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THE PEACE DIVIDEND

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Chapter 24

Military Spending Cuts and the Global Economy*

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The end of the Cold War presents the global community with the opportunity to reduce the amount of resources allocated to defense expenditures. This chapter considers the quantitative implications of plausible cutbacks in defense expenditures in the industrial economies over the next two decades. A reallocation of resources away from the defense industries in many economies will inevitably lead to reduced economic activity in the medium term because the resources released from defense-related industries cannot be automatically absorbed into private production. Nonetheless, in the short run there can be gains to credibly announced cutbacks in defense, and the medium-term costs can be reduced as long as the savings are used to reduce government fiscal deficits. In the longer run it is estimated 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, suggests a payoff to international cooperation and burden-sharing during the adjustment process. This chapter also considers the problem of the movement of weapons into developing countries as a result of the reduction in defense 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.

1. The End of the Cold War

Few events will have such an impact on the evolution of the world economy during the 1990s as the end of the Cold War. The world economy, and that of Europe in particular, is already experiencing the consequences of the reunification of Germany, and the collapse and restructuring of the economies of Eastern Europe

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and the former Soviet Union (hereafter referred to as EFSU)[1]. This chapter focuses on two other aspects of the end of the Cold War. The first is the possible path of future military expenditures within the industrialized economies and the likely implications for the world economy into the next century. The second is how to prevent an arms expansion in the developing world, which could follow from the dismantling of the military establishments in member-countries of the OECD and in EFSU.

McNamara (1991) and Kaufman & Steinbruner (1991), among others, argue that it is feasible to halve US military expenditure from the 1990 level to around 3% of GDP by the end of this decade. President Clinton's first budget, announced in February 1993, proposed cuts to around 3.3% of GDP by 1997, although the emergence of a Republican-controlled Congress at the end of 1994 has raised some doubt about this target being realized. Other OECD member-countries are also likely to be cutting defense budgets, given the decline in the threat of Soviet/Russian military activity, although to date the response of European NATO members has been cautious (Deger & Sen, 1992; Kirby & Hooper, 1991)[2].

This chapter does not focus directly on the economics of military spending, but it draws on the extensive literature in this area. The reader should refer to Chapter 2 of Gleditsch et. al. (1994) for a concise survey of this literature. The present chapter starts with an overview of the historical experience of worldwide military expenditures and arms trade since 1979, before going on to consider the likely impacts on the world economy of cuts in military spending. We employ the European version of the McKibbin-Sachs Global (MSG2) Model to consider a cut in US defense expenditures where these are limited to 3.2% of GDP after 1997 (McKibbin, 1994; McKibbin & Sachs, 1991)[3]. This chapter also considers the implications of moderate cuts in European military spending sufficient to keep military spending no greater than 2% of GDP in each country by 1997. The likelihood of these cuts is debatable, given political considerations, although military budgets as a share of GDP have already begun to fall gradually in many of these countries. Despite the considerable uncertainty about likely scenarios, a sizeable cutback in European military expenditure (although substantially less than in the United States) can provide a useful benchmark for evaluating other scenarios (Gleditsch et al., 1994; Klein et al., 1995)[4].

The shape of the new world order is still unclear. However, the Iraqi invasion of Kuwait and subsequent Gulf War in 1991 have illustrated that it is quite possi-

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1 For an analysis of these issues see for example Collins & Rodrick (1991). Also see CBO (1990) and McKibbin (1992) which use a version of the same model underlying this study.

2 See Kirby & Hooper (1991). Deger & Sen (1992, p. 190) suggest that in reality, despite the expectation and the need for cuts, these are unlikely in Europe for a long period.

3 See McKibbin & Sachs (1991) for a complete description of the model and applications to issues of interdependence and policy coordination in the world economy using an earlier version of the model. The version used in this chapter is version 40.

4 It is also important to present scenarios in a quantitative framework, yet there are few studies of this type. Exceptions include Gleditsch et al. (1994) and several contributions in Klein et al. (1995).

ble that the Cold War between the two superpowers could be replaced by a number of regional conflicts. Some of these conflicts could be the direct consequence of the transition from a high to a low level of military expenditure in industrialized countries, which in turn has led to weapons being recycled to developing countries (cf. Anthony et al., 1991). Indeed, the CFE (Conventional Forces in Europe) Treaty places no restrictions on exporting either new or second-hand weapons to countries not signatories to the agreement. The second focus of this chapter is on the transfer of arms to developing countries. In particular it examines the magnitude of the arms trade, and policies that can be followed to minimize the extent of regional military buildup. Minimizing the proliferation of military equipment now should also mean a reduction in the future threat of regional conflicts.

