, MILEX are incurred at the expense of expenditures on health and education and other social expenditures, since these countries are reluctant to cut their investment expenditures which are essential for growth.

Reducing social expenditures because of the increase in MILEX may engender political instability. In addition, to the extent MILEX turn out to be inflationary, they will have negative implications for the macroeconomic environment, the distribution of income, and the external competitiveness of the country.

While it may be true that the financing of a deficit generated by the increase in MILEX might improve the tax system the inflation caused by the deficit reduces the real value of tax revenues.

As to the alleged positive effect of MILEX on external saving (the increase in aid), it is observed that arms imports are increasingly being paid for with export revenue. In fact the sequence in this regard is that when political considerations are paramount, military aid is used to pay for arms imports, then those payments start to be made through credit facilities and eventually, as mentioned earlier, through export earning (on this development, see Deger, 1986, ch 6). The sequence indicates the increasing importance of economic motives behind arms exports. Hence, instead of increasing external saving, MILEX reduces domestic saving.

In fact, in the period leading to the end of the cold war (1983-86), military imports of developing countries, at \$51 billion on average, were equal to almost three times their current account deficit in the same period (\$19 billion). After 1987, the year the cold war ended and up to 1993, the contribution of military imports to the deficit declined to about 90 per cent, which means that other factors, like interest payments, have started to assume an important role in causing the deficit⁽⁴⁾,

- (ii) The effect of MILEX on employment depends, to a large extent, on the structure of these expenditures and the structure of the military sector. The expenditures are likely to generate more employment if the wage bill is greater in weight than expenditures on arms imports, and if the military sector is dominated by armed forces⁽⁵⁾ rather than by military industry, which is naturally capital-intensive⁽⁶⁾. The question to be asked is whether the military sector will solve the employment problem and, more importantly, whether the amount expended as military expenditures would have created more employment opportunities had it been spent in the civilian sector. In this regard, it has been stated that alternative forms of public and private spending may create more employment even in the short run and particularly in the long run⁽⁷⁾,
- (iii) In relation to the contribution of MILEX to the absorptive capacity of investment, this could materialize only after labour is released, a matter requiring the implementation of a successful conversion programme. Still, some doubts are raised on the contribution of the military sector in this regard. For one thing, the labour trained during military service

constitutes a small percentage of the labour force. Secondly, while some experience can no doubt be acquired during training in military service, some of the skills acquired are characterised by narrow specialization, like combat training. Thirdly, while constructing an infrastructural project is important in raising absorptive capacity, defence considerations may entail that the project is located in an isolated area. Fourthly, there is no doubt that military service entails a great degree of discipline, but the nature of service in the civilian sector requires dialogue and discussion. Lastly, as regards military-related expenditures on research and development their immediate effect is that they deprive the civilian sector of much needed skills and qualifications. However, the nature of R&D in the military sector is very specialized and essentially aims at achieving a high degree of precision. The most important criterion is the extent to which this R&D will improve the performance of weapons produced, and cost considerations are secondary.

II. The Macroeconomic Effects of the Transition to Disarmament

The reallocation of resources in the course of SATD includes finding alternative uses not only for labour and capital but also for the savings that could emanate from the reduction of military expenditures, which, in developing countries, mainly take the form of foreign exchange.

The effect of the reduction of military expenditures on employment depends on the structure of the cuts in those expenditures. Needless to say, to the extent that the reduction of MILEX is mostly related to import procurement the effect on employment would be minimal. For developed market economies and countries in transition the problem of SATD relates in addition to financial resources and labour, to the conversion of military plants to civilian uses.

Despite the fact that the civilian economy is a more efficient generator of employment, the transition to disarmament will still have adverse effects

on the level of employment in the various economies. There will also be idle capacity resulting from the unutilized capital in military industry.

As regards labour, the severity of the problem depends on the structure of the military sector, i.e. the weight of the armed forces in this sector, the size of the cut in MILEX, and whether these cuts are occurring in recessionary or expansionary times. It also depends on the skill mix of the labour force released in the sense that certain skills can be easily and quickly absorbed in the civilian sector. There are also indirect effects on employment in the sectors supplying the military sector. This means that, the problem will be greater when labour is released from both the military sector and the sectors supplying it.

The nature of the adverse effects on the employment situation differs between developing and developed countries. In the latter countries, military employment tends to be more specialised due to the nature of the military sector in those countries, which embodies a high level of research and development. However, due to the fact that the labour market is less rigid than in developing countries there is a better chance that this labour, taking account of the employment situation in the country, can be absorbed in the labour market. In developing countries, the labour market is more rigid because of the stage of development in general, but on the other hand the adverse effects can be mitigated because the expertise gained in the military sector or the armed forces, modest as it is, can, with minimum retraining, be utilised in the labour market, taking account again of the situation in the labour market.

There are also adverse effects from the transition to disarmament on the capital utilized in military industry. As military demand declines, military industry will reduce its production and bases will be closed. Here again the situation will be different between developed countries, countries in transition and developing countries. Unlike the former countries, whose military capital is manufacturing and infrastructural in nature, the military capital of developing countries is largely, if not totally, infrastructural in nature for example military bases, army barracks and the like. It may be much easier to convert the infrastructure both technically and economically.

Military air bases can for example, be used after minor modification as civilian airports, provided that the location is suitable. In addition, military infrastructure does not produce marketable goods, which makes it much easier to convert than military industries, where finding alternative markets assumes particular importance.

The above considerations point to the real structural adjustment problem. From the macroeconomic point of view, and on the financial front, the transition to disarmament and the associated reduction in military expenditures emanating from it might have the potential of contributing to a better environment, both politically and economically. From the economic point of view, the saving can possibly be used to help contain disorders in the macroeconomic environment or be used directly for growth purposes.

The reduction of the fiscal deficit which a reduction in military expenditure can bring about can contribute to lowering inflation and interest rates. There may therefore be less need to raise taxes. All these consequences create favourable conditions for stability and growth.

In addition, the transition to disarmament should help create a supporting political environment in the different countries and worldwide. Such an environment will be conducive to growth and development, as it enhances international dialogue and cooperation in all respects.

III. The Market, The State and Structural Adjustment For the Transition to Disarmament (SATD)

In order to examine the role of the State in SATD versus the role of the market, one needs to shed some light on the characteristics of the defence sector and the extent to which it is different from its civilian counterpart.

A. Distinctive features of the defence sector

The defence sector is, in general, composed of the defence industry and the armed forces. An important feature of the sector is that the government plays a dominant role in its activities, both politically and economically. This stems from the fact that the government is responsible

for the national security of the country and is also the sole customer for arms. The government, in the process, determines the capacity and output of the defence industry, as well as the level and the skill content of its workforce. The demand of the government for arms depends, in turn, on the nature of this government and its perception of threat, i.e. non-economic factors.

Depending on the stage of development of the country, government demand for arms may be translated into a higher level of imports or a bigger domestic defence industry. This means that the central role of the government holds, irrespective of whether the country is developed or developing. The major difference is that the defence sector in developed countries is a capital-intensive industrial and technological sector and is also an export sector, whereas in developing countries it is, in general a labour-intensive import sector.