One approach to addressing the issue of arms transfers to developing countries would be an embargo on the export of arms from the OECD and EFSU countries to developing countries. This we evaluate by considering the global implications of a cut in arms exports to developing countries. Another approach is represented by the position adopted by the Japanese government in June 1992 of directly tying development assistance to some measure of the extent of militarization of developing countries. The best known proponent of this approach is Robert McNamara (1991, 1995; cf. also Ball, 1995). This chapter argues, however, that tying development assistance to measures of military excessiveness does not directly address the underlying problems of security and may not be the most desirable way to reduce military budgets in the developing world. As noted by Sen (1995), a set of rules is required that can shift the military equilibrium away from a non-cooperative (Nash) equilibrium with high military expenditure and reduced security, to a cooperative equilibrium with low military expenditures and greater security.

The latter part of this chapter discusses a third approach proposed by McKibbin (1993), which directly addresses this problem. This proposal is to create new international security arrangements around a system with two key features. The first is to provide direct economic incentives to countries that limit arms transfer and the extent of militarization. The second feature is to address directly the problem of enhancing regional security. These two issues are fundamentally linked, as greater regional security will reduce the military requirements of individual countries, while reduced military outlays will increase regional security. This proposal is elaborated in Section 4. In summary, it involves levying on all members of the United Nations a tax in proportion to a combination of the exports of weapons and military expenditures. Part of the revenue from a such a tax should be used to finance monitoring by regional security groups. The remainder of the revenue could be allocated to a central fund, perhaps controlled by the UN Security Council, to be used exclusively to finance military interventions by the international community in response to individual acts of aggression by countries. This proposal has the advantage of directly addressing an essential aspect of the

cause of military expansion (the perceived threat or perceived benefit to aggression), rather than only the symptom of military expansion (reflected in greater arms imports). Secondly, the proposal is likely to raise the general level of global security, by providing greater monitoring of security by regional agencies as well as providing a central fund to deter aggression credibly. Finally, it separates the issues of development assistance and military budgets. It keeps resources within organizations such as the World Bank focused on their primary role of aiding in the development process, and prevents these resources from being redirected to evaluating excessive levels of military spending in developing countries.

2. Military Expenditure and Arms Trade

In this section I summarize recent trends in military expenditure and military arms trade. Various data sources are available, including the US Arms Control and Disarmament Agency (US ACDA, annual) and the Stockholm International Peace Research Institute (SIPRI, annual). Of course, there are problems with the data on military expenditure and arms trade, as discussed in e.g. US ACDA (1990), CBO (1992c, appendix A), Sen (1992), and SIPRI (1991, 1992). I rely on data from US ACDA, except where noted that I have used more up-to-date SIPRI material.

2.1 Military Expenditures

Military expenditures by industrialized regions and developing regions, 1979–93, are shown in Figures 2.1 and 2.2. We also show data for selected OECD countries from 1987 to 1993 in Figure 2.3. Data for each region or country are scaled by the Gross National Product (GNP) of that country or region, to give a measure of the proportion of the country's resources devoted to military expenditure.

We note a gradual rise in the ratio of world military spending to GNP from the beginning of the period through to 1983, peaking at 5.7% of GNP. Spending as a share of GNP then declined gradually to 4.2% of GNP by 1991. This pattern of build-up and subsequent decline is consistent across each region shown – except in South Asia, which peaked in 1987. There is also a clear change in trend in the Middle East during the Gulf War. Although there are similar trends in the data, the shares of resources devoted to military expenditures differ substantially across regions. From Figure 2.2 it is clear that countries in the Middle East spent by far the largest proportion of GNP on military outlays: at 17.4% of GNP in 1983, this was almost three times the world average. The next highest regional spending was in the Warsaw Pact countries: close to 12% of GNP in the same year. The only other country to allocate more than the world average to military expenditures was the United States, which peaked at 6.6% of GNP in 1986.

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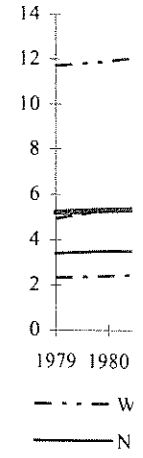

Source: US ACDA

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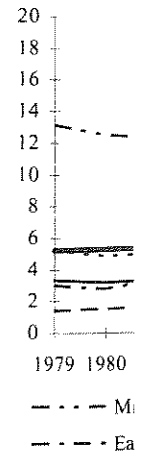
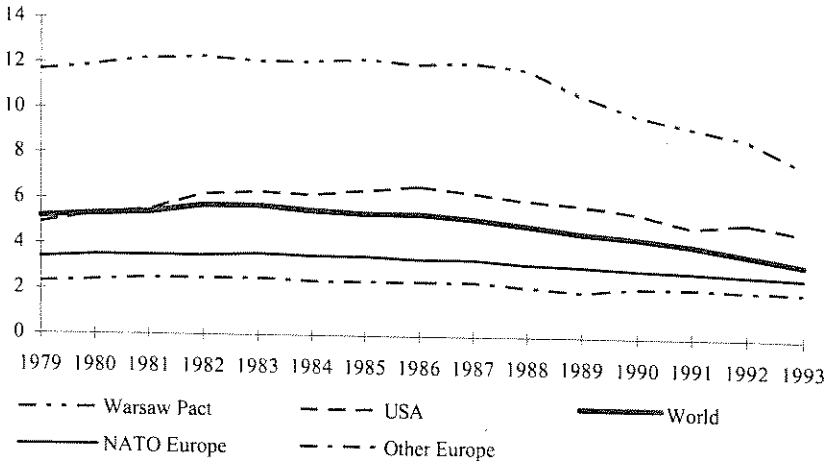


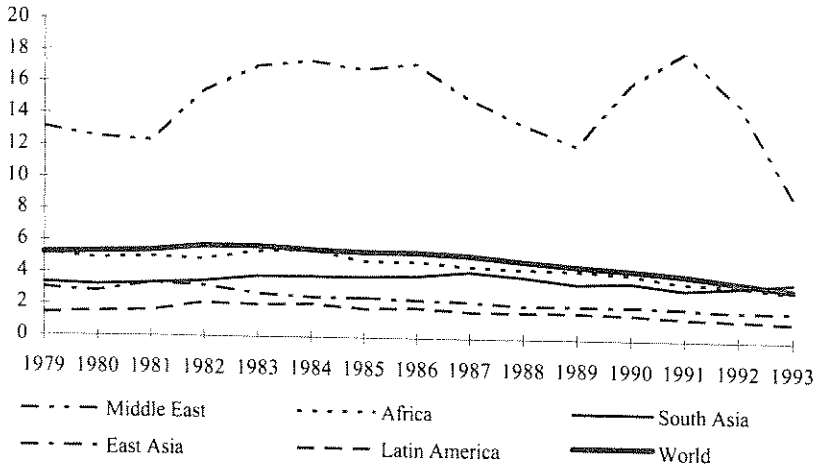
Source: US ACDA

Figure 2.1 Military Spending in Industrialized Regions as a Share of GNP (%)



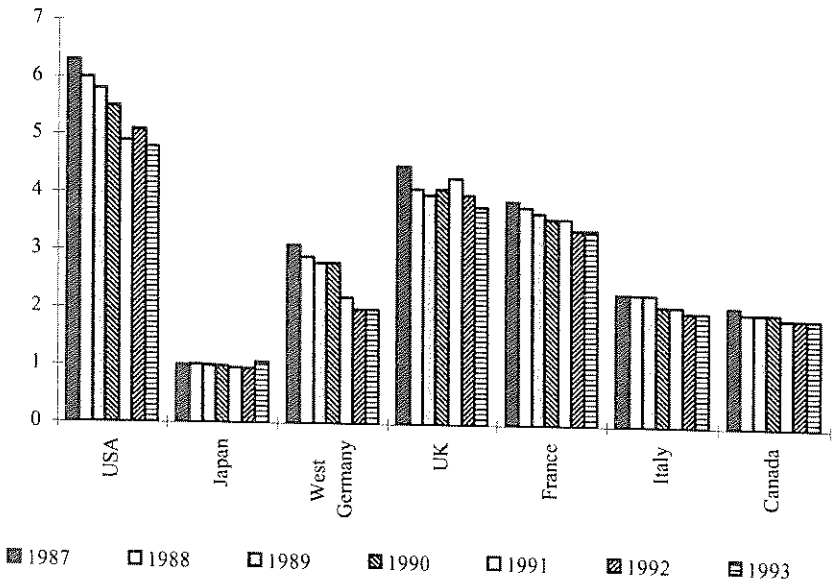
Source: US ACDA (various years).

Fig 2.2 Military Spending in Developing Regions as a Share of GNP (%)



Source: US ACDA (various years)

Fig 2.3 Military Spending in Selected OECD Countries as a Share of GDP (%)