Another feature of the defence industry, which is not unconnected with the importance of the government in this sector, is that the industry receives subsidies from the government through which it maintains arms products at a certain technological level.

The security aspects of research and development and its secretive nature on the supply side and the monopsonistic nature on the demand side creates an environment in which efficiency considerations are not paramount. In many respects the objective of profit maximization acquires lesser importance than obtaining other privileges; as UNIDIR (1993) points out, subsidies, among other things, "provide firms with incentives to purpose non-profit objectives, managers might be satisfied with a quiet life; they might hoard valuable scientists; and they might prefer managerial benefits in the form of luxury offices, expense accounts, company cars and other fringes benefits" (UNIDIR, 1993, p.22).

In addition, and because of the fact that the government occupies a central place in this sector, there is little difference between the fact that the defence firm is a State or is privately owned. This has of course, important implications regarding the question of privatization of defence firms (Hartley, 1991, pp. 116-117).

The fact that the defence sector differs groups of countries implies different adjustment problems for each group. For the developed countries and the countries in transition, adjustment problems are reflected in idle industrial and infrastructural capacities and unemployment, including of labour engaged in research and development. However, in developed market countries, SATD is taking place under a market system where it is seen as a case of declining industries which need to be restructured, diversified or converted. However, the decline is not the result of technological advance but is due to the shrinkage of demand. The question in countries in transition is more or less the same, but adjustment is taking place in an environment where the economy is undergoing a transformation into a market system.

In developing countries, the problems of adjustment also relate, to certain extent, to idle infrastructural capacities. However the basic adjustment problem is how to cope with unemployment which, in those countries, involves mostly unskilled or moderately skilled workers. The adjustment policy will also relate to the utilization of the savings created by the reduction of military expenditures and imports.

The nature of defence sector and the central place of the State in it may also render adjustment difficult. Arms purchases are, in most cases, governed by non-economic factors. As UNIDIR (1993, p:22) points out, arms purchases are contracted between a monopsony and a monopoly or oligopoly on, sometimes, the basis of threats and bluff. The fact that some interest groups acquire, as a result of such deals, many benefits make them resistant to change, let alone reductions in purchases. Such practices cannot take place except in a secretive and isolated culture, which the State requires that the defence sector should possess (Harbor, 1993).

To the extent that SATD is facilitated by the overall environment globally and nationally, it is to be noted that, unlike the disarmament that took place after the Second World War where reconstruction generated demand for the released factors, disarmament at present is taking place in peace time, which means that demand is not guaranteed for the factors released. Thus activating the economies assumes particular importance and is a prerequisite for successful adjustment.

We shall begin, however, by examining why the market fails to undertake SATD. The analysis will be conducted taking the specificities of each of the above groups of countries into account.

B. The Market and SATD

SATD should be undertaken in such a manner that the negative effects of disarmament are minimized and the positive effects are maximized. For this to happen, the market environment must be "right". To what extent then, will entrusting SATD to the market lead to the creation of such an environment?.

The view that structural adjustment should be market-driven dresses the importance of prices in guiding resource allocation, which implicitly assumes that market conditions would ensure that resources will respond to price signals. While proponents of the market-driven approach admit that markets, especially in developing countries, are imperfect, they recommend some policies intended to improve market conditions in the short run (IMF stabilization measures) or medium-run (World Bank structural adjustment programmes) (Taylor, 1991). Those policies stress the reduction of the budget deficit and the encouragement of the tradable sector. The alternative view does not dispute the fact that structural adjustment should be market-driven but since this adjustment entails structural shifts then deliberate action is needed to improve the market, and this action begins with developing the real side of the economy. During this process, there is a need for a role to be played by the State in the management of the market, using policies and incentives to effect resource allocation and produce a different production and investment pattern from the one that would be produced by the free market system (Wade, 1990, p.26). Structural adjustment should not necessarily be deflationary and its negative social effects should be minimized⁽⁸⁾.

As far as SATD is concerned, some arguments also exist in favour of

relying on the market. Such arguments advocate a supply-driven, corporate-directed approach with minimum government intervention (Renner, 1992, p.31). Defence plants in this case will try to stay in the market they know, best since moving to alternative activities will make them vulnerable to fierce competition from established industries. Another reason put forward for the market approach is that the market was successful in the adjustment after the Second World War which was relatively painless (Renner, 1992 p.233).

Under market conditions all resources released due to the disarmament process have a market price reflecting their opportunity cost. Disarmament is supposed to release both financial and real (Labour and Capital) resources.

If the market is to succeed in absorbing the resources and effecting SATD, then both productive and allocative efficiency must be ensured. To achieve the former, the converted industry must operate at the lowest possible cost, or when inputs are re-used, this should not be detrimental to efficiency and competitiveness. Allocative efficiency will be achieved if the industrial defence capacity or the inputs used in defence can, when re-used, lead to a net addition to welfare in the economy.

Light will be shed on the nature of the role of the market in effecting SATD in developed market economies (DMEC), countries in transition (CIT), and developing countries.

1. Developed market economies

In the developed market economies, the most important feature of the defence industry which distinguishes it from that in other countries is that a large part of it belongs to the private sector, and because it is more mature than in other groups of countries, the market should possess the necessary mechanisms to implement SATD. According to Melman, in those countries the prevailing thinking is that there is no separate "economic conversion" problem. When demand for military goods declines, resources will be used elsewhere, and no deliberate planning for conversion is either necessary or desirable (Melman, 1980).

However, the industry will encounter a number of problems, even if it

is assumed that conversion in this case is technically feasible, i.e. that labour and capital can be switched instantly to produce civilian goods. These problems, which will be outlined below, need time to be solved, and they entail cost.

- (i) Because of the fact that new converted industry will produce a different product, it will face a different market structure which is competitive in nature. Having worked in a market environment characterised by monopsony, there will be a transitional period which the firm has to go through. As indicated above, the nature of the defence market is that governments are major participants, especially if defence sales occupy an important weight in overall sales. The implications are that political and strategic factors are important elements in the generation of military demand and cost considerations are, more or less, secondary. Thus, few players are involved in the defence industry which, more or less, creates an environment of "certainty" in the market. This contrasts with the nature of the civilian market where, in general, the number of participants is huge, making competition essential to the success of enterprises and, at the same time, introducing an element of "uncertainty" to the market.

The task of the firm in this transitional period is to find a market in the civilian sector and get accustomed to it. However, even in an environment where the market is mature, some action is needed to help the converted industry to enter a specific market and to be competitive something thought to be difficult, given the experience of the established industries. If the cost objectives are not attained, then it cannot be said that the market achieved productive efficiency.

The role of the State is to provide the new industry with information on domestic and international markets and subsidise that industry to withstand the transition.

- (ii) If conversion and adjustment take place under recessionary conditions, which is not unlikely given that disarmament, in contrast to the process that took place after the Second World War, is not followed by reconstruction, then lack of demand for the new product will lead to

idle capacity and unemployment. This will also have regional implications and adverse effects on certain towns and localities in this case will have a negative externality which the market does not normally take into account. The need therefore arises for industrial policies under which the government can contract the defence firm to develop and manufacture certain civilian goods.