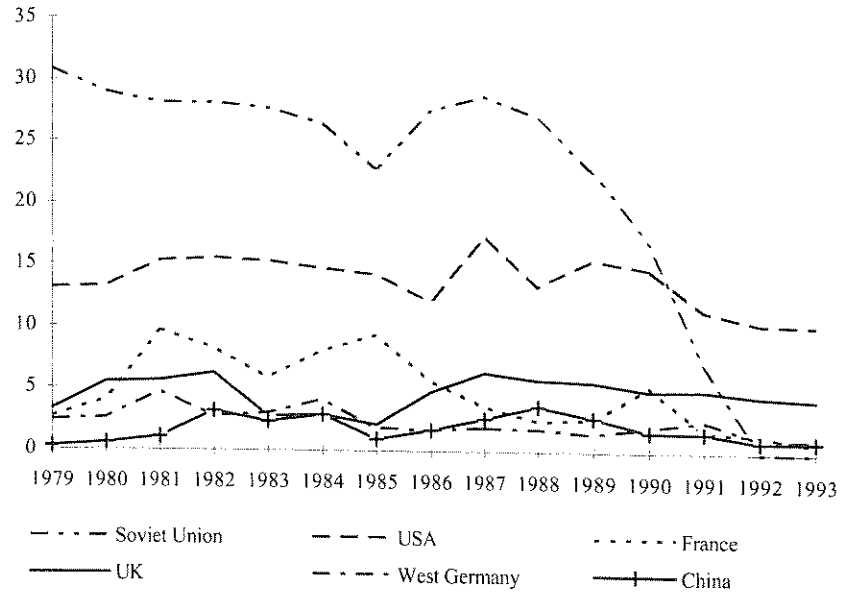
Source: SIPRI (1992, 1993, 1994; IISS (1993, 1994); author's calculations.

Figure 2.3 shows military spending data for the major OECD economies. The declining trend in military outlays continued through 1990 and 1991 for most regions (cf. Deger & Sen, 1992)[1]. In 1992, the US Congressional Budget Office projected discretionary defense spending in the United States to be down to 4.8% of GDP by 1993 from 5.7% in 1991, under the assumption that the discretionary spending-caps of the Budget Enforcement Act of 1990 would be binding (CBO, 1992c, p. 35). By 1997 this figure was projected to be down to 4.3% of GDP (around USD 335 billion in 1992 dollars) under the assumption of binding spending-caps and a minimal cutback in resources devoted to defense (CBO, 1992c, Table 11 and author's calculations). With the proposals in President Bush's 1993 budget, this ratio would still be 3.8% of GDP (around USD 292 billion in 1992 dollars) by 1997. The share of military spending in President Clinton's budget proposal of February 1993 would further cut this figure to 3.3% of GDP by 1997.

Under these scenarios, the share of US resources devoted to military spending would still be larger than the case in other major OECD countries. A comparison for 1987 through 1993 in Figure 2.3 illustrates this: the United Kingdom spent

[1] According to SIPRI's data, military expenditure in the Middle East increased in 1991 due to the Gulf War. There was also a significant rise in Chinese defense expenditure in 1990 and 1991.

Figure 2.4 Arms Exports, by Country (Billion Constant 1991 USD)



Source: US ACDA (various years).

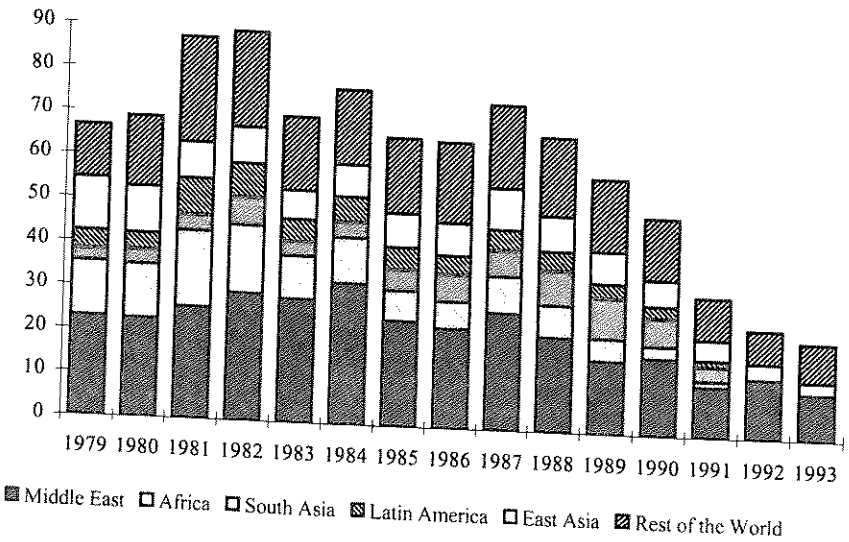
just over 4% of GDP on military equipment in 1990, followed by France (3.6%) and West Germany (2.8%).

2.2 Arms Trade

Total world exports of arms, in constant and current dollars, rose through 1987 but have been gradually declining since. Figure 2.4 shows data for the six largest arms exporters from 1979 to 1993: the former Soviet Union, United States, France, West Germany, United Kingdom, and China. Figures are in billions of constant 1993 USD. With the late 1980s and early 1990s has come a decline in exports of each country. Clearly the most notable case is the former Soviet Union, where arms exports have fallen dramatically since 1988. The impact of the Gulf War and the arms embargo against Iraq has had some effect, especially on French arms exports in 1991.

Arms imports in billions of 1993 constant USD by major developing country regions from 1979 to 1993 are shown in Figure 2.5. Absolute imports of arms by these regions fell from 1987 through to 1993. These same data are presented again in Figure 2.6, this time scaled by regional GNP to give an indication of re-

Figure 2.5 Arms Imports, by Country (Billion Constant 1993 USD)



Source: US ACDA (various years).

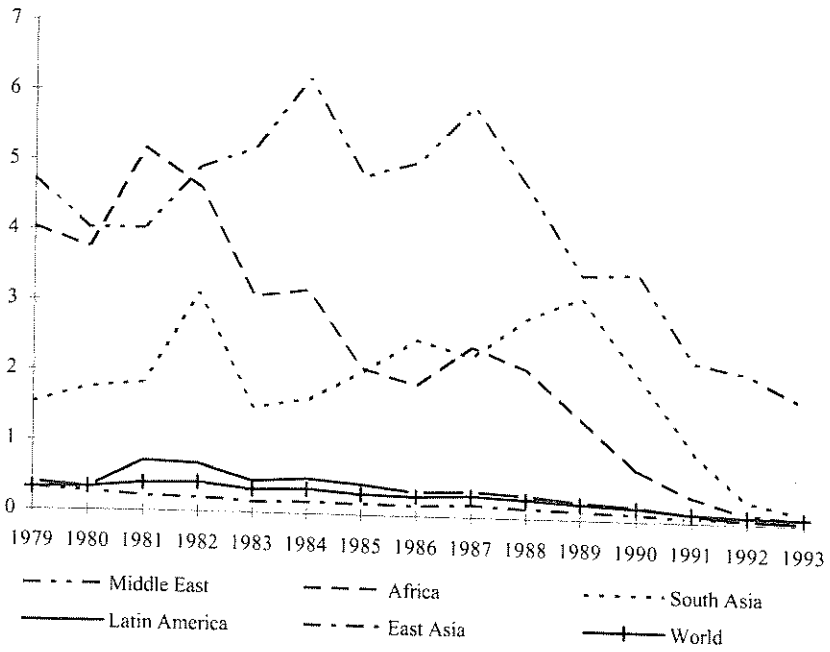
sources devoted to arms imports. The declining trend in African and Middle Eastern arms imports is clear here, as are the rise in imports in South Asia up to 1989 and the subsequent decline.

According to data from SIPRI (1992) on the trade in major arms, the import picture for 1990 and 1991 is dominated by the UN arms embargo against Iraq. On the other hand, imports by Israel in 1991 increased significantly, which tends to offset the decline in Middle East imports. SIPRI data for South Asia show a decline in imports which is dominated by reductions in military imports by India and Pakistan in 1990 and 1991 relative to 1989. Imports by East Asia also fall over 1990 and 1991, although within this overall trend imports of major weapons by Thailand more than doubled in 1991 relative to 1989.

3. Cutting OECD Military Expenditure

To capture the many channels through which reductions in military expenditure will impact on the global economy requires a global model that includes the key empirical linkages between major countries and regions in the world. Although a plethora of possible problems can occur when using a specific model, it is inevitable that a question such as cuts in budget deficits and changes in trading pat-

Figure 2.6 Arms Imports in Developing Regions (% of GNP)



Source: US ACDA (various years).

terns will need a broader yet consistent framework that simple rules of thumb are incapable of providing. For this purpose I choose a version of the McKibbin-Sachs-Global Model that has separate country and regional models of the United States, Japan, Germany, United Kingdom, France, Italy, Canada, the Rest of the European Monetary System (hereafter REMS), the Rest of the OECD (hereafter ROECD), non-oil developing countries (hereafter LDCs), oil-exporting developing countries (hereafter OPEC), and the economies of Eastern Europe and the former Soviet Union (EFSU). The goal of using such a framework is to use the insights from the model to highlight the major issues but also to provide measures of the likely magnitude of possible scenarios.

3.1 The MSG2 Model

For details the reader should refer to the cited references to the MSG2 model in this chapter. McKibbin & Sachs (1991) sets out the theoretical and empirical basis of the model as well as evaluating the tracking ability of the model over the 1980s. The model without the disaggregation of Europe has been used for two related

studies of defense and arms trade policy by the US Congressional Budget Office (CBO, 1992a). A summary of the key features of the model is presented in Figure 3.1 and the country coverage is summarized in Figure 3.2.