- (iii) It is difficult for the market to bring SATD about if the defence industry is a prime contractor rather than a subcontractor in the sense that a subcontractor has a more diversified industrial structure and is probably more used to a competitive environment. But if the industry depends exclusively on defence sales and technology, then in the event of decline in military demand, the signals from the market are such that the plants should be closed down. Conversion, in these circumstances, cannot be effected at minimum or reasonable cost. According to UNIDIR, the site of such plants should be redeveloped for other purposes such as housing, industrial estates or shopping centres (UNIDIR, 1993, p.60). However most defence industries do not belong to this extreme case, which means that those industries can adopt other adjustment strategies, namely diversification and "spin-off"⁽⁹⁾.

The success of the market in undertaking SATD depends on how the cuts in military spending are perceived by the industry, i.e. on whether the cuts are perceived to be cyclical in nature or long-term, which in turn determines which of the above strategies is to be pursued. If the cuts in military expenditures and orders are short-term or cyclical, then the strategy to be followed is either diversification or spin-off which are implemented either exclusively or primarily by company executives (Renner, 1992, p36), with minimum or no intervention by the State. If the cuts are perceived as structural, i.e. mainly the result of a new security order, both globally and regionally, then the adjustment strategy to be followed is conversion.

The military industry will therefore face an uncertain situation emanating basically from the unknown government attitude towards military expenditures. While the industry may perceive the cuts to be

cyclical in nature relating to a downturn in economic activity, it could turn out that the government may eventually be able to mobilize resources from either domestic or external sources.

Thus the market and the industry need to be assisted by the government, which should supply them with advanced information and plans on the nature of cuts and the extent to which they will be changed⁽¹⁰⁾.

- (iv) There is no guarantee, if SATD is effected through the market, that externalities will be taken into account; for example, the military plant might move to an area where it may adversely affect the environment.
- (v) There may be social factors which induce the State to intervene in the process of SATD. The brunt of the initial cost of SATD is likely to fall on labour, causing further unemployment and having adverse effects on certain towns and localities. The benefit from SATD, on the other hand, may be such that the plant is converted to capital-intensive operations with profits occupying a greater weight in income. In other words, a market-oriented SATD may worsen the distribution of income. Those undesirable social consequences need the intervention of the State if they are to be minimized.
- (vi) A typical response of military firms to a decline in procurement, according to Brauer and Marlin (1992), is to lobby against the defence cuts, then to lay off labour, then to diversify into other military-related work and eventually to try to enter civilian work. The reluctance to convert is, to start with, the result of the special relationship that the defence industry has with the State, which itself acts as an important barrier against conversion. The culture of dependence on the State results in large subsidies for research and development, irrespective of cost considerations. In the words of "Melman", military firms are both cost and subsidy maximizers (Melman, 1980). While those traits are the backbone of success in the military economy, they are the source of failure in the civilian economy. The State can play an important role in changing the nature of this relationship. It can continue subsidies during the transition period for the adaptation of military R&D to

civilian R&D.

The above discussion relates, in the main, to the conversion of defence plant itself including its technology, but SATD also implies the reallocation of inputs released from the military sector to the civilian sector. Under market criteria, labour will be allocated to the uses where it gets maximum return, which means that there must be a sufficient demand for it. The market also implies that there would not be any barrier preventing labour from moving or being used in alternative ways.

UNIDIR (1993) points out that the employment prospects of the released labour depends on the magnitude of the labour force reductions, the period of time over which these reductions occur, the marketability of their skills and the general state of the economy (UNIDIR, 1993, p.56). If things are left to the market, and because short-term and cost-minimization considerations guide the resource allocation process, then it is expected that market-driven SATD will imply maximum cuts in the labour of the military sector. The market response will also be instantaneous in relation to disarmament, which means that to achieve maximum productive efficiency in the short term, the time period within which the cuts will take place will be very short. It should be noted that gradual cuts, logically speaking are a matter of policy and may be inconsistent with the concept of the market.

Indeed without government intervention the market will more likely implement SATD by creating unemployment, especially if it is not possible to adjust through reducing real wages. In this case, government intervention is needed to help find alternative employment for the labour released.

The marketability of military manpower depends on the extent to which the labour is specialised in a military occupation. Some of the labour will have become military specific and a long period of time is needed for this labour to integrate into the civilian economy. If guided by market signals, that labour will remain unemployed for a long period of time some military labour, however, has skills which have immediate applications in the civilian sector. However, the absorption of the latter will depend on the general state of the economy.

The government needs to provide funds for retraining. If the provision of those funds is left to the capital markets, which needless to say, are well developed in the countries concerned, then some collateral is needed to help the workers obtain the funds for training. The collateral is the future employment of the released worker, the availability of which is uncertain. It is therefore necessary for the State to intervene in order to provide funds for training.

There is thus a need for an interventionist policy with the aim of minimizing costs and maximizing benefits. To sum up, the role of the State is justified on the following grounds:

- (i) Military expenditure is incurred by the State and it is the main customer for arms. Changing military expenditures, although it is an adjustment by itself, sets off the whole process of conversion.
- (ii) Those military expenditures are determined by political and strategic factors. It is therefore the State, not the market, that determines the level of technical progress in the military industry, whether through the demand for arms or by direct funding. The State is the one that permits the exports of arms because of the importance of political considerations in this regard. Thus, the government has a responsibility not only for military build-up but also during retrenchment (see Anthony et al., 1980 p. 54, quoted in Renner, 1992, p. 223).

The above points to the necessity of interventionist policies to effect the adjustment. However market failure does not mean that the government does not fail. Some intervention will lead the defence industry to be kept in business through, for example, help to maintain certain levels of sales for the otherwise declining industry. The correct policies should aim at restructuring or diversification, because the industry cannot continue producing a good for which demand does not exist. Some propose that the government can follow a policy of carrot or stick; in other words, incentives are given for arms industries to overcome their arms dependence or a mandatory law is adopted to this effect (Renner, 1992, p.223).

Needless to say, the converted plant needs to operate eventually in a market environment where it can be competitive in world markets. The market would have been more successful in salvaging declining civilian industrial plants, since those plants may have been operating in a competitive environment. But in the case of conversion, deliberate macroeconomic and industrial policies are needed. The macroeconomic policy is to prevent recession as much as possible, and the industrial policy is to promote competitiveness. According to Kregel, "latecomers' in competition need institutional support, by national international regulation, in order to succumb to the already leading competitors" (Kregel et al., 1992). This applies to converted industries, which being "latecomers", need to compete with established industries.

Referring to the experience of Britain, Harbor saw two distinct roles for the government. In the first instance governments should give advance information on defence planning to the defence sector, since this will determine the extent to which it is necessary for the defence sector to diversify. Secondly, the government should adopt a direct approach establishing a State Defence Diversification Agency (DDA). Through diversification into the civilian market, the DDA could preserve jobs and R&D (Harbor, 1993).

Making the cuts in military expenditures gradual will help the market to absorb the changes.