Several important features make the MSG2 model useful for considering the consequences of changes in future paths of military expenditures and arms trade. First, the flows of goods and capital between each country and region in the model are explicitly treated in the model. Secondly, announcements of future policies have important effects through forward-looking behavior by firms, households, and financial markets. Other important features include a well-defined long run of the world economy based on a Solow-Swan neoclassical growth model (Solow, 1970; Swan, 1956), with exogenous underlying technical progress and population growth in different economies. In the short run, however, the dynamics of the global economy towards this growth path are determined by a mix of Keynesian-style rigidities in the goods and labor markets and optimal decisions by households and firms, conditional on expected future paths of the global economy. In addition, important stock-flow relations are imposed within the model: investment leads to physical capital accumulation; fiscal deficits lead to accumulation of government debt; and current-account deficits lead to the accumulation of foreign claims against domestic production. The evolution of these stocks of assets are important for the economy because asset prices are forward-looking and are consistent with the imposition of intertemporal budget constraints; all outstanding stocks of assets are ultimately serviced. In addition to providing a well-defined

Figure 3.1 Main Features of the MSG2 Model

- both the demand and supply side of the major economies are explicitly modelled;
- demand equations are based on a combination of intertemporal optimizing behavior and liquidity constrained behavior;
- the supply side takes explicit account of imported intermediate goods especially the role of imported capital goods in investment in economies;
- major flows such as physical investment, fiscal deficits and current account imbalances cumulate into stocks of capital, government debt and net external debt which in turn change the composition and level of national wealth over time.
- Wealth adjustment determines stock equilibrium in the long run but also feeds back into short-run economic conditions through forward-looking share markets, bond markets and foreign exchange markets.
- Asset markets are linked globally through the high international mobility of capital.

Figure 3.2 Regio

Regions

- USA
- Japan
- Germany
- United Kingdc
- France
- Italy
- Rest of the EM
- Canada
- Rest of the OE
- Oil-exporting
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Figure 3.2 Regional Coverage of the MSG2 Model Used in this Chapter

Regions

- USA
- Japan
- Germany
- United Kingdom
- France
- Italy
- Rest of the EMS (REMS)
- Canada
- Rest of the OECD (ROECD)
- Oil-exporting countries (OPEC)
- Non-oil developing countries (LDCs)
- Eastern European economies and the former Soviet Union (EFSU)

Sectors

- One good in each country/region

theoretical framework, this model does reasonably well in accounting for the global experience of the 1980s (McKibbin & Sachs, 1991). It has also been useful in projecting the problems facing Germany in the process of reunification (McKibbin, 1992).

3.2 A Reduction in OECD Military Expenditure

Now consider a scenario where future cuts in military expenditure are announced in 1993 and are completely credible to all participants in the financial markets and the real economy of each country. The precise policy is a further reduction in government military expenditure in most OECD countries, phased in during 1994 to 1997. We start with a baseline consistent with CBO (1992a) projections out to 1993, which assumes military spending in the US gradually falls from 5.2% of GDP in 1992 to 4.8% of GDP in 1993. The baseline assumes that, after 1993, military spending remains at 4.8% of GDP forever. Similarly in other OECD countries we assume that from 1992 baseline military expenditure remains at its 1991 share of GDP forever. We then consider the implications of a fall in US defense spending beginning in 1994. The new path for defense expenditure is 4.4% of GDP in 1994, 4.0% of GDP in 1995, 3.6% of GDP in 1996, and 3.2% of GDP

in 1997 and thereafter. The change in spending relative to baseline is therefore 0.4% of GDP in 1994, 0.8% of GDP in 1995, 1.2% of GDP in 1996, and 1.6% of GDP from 1997 onwards. In other OECD countries we assume that from 1992, all OECD countries with military expenditure above 2% of GDP in the baseline smoothly cut this back to be at 2% of GDP by 1997. Countries such as Japan that are well below 2% of GDP do not alter their military outlays relative to baseline. These policies are announced in 1993 and are completely credible. The timing is very important because of the forward-looking expectations in the model. Some cuts in military expenditure in 1993 are already built into the baseline. Hence the new information is on additional cuts relative to where military spending would otherwise have been. Starting the simulations in 1993 is important because that was about the time that the possibilities of defense cutbacks were raised, as well as providing several years of actual observations as a partial indication of the plausibility of the results.

The results for several key variables are presented in Figures 3.3 through 3.7, which show the deviation from baseline of variables as a result of the policy changes. These variables are scaled so that real GDP is measured as a percentage deviation from base; the trade balance is measured as percent of baseline GDP deviation from base (e.g. 0.5% is 0.5% of US GDP in the year indicated); the interest rate on 10-year bonds is measured as percentage point deviation (e.g. –1 on the vertical axis is a fall of 1% or 100 basis points); and the nominal effective exchange rate is percentage deviation from base where a rise of 1% is an appreciation of that country's exchange rate relative to an export-weighted basket of other currencies. Results are presented for a subgroup of countries in the model: the United States, Japan, Germany, the United Kingdom, and France.