2. Countries in transition (CIT)

In the CIT, all economic institutions are affected by the transition to the market economy. Foremost among those institutions is the market itself which, together with the private sector, is yet to emerge. On the other hand, the State is discredited because of the belief that it was responsible for all inefficiencies of the past (Van Brabant, 1994). In the CIT there exists, therefore a dilemma which is seen in reluctance to entrust any task to the State on the one hand and the rush to a market which is not yet there on the other. This is due to the fact that the price liberalization that took place at the

beginning of transition produced the kind of private sector which accumulated short-term profits not related to industrial investment. For all practical purposes, such groups cannot provide the foundation for a domestic market. This means that in these initial stages only private sector which may be available to participate in restructuring and converting the defence industry is foreign capital which however, needs a stable domestic macroeconomic environment.

The fact that the domestic private sector has not yet been created means that there is no private financial institution to which workers can resort to in order to finance their retraining. The first thing is to create the market. If the market is seen as a socio-economic entity, then should be intervention or public action to balance private interest and social welfare (Kregel et al., 1992, p.33). Thus, creating unemployment should not be the means through which to effect SATD, even if the private market and costs so indicate. State-monitored SATD should guarantee that work opportunities exist for the labour released from the military sector.

To the extent that privatization of defence industries is seen as one of the means under which market forces are introduced to the economy, there are important additional factors, in addition to the one just mentioned, which make transferring ownership of defence industries to the private sector difficult to implement.

- (i) The fact that the defence sector is directly connected with the nation security of the country makes it difficult to involve the private sector, domestic or international, in its ownership.

In view of the fact that, for whatever reason, tensions and conflicts did not fade after the end of the cold war, the CIT would want to maintain their military strength. It is thought that privatization would endanger the defence capacities, and that is why in Bulgaria a moratorium was imposed on the privatization of defence industries for three years (Altman, 1994). In Romania a rapid mass privatization plan started in September, 1994 which included 3, 000 enterprises, none of which

belongs to the armament industry. An important reason given for this is that privatization is thought to be a threat to national security (Micrea, 1994). Even if privatization is and thought to be desirable on the grounds of efficiency, a golden share is kept for the government to protect the national interest. That has been the case in France, where the government can acquire a golden share which gives it the right to authorise any participation exceeding 10 per cent of the shares. In fact, in the field of inter alia, defence, any participation exceeding 5 per cent is subject to the approval of the Minister of the Economy (UNCTAD, 1994).

- (ii) The other non-market consideration which prevents privatization of the defence industry is that participants in the military sector form a strong lobby against any lay-offs of the labour force of this sector. Those participants, whether managers or employees, acquire vested interests due to the special relationship that the defence sector has with the government. It is a sector always described as being strategic, which means that it occupies greater priorities in State-funding. As Altman (1994) points out, a high number of deputies are either officers or linked to the military/industrial complex. Hence, they will resist any reduction in the size of the military sector which could be associated with privatization.
- (iii) In principle, defence is a public good which is a case of market failure, i.e. the market cannot specify how much of this good should be produced; such a decision is taken collectively. However, there are two conditions under which the private sector get involved :
 - (a) When demand for arms is guaranteed by its monopsonistic nature.
This happens because of the special relationship that the defence industry has with the government.
 - (b) When the defence industry is being converted to produce civilian products.

But demand for arms is declining then the industry needs to adjust and the private sector will probably not get involved. The indigenous domestic sector is not, as indicated earlier, capable of undertaking such a task and as

some observers point out, "If one considers the economic slump in the region (Eastern Europe), as well as the anaemia of domestic savings and investments, the significance of foreign direct investment becomes obvious ... but the countries which evince better economic performances show a relatively substantial inflow of direct investment" (Daianu, in Weichhardt, 1994, p.251). However, the simultaneous transition to the market system is creating an uncertain environment for investors. The rapid liberalization created political and social risks. This does not conform with market principles that the returns on investment are known with sufficient certainty in which case investment will be sufficiently mobile to move across countries. It was stated (Hegstad and Malleret, in Weichhardt, 1994, p.287) in relation to foreign investment in Russia that there are some general problems which affect the choice of a project to be financed by private investment, namely an uncertain legal framework, an absence of audited financial statements, and uncertainty about ownership rights, among others. The solution of these problems will enhance the smooth operation of the market system, which will thrive when the State has the means to protect it (Hegstad and Malleret, 1994).

Because of the shortage of consumer goods in these countries, it is envisaged that there will be enough demand for civilian production when a facility is converted. To the extent that this implies that the new industries will be profitable, then it is expected, in principle, that the private sector will be willing to get involved. Such a process requires that the State help create a stable macroeconomic environment, for if inflationary pressures are accentuated, this will require a tightening of monetary policy in which case interest rate will go up discouraging private investment⁽¹¹⁾. The State can also cooperate with international investors to formulate a strategy for conversion with the emphasis initially on success stories,⁽¹²⁾ hoping that this will have a snowball effect. In other words, the State, together with international investors, can pick winners in conversion.

3. Developing Countries

The role of the military in these countries is less technological and more political, and the armed forces are better funded and more organized.

than other institutions (UNDP, 1994). In those developing countries which are arms producers, the military has access to the most talented and skilled labour force with a lot of fringe benefits. This state of affairs, together with the absence of a planning strategy for conversion in these countries, constitutes an obstacle to conversion.⁽¹³⁾

Having said this, it remains true that in developing countries in general, the defence sector is a labour-intensive importing sector, which means that the problems of SATD relate to finding alternative employment for armed forces and alternative use for the foreign exchange saved.

For labour, the most important observation is that the training received in the military sector, unlike that received in developed market economies, is modest, with more or less direct applications in the civilian sector. However, and unlike the environment in developed market economies where the market is mature and flexible, the market in developing countries is rigid, with a great many imperfections.

- (i) Information about the availability of jobs may be lacking. In the places where jobs are available, the infrastructure may not be developed enough to permit a smooth movement of labour.
- (ii) An important feature of the trade and development aspect of SATD is that labour should not only move to the civilian economy but to the tradeable civilian economy. There is no guarantee that the labour would do so in the absence of intervention in the form of incentives. The tradeable sector should be competitive, and various actions are thus needed to help the sector to stand on its feet, i.e. the sector may need to be treated as an "infant industry". The importance of this emanates from the fact that the reduction of military imports will lead to appreciation of the nominal exchange rate if SATD is brought about automatically by the market, with adverse effects on competitiveness. The foreign exchange component which is saved can be used to foster the tradeable sector.
- (iii) The adverse social effects may be aggravated if the market is not assisted by public action. SATD will produce negative consequences

immediately, relating not only to unemployment but also to social effects on certain towns and localities. Those negative consequences stem mainly from the reduction in the domestic currency component of military expenditures.

- (iv) Absorption of released resources is easier when an economy is growing or expanding, for if retrenchment takes place when the economy is stagnating, the market signals from the civilian economy will not encourage the labour to move. There therefore seem to be a need for an institution that chooses the appropriate time for the release of resources.

The State can, in the event of a disarmament shock, help isolate the economy, as far as possible, from the effects of that shock. Changing military expenditure is one of the tools of fiscal management, and whereas, by its very nature, the shock is unpredictable, the State can albeit at a cost, choose the timing of the military expenditure cuts. If the economy is going through recessionary conditions with high unemployment, then at first the State, together with the private sector, should work outside the military sector to increase growth and employment possibilities there. Cutting military expenditures under these conditions will create a stable environment, since the released labour is likely to be absorbed by the civilian sector. Such an environment, will also be created since cutting the expenditures will exercise a downward pressure on interest rates and moderate inflationary pressures.

- (v) The saving resulting from the reduction of military current expenditures (domestic peace dividend), by its very nature, is subject to government policy. It is thought that the options open to the government may be as follows :

- (a) The State can use this dividend to achieve an internal balance which contributes to a stable environment, itself a condition for a growth-oriented adjustment. Indeed, reduction of excessive military expenditures is an appropriate domestic adjustment measure, since it diminishes the need to cut essential social or

investment expenditures. This peace dividend can be utilised for investment if the country is assisted by measures that reduce its interest payments on debt, for example.

- (b) The government can seize the opportunity to use the reduction in excessive military expenditure as a fiscal policy measure for development. It can therefore allocate the dividend to development banks, public or private. This is because of the rudimentary nature of the conventional financial intermediation institutions which are, in effect, among the missing markets in developing countries.

However, developing countries remain short of finance because of the low saving rates and inadequate external finance. It is unlikely that any progress on SATD can take place without external support. The expansion needed in the labour market outside the military sector is large, since the military sector in developing countries is basically armed forces which are directly affected by the military expenditures cuts.

In addition, having an expansionary environment to absorb the labour released from the military sector is important but that environment should not be inflationary. It is true that the reduction of military expenditures may help in stabilizing the economy through its contribution to lowering the budget deficit but there will be other important elements aggravating the deficit, such as interest payments on debt.

The foregoing analysis pointed to the sources of failure of the market in effecting SATD and some overall direction of policy intervention. UNIDIR, however, has presented a comprehensive table on the policy options which can be employed to effect an orderly conversion (see table 1).

While the policies are for all countries, certain among them are particularly relevant for developing countries. An aggregate demand policy is not only to avoid recession during the conversion process but also to generate employment opportunities in the civilian sector because of the fact that the military sector is mostly armed forces and personnel. International trade policy could be an important component of SATD. As developing

countries are mostly arms importers, arms import reduction is the sort of an adjustment policy which may not be considered deflationary. This is because arms imports mostly consist of weapons which are destined for final use, not intermediate or investment use. To the extent that the saving which may emanate from the reduction in arms imports can be used for investment and growth, this adjustment can be considered a growth-oriented one.

Of particular importance are the fiscal measures to alleviate poverty which might be caused from unemployment during the disarmament process.

The social infrastructure policy is relevant to the nature of conversion in developing countries in so far as industrial conversion in those countries is, on the whole, one of converting military infrastructure. The involvement of the private sector in this kind of conversion encounters important problems due basically to the non-commercial nature of infrastructural projects which makes asset valuation rather difficult (UNCTAD, 1994).

International public policies are needed both for arms-importing and arms-exporting developing countries. Even though the former countries would save from the reduction of their military expenditures and imports, for their growth opportunities not to be adversely affected international support is needed to help meet the cost of conversion and to activate the economy so that it can absorb the released resources. For arms-exporting countries on the other hand, disarmament is a negative shock. Their problems are similar to those of developed countries and countries in transition, but the loss of foreign exchange has important adverse effects on their growth prospects. The finance needed in this case is to meet the cost of conversion and to compensate for the loss of export earnings.

Conversion in industrialized countries will be more easily undertaken in a dynamic economic environment (Un, 1981). A successful conversion of military industry requires that the demand for their new products be relatively secured. This means that finding new markets, which in civilian production, as compared to military production, are competitive, assumes particular importance. It is difficult to imagine that export-oriented

Table 1
Policy Options

Type of Policy	Examples
Manpower policy	Training
	Retraining of managers and workers
	Job information
	Labour mobility
	Early retirement
Capital Policy	Retooling old plant and equipment
	Investing in new plant and equipment
	Producing new consumer goods
Science and technology policy	Use of scientists and engineers
National regional policy	Location of industry policy
Social infrastructure policy	Building airports, roads and expanding telecommunications
Industry policy	Subsidies to civil research and development
	Subsidies to labour and/or capital
	Government contracts for civil goods
State conversion agency	Aiming to assist the conversion of plants
	from defence to civil markets.
Aggregate demand policy	Using government expenditure to avoid
International trade policy	recessions.
Income deficiency	Support for exports and import saving
payments	Aimed at compensating the losers from
	disarmament; e.g. unemployment pay and
International action.	redundancy pay (social safety net)
	Role for international agencies in
	disseminating information and experience on adjustment.

converted industries in the developed market countries. It seem important, therefore, to enhance the import capacity of developing countries. One way to effect this is to increase capital flows to developing countries made possible by reduction of military expenditures, or to reduce their debt burden. Alternatively, the reduction of military expenditures could be used to rectify budgetary balances, with favourable consequences on world interest rates and eventually the debt burden.

C. A sequence for SATD

It is known that the financial sector moves at a different speed from the real sector with the former moving faster than the latter. How does SATD fit into this framework?

- (i) Reduce excessive military imports. While this will help mobilize foreign exchange, its adverse consequences as far as unemployment is concerned are minimal.
- (ii) Concentrate on the labour market in the civilian market with the aim of expanding it. Create labour-intensive capacities using the foreign exchange already mobilized, together with appropriate fiscal and monetary policies.
- (iii) Use fiscal and monetary policies to contain inflation. Even if the labour market is there to absorb the released labour, correct signals need a non-inflationary environment to guide the movement of labour.
- (iv) Make small and gradual reductions in the domestic currency component of military expenditures. This will aid the market to absorb the labour, especially if the capacities mentioned in (ii) above are created and gradual cuts in military labour are made.
- (v) In the CIT, the sequence should start with certain cases which will have, it is hoped, a spin-off effect, as indicated above. The conversion here is akin to a restructuring of a public enterprise. Under these conditions it is easier to get foreign finance or joint ventures. This should give some time to create the necessary domestic financial institutions which do not yet exist in those countries.

In the absence of foreign finance for restructuring there will probably be a tendency to promote further arms exports to get the resources needed for market reforms.

IV. The Effect of the Peace Dividend on Growth

A Simulation Exercise.

Increasing capital flows to developing countries may activate their economies and increase imports from developed countries. In this chapter, the results of a simulation exercise⁽¹⁴⁾ on the effect of reduction of MILEX on growth in developing countries is shown. These simulations take into consideration the fact that, as far as developing countries are concerned, a distinction should be made between the domestic peace dividend (DPD) which may be generated from a domestic adjustment effort emanating from the reduction of MILEX in those countries, and the external peace dividend (EPD) which is supposed to be generated from the reduction in MILEX in donor countries and in turn is reflected in greater external finance for developing countries.