Before we examine the results, it is important to be clear about the policy regimes in place in each country. We assume that all of the funds saved by reducing military outlays are used to reduce fiscal deficits in the countries that undertake the cuts. Obviously, alternative assumptions such as tax cuts or offsetting spending increases would lead to different results. However, in view of the debates currently underway in most OECD economies, especially the United States and the EU, deficit cuts are a likely outcome. Given the space constraints and the plausibility of this assumption we do not explore other assumptions in this chapter. The implications of alternative fiscal assumptions using this model are explored in McKibbin & Bagnoli (1993). In brief, if the revenue is used for alternative spending, then the short-run losses will be reduced, as will the long-run gains. A similar result would also apply for tax cuts, except where the taxes are cuts in distortionary taxes – in which case the long-run gains could be increased.

Analytical exercises studying a change in fiscal policy commonly assume for monetary policy either that the stock of money is fixed or the nominal interest rate is fixed. As is well known, the simulation results for a fiscal shock can be very different under alternative assumptions about monetary policy. For members of

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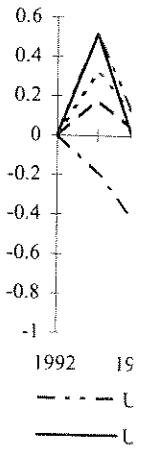

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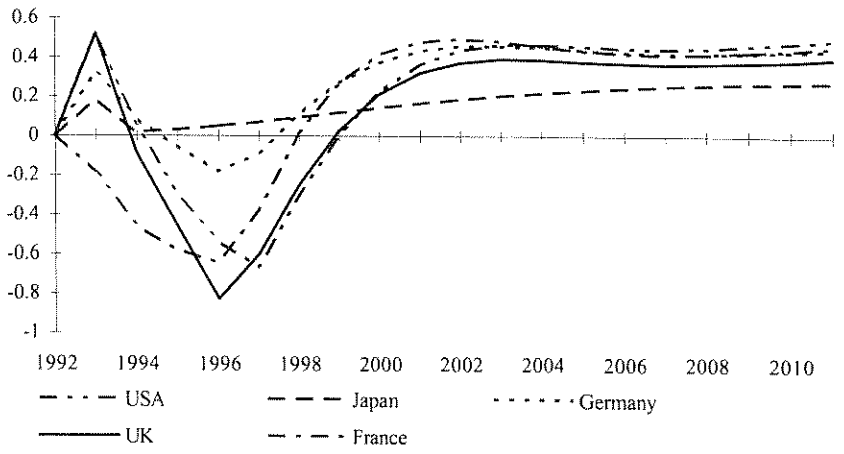
Fig 3.3 Real GDP in Selected Countries. Simulated Cut in Military Expenditure (% Deviation from Baseline)



the European Monetary System (EMS) we assume that monetary policy in each country is tied to targeting the exchange rate. In the results presented here we assume that France, Italy, and the REMS countries maintain parities within the EMS. The assumptions for Japan, Germany, the United Kingdom, and the USA are more problematic. To illustrate the importance of assumptions about monetary policy, the first set of results assume that the money supply is held at its baseline path in each of these three countries. The EMS members adjust monetary policies within the constraints of the EMS.

We present only results for real GDP in this case. These results are then followed by a complete set of results for the case in which monetary policy is adjusted in response to the shock. This second set of results is more plausible and will be the focus of our attention. However, it is useful to start with the case presented in Figure 3.1, to separate the effects of the shock from the effects of the change in monetary policy.

Referring to Figure 3.3, we find an interesting result. In 1993, when the reductions in defense expenditure over the period 1994 to 1997 are announced, the expected cut in fiscal expenditure actually raises GDP in each region reported (and indeed in all regions in the model) except France. The essential reason for the stimulatory effects of the policy change is that no spending cuts are made in the USA in 1993 relative to those already expected in 1993, and the cuts in Europe are small relative to what had been expected for 1993 and relative to the new future cuts announced in 1993. In this special set of circumstances, current demand by government in 1993 is not affected, but long-term real interest rates

fall by around 200 basis points on impact because of the future increase in government saving credibly expected for 1994 to 1997. For the USA, this cut in future military expenditure, which is assumed to also be a cut in future fiscal deficits, is 1.6% of GDP relative to what would have occurred without the incremental defense cuts. For other countries the future reduction in military expenditure and fiscal deficit lies between zero and 2% of GDP. In the United States, this decline in interest rates is sufficient to stimulate private investment directly and other components of demand through multiplier effects, so that GDP rises in 1993 by over 0.4%. In the case of France, monetary policy is contractionary in order to keep the franc pegged to the Deutsche Mark. This result directly reflects the role of expectations in the model used in this chapter. In more conventional models which do not allow for expectations of future events, this particular mechanism would be absent and there would be effects only when the actual cuts in spending take place.