A main objective of the exercise is to assess the relative potential effect of the two kinds of peace dividend and whether the DPD alone can alleviate the negative consequences on growth of an increase in interest payments on debt, in other words, to put the DPD in the right context as far as its potential contribution in alleviating the negative effect on growth stemming from the negative transfer of resources. Furthermore, the simulations will attempt to find out the increase required in both DPD and EPD so that developing countries enjoy sustained and increase growth.

In conducting these simulations, it is recognised that DPD may not necessarily be destined for growth; it may be reflected in an increase in other types of expenditures, e.g. social expenditures, specially when a resource constraint exist.

This point has a bearing on the effect of the cut in MILEX on interest rate since the government budget deficit will remain unchanged if the DPD is used elsewhere. The favourable effect on worldwide interest rates is mainly related to cuts in military expenditures in developed countries, which

means that it is not correct to generalise that "cut in any country produce significant positive externalities for the rest of the world, both through lower interest rates and changes in real exchange rates" (IMF, 1993, Annex II).

But, while the reduction in MILEX in developing countries may contribute to the elimination of the budget deficit in those countries, some of the savings relate to the domestic currency component, i.e. wages, which is an important element of MILEX, as the military sector in developing countries is more or less a "labour sector", not an "industrial sector".

In contrast, the external peace dividend, should it materialize, will constitute a financing option, since it takes the form of foreign currency, which means that it could contribute positively to the import capacity of developing countries.

The EPD is part of SATD in developed countries, and these countries may choose to utilize the cuts in MILEX to increase social expenditures or lower taxation. However, the unemployment problem in those countries resulting from the transition to disarmament can only be mitigated by enhancing their growth prospects so that the civilian economy can absorb the released labour. Therefore, for SATD in those countries to generate growth and not merely to rectify balances, export demand should be bolstered, especially from developing countries thanks to the reduction of MILEX in developed countries.

Therefore, despite the myths which beset the concept of the peace dividend (UNIDIR, 1993, p.67), it is thought that it might assist developing countries in two principal ways :

- (i) In a direct manner, as additional capital flows;
- (ii) Or through the reduction of the budget deficit in developed countries and the consequent easing of worldwide interest rates.

V. Description of The Simulation Results

The effect of both DPD and EPD is quantified until the year 2000 with the following scenarios taken into account :

- (i) A baseline scenario : this assumes that the net transfer of resources

(interest payments plus net capital flows ⁽¹⁵⁾ will undergo no change, in terms .

- (ii) A scenario in which the net transfer of resources deteriorates, with the assumption that interest payments will increase by 5 per cent and net capital inflows to developing countries will decrease by 5 per cent.
- (iii) The effect of the development in the peace dividend, domestic and external, will be quantified taking the above two scenarios (No change and deterioration in the net transfer of resources) into account. The assumptions regarding the evolution of the two kinds of the PD are as follows :
 - (a) Both DPD and EPD experience no change over and above the levels attained in 1992;
 - (b) Both DPD and EPD increase by 5 per cent annually⁽¹⁶⁾
 - (c) Both DPD and EPD increase by 7.5 per cent annually.

Thus six scenarios were obtained, the behaviour of which is depicted in figures 1 and 2. The main conclusions are :

- (i) Despite the fact that there was no further deterioration in the external environment of developing countries over and above what was experienced (see Annex table 1) - i.e. the behaviour of both interest payments and net capital flows underwent no change-the growth rate experienced a slight decline. The reasons, inter alia, are due to the fact that the peace dividend (domestic and external) is either assumed to experience no change during the period (as indicated in a above) or the percentage increase assumed in its volume (5 per cent) was insufficient to lift the growth. Even with a percentage increase of DPD of 7.5 per cent it remained unable to lift growth, despite the fact that the net transfer of resources did not deteriorate further. However, in this case, the decline in growth became milder. This points to the limitation of domestic adjustment alone in correcting the external imbalances and increasing the growth rate.

The assumed increase in the external peace dividend (EPD) by 7.5 per cent, in contrast, was able to push growth higher, with an increasing trend from the beginning of the period (figure 1).

The conclusion here is that when developing countries do not encounter an adverse external environment, then their own efforts and the help they get in the form of the peace dividend from developed countries turn out to be more effective as far as growth is concerned. Growth increases with EPD, and its decline is lessened with DPD.

- (ii) The adverse external environment represented by a decline in net transfer of resources over the period (a 5 per cent increase in interest payments and a 5 per cent decline in net capital flows) depressed growth prospects throughout. All increases in PD were not sufficient to lift growth, except when the EPD is assumed to increase by 7.5 per cent, where the growth starts to pick up towards the end of the period (figure 2).

A sustained transfer of resources in the form of PD, especially its external part, seems to be necessary for growth.

VI. Conclusion

The resources released during the transition to disarmament are labour and capital and financial resources. It is argued in this paper that, because the market emphasizes short-term profitability, SATD will be effected through unemployment to reduce cost in response to the reduction in sales or as a result of a diversification strategy. The prevailing wage level will not, in this case, reflect the socially desirable level, which means that, in the social sense, productive efficiency is not achieved. Meanwhile, to the extent that unemployment means that resources are not allocated to any other production activity, allocative efficiency is not achieved which, in turn means that labour could potentially be used to make society better off.

The basic rationale for the role of the State is that defence is a public good. It is produced through military expenditures which are part of fiscal

policy. When the demand for that good declines it is the responsibility of the State to make the decline in military expenditures as orderly as possible so as to minimize the adverse social effect of the transition to disarmament. In this way the State assists the market, for if the cuts are made gradually the market will probably be able to adjust and absorb those cuts. It was also argued that State-funding is required for retraining because of the fact that private financial markets are unlikely to be willing to finance training for labour whose employment prospects are uncertain.

In the countries in transition, the market is yet to be created. To create a market, a role for the State could be envisaged to help create the stable conditions within which the market and the private sector could develop. This seems to be the priority. The only private sector which might have a potential role in conversion is foreign capital.

For developing countries, the State is needed to help allocate the foreign exchange saved for development purposes. This can be done either by directly allocating the resources for development projects or by replenishing development banks.

As regards labour, the experience acquired in the military sector in developing countries has almost direct application in the civilian sector. Despite the fact that the finance needed for retraining purposes may be modest, such finance may not be forthcoming from private financial markets or it may be beyond the ability of this labour to service. Having said this, there is a need to expand the employment opportunities in the civilian sector. This is probably the first stage to start with.

In DVD, SATD takes the route of deficit reduction, which might help DVG through lower interest rates. Another route is to channel the savings to financial assistance for developing countries. This will help the latter to increase their imports, which basically come from developed countries.

The mere reduction in MILEX, i.e. the domestic peace dividend, is not sufficient to achieve sustainable growth in developing countries. A further impetus to help achieve such growth is through an increase in the inflow of resources, and an important segment of this may come from the external

peace dividend.

Annex

1. The methodology of the simulation exercise is based on the assumption that the rate of growth in the economy is determined by the relative contribution of the domestic saving efforts and the net transfer of resources (net capital flows plus net interest income). The domestic peace dividend is treated as an addition to domestic efforts and the external peace dividend as addition to capital flows segment of the net transfer of resources.

Methodology of the simulation exercise :

The gross national product (GNP) is defined as follows :

$$\text{GNP} = C + I + X - M + \text{NFI} \quad (1)$$

Where :

C is total consumption (Private and government)

I is gross investment.

X is exports of goods and services

M is imports of goods and services.

and NFI is net factor income abroad.

Rearranging equation (1), gross domestic investment can be written as follows :

$$I = S + (M - X - \text{NFI}) \quad (2)$$

In other words, gross domestic investment is equal to the sum of national saving and external saving where national saving is :

$$S = \text{GNP} - C$$

Equation (2) can be written as follows :

$$I = s.\text{GNP} + \Delta D \quad (3)$$

Where D is the stock of external debt.

Defining gross domestic investment back in terms of gross domestic product (GDP) gives :

$$I = s.GDP + \Delta D + s.NFI$$

Which actually defines gross domestic investment in terms of domestic saving and the net transfer of resources, and

$$I/GDP = \sigma I \quad (4)$$

Where σ is the reciprocal of incremental capital-output ratio or marginal productivity coefficient Equation (4) indicates that the change in GDP depends on investment, and

$$\Delta GDP/GDP = \sigma (s + (\Delta D + s.NFI)/GDP) \quad (5)$$

Equation (5) shows that growth $\Delta GDP/GDP$ depends not only on saving efforts but also on evolution of net capital flows ΔD and NFI which is assumed here to be exclusively net interest income. It is used to evaluate the effect of the peace dividend (PD), which is divided into the domestic peace dividend (DPD) and the external peace dividend (EPD), on growth under the assumption that the net transfer of resources will either undergo no change or deteriorate as explained in the text. Equation (5) therefore becomes :

$$\Delta GDP/GDP = \sigma ((s + (\Delta PD /GDP)) + ((\Delta D+EPD) +s.NFI)/GDP) \quad (6)$$

2. The historical time series used in the computations were obtained from various issues of the Handbook of International Trade and Development Statistics (UNCTAD, various issues). For the following variables :

- * The saving ratio was calculated from table 6.3 of the Handbook;
- * Data on net transfer of resources as far as external debt is concerned are taken from table 5.13 and reproduced in Annex table 1. External debt here refers to "public and publicly guaranteed debt", which represents at least 90 per cent of the long-term outstanding debt of developing countries (World Bank, 1996).

The data on peace dividend in development and developed countries are taken from table 3.1 in the Human Development Report, 1994, and are reproduced in Annex table 2.

Annex Table 1

Net transfer of resources in developing countries (in billions of US\$)

Year	Disbursements	Amortization	Interest Payments	Net Transfer
1987	67.8	46.9	40.2	-19.3
1988	74.9	49.7	47.7	-22.6
1989	46.8	50.1	41.4	-26.7
1990	72.8	55.7	39.7	-22.6
1991	71.5	51.3	39.4	-19.2
1992	75.1	61.5	37.8	-24.3

Annex table 2**Global military expenditures and the peace dividend**

(Billions of US\$ in 1991 prices and exchanges rates)

Year	World	DVD	DVG	World	DVD	DVG
1987	995	850	145	0	0	0
1988	970	835	135	25	15	10
1989	945	815	130	50	35	15
1990	890	760	130	105	90	15
1991	855	725	130	140	125	15
1992	815	690	125	180	160	20
1993	790	669	121	205	181	24
1994	767	649	118	228	201	27
1987-94	7027	5993	1034	933	807	126

Note : DVD : Developed Countries

DVG : Developing Countries.

Figure 1
 Effect of peace Dividend on growth in developing countries
 No change in the net transfer of resources