The short-term stimulus due to anticipation of future deficit cuts is quickly reversed when the real spending cuts are implemented in 1994 and in subsequent years. GDP then falls through to 1997 by 0.8% in the USA and to lesser and greater extent in other European countries. Japan on the other hand escapes the contraction in GDP, because there is no cut in government spending in Japan. Also with global capital mobility, the fall in fiscal deficits in the USA and Europe causes capital to flow into Japan, reducing Japanese long-term interest rates and stimulating private investment in Japan. Demand for Japanese exports falls because of slowing foreign economies and because of a capital-inflow induced strengthening of the yen.

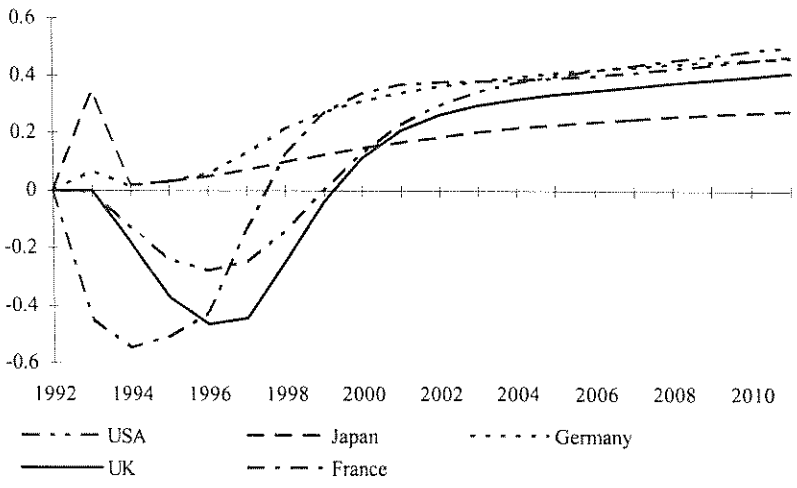
Note that France suffers a larger fall in GDP than Germany, partly because the expenditure cuts are larger in the former. But the franc and the pound also are under incipient pressure to depreciate relative to the Deutsche Mark. Because of EMS arrangements, France tightens monetary policy to strengthen the franc, preventing the depreciation that would otherwise have occurred and that is allowed to occur for the United Kingdom. This monetary tightening further exacerbates the output loss.

Another important feature of Figure 3.3 is the longer-run consequence of the shock. The level of output is permanently higher by around 0.5% in all countries shown. This should not be confused with a rise in the growth rate, but represents a higher level of output (at each point in time) relative to the baseline level. The rise in government saving resulting from the lower path of military expenditure leads to a permanent fall in real interest rates relative to baseline. This lowers the marginal product of capital in all countries with open capital markets. Given full employment of labor, in the long run this implies a rise in the capital-output ratio in all countries. As capital accumulates, output rises until the new capital-output ratio is reached. Investment is higher in this new steady state to support the higher capital stock, but the rate of growth of each economy returns to the rate given by

population plus exogenous productivity growth rates. This result regarding output and the capital stock in the long run has nothing to do with any assumption that might be made about how productive defense spending is relative to other government spending. It is purely the result of higher government saving and would hold whether it was a cut in defense spending or a cut in some other government spending that leads to a rise in government saving.

As mentioned, the monetary policy assumption in Figure 3.3 is that the USA, Japan, Germany, and the United Kingdom maintain a fixed stock of money. This is not the most likely policy response in these regions, and so the remaining figures present the same defense cutbacks as in Figure 3.3 but with alternative assumptions about monetary policy in these four countries. Japan and Germany are assumed to target inflation at the baseline level whereas the USA and the United Kingdom adjust monetary policy to target nominal income growth in their respective economies.[1]

Figure 3.4 Real GDP in Selected Countries. Simulated Cut in Military Expenditure – with Policy Response (% Deviation from Baseline)



Comparing Figures 3.3 and 3.4, we see clearly that the USA and the United Kingdom are able to smooth fluctuations in real GDP by changing monetary policies. The initial stimulus occurring in 1993 is postponed into future periods and the later recovery can be brought forward. The peak loss to US GDP is more

[1] An evaluation of alternative policy rules under a range of shocks can be found in Bryant et al. (1993). Nominal income targeting works well as an intermediate target in the range of multi-country models used in that study which included the MSG model.

than 0.8% in 1998 without a response of monetary policy (Figure 3.3), whereas the loss in GDP is more than halved to 0.35% in the same year with an adjustment of monetary policy (Figure 3.4). In Germany the output loss can be completely offset with an adjustment of monetary policy. Fortunately for France, the German response is a relaxation of monetary policy, which also allows France to relax monetary policy and partially stimulate output. Unfortunately, the restrictions imposed by the EMS prevent these countries from relaxing monetary policy by as much as required to further offset the loss in GDP. The fact that the shock is an asymmetric real shock, in that it is much larger in France and the United Kingdom than in Germany, illustrates one of the drawbacks of a regime of fixed nominal exchange rates when wages are sticky, as