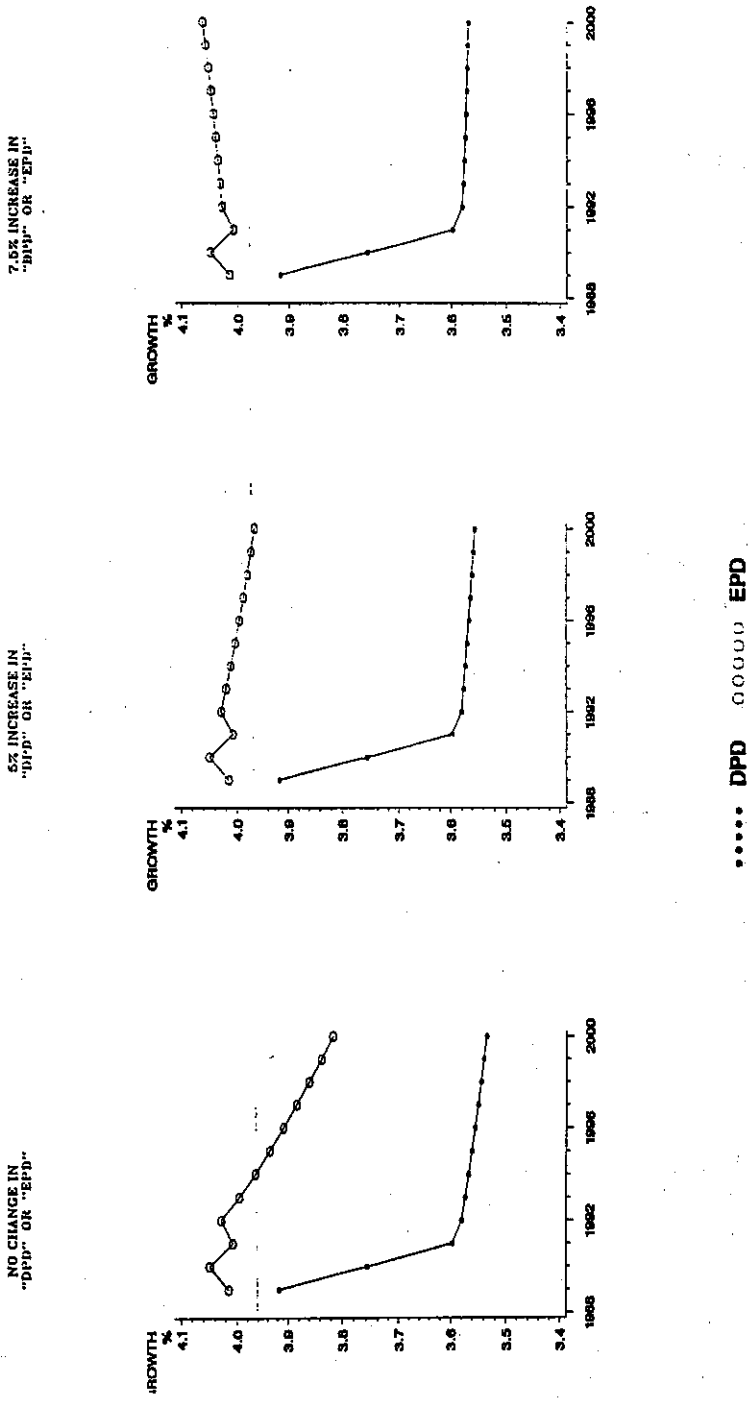
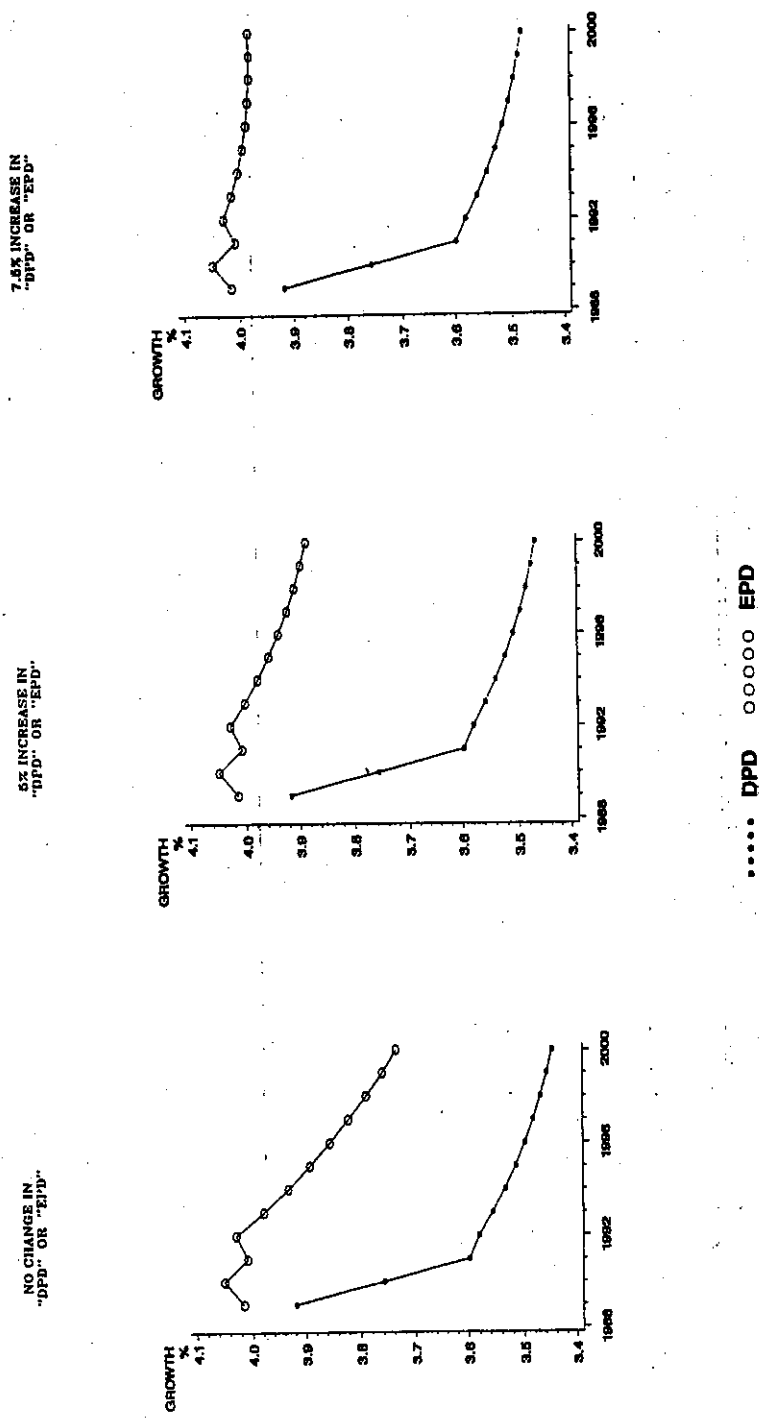


Figure (2)

EFFECT OF PEACE DIVIDEND ON GROWTH IN DEVELOPING COUNTRIES
 DETERIORATION IN THE NET TRANSFER OF RESOURCES
 5% INCREASE IN INTEREST PAYMENTS / 5% DECREASE IN NET CAPITAL FLOWS



FOOTNOTS & REFERENCES

1. For a definition by the International Monetary Fund, see in particular appendix 2 in Ball (1998, p. 403).
2. For an extensive discussion of this point, see Deger (1986, ch. 4).
3. This premise was claimed by Benoit (1978).
4. The contribution of interest payments to the current account deficit in the corresponding period is such that those payments were almost equal to four times the deficit in the period leading to the end of the cold war and double that deficit in the period after the end of the cold war. For data on military import of developing countries see US Arms Control and Disarmament Agency (1993-1994). For data on total imports, interest payments and current account balances see UNCTAD (various issues).
5. In developing countries, employment in the military sector is mostly armed forces. The percentage of the latter in total employment of the military sector (excluding China) is 87 per cent. In developed countries and countries in transition the corresponding ratios are 54 per cent and 50 per cent. These percentages are calculated from table 1 in Renner (1992).
6. The employment consequences of changing military expenditures do not only relate to the number of jobs created. It relates, among other things, to the skill composition and the geographical distribution of employment. See Dunne (1991).
7. The effect of an increase in defence expenditure in six industrialized countries on job creation is in general less than when a decrease is experienced in those expenditures (see Dunne, 1991, table 2.2 p. 25).
8. For a discussion on the IMF/World Bank stabilization/structural adjustment programmes, see UNCTAD(1991).
9. The diversification strategy may include the divestment of military divisions in the industry and the acquisition of, or merging with, civilian industries. This strategy does not concern itself with finding employment for the workforce, and is associated with lay-offs. Under the "spin-off" strategy, technologies originally developed for military purposes are now used for civilian purposes. It is a strategy appropriate in the firms which are engaged in dual-use technology. Conversion involves the alternative use of the productive capacities of military industry (Renner, 1992, p.32).
10. See Brauer and Marlin (1992) on the fact that with severe local economic dislocation it is precisely that planning that is needed. Harbor (1993) points out that

experience in Britain has shown that one of the distinct roles of the government is to make available to the defence sector accurate and advanced information on defence planning

11. See UNCTAD (1994, paras. 37-38) for a discussion of this point.

12. See Hegstad and Mallert (1994). It is stated here that the European Bank for Reconstruction and Development will equity invest when it considers that the terms are fair, that clear potential exit strategies are perceived and that the internal rate of return is acceptable. Despite the fact that the Bank favour projects with a clear prospect of privatization, it does not require that immediate privatization be a prerequisite.

13. See Melman (1980) for an elaboration regarding the nature of the military economy of developing countries.

14. See the Annex about the methodology of the simulation exercise and data sources used in this respect.

15. Net capital flows are estimated from external debt data (Public and Publicly guaranteed debt); as explained in the Annex, while this, needless to say, does not cover the totality of financial flows, it is designed to pinpoint the contribution of the external peace dividend to alleviating the debt burden.

16. The assumption of an increase in EPD is not necessarily inconsistent with the assumption of a decrease in net capital flows since the former is in gross form. Thus the assumed deterioration in net capital flows may very well be the result of an increase in repayments of past debt. In addition, the net capital flows as indicated in previous footnote and shown in the Annex are assumed specifically to relate to external finance in the form of peace dividend increases. I should like to thank the anonymous referee for drawing my attention to this point.

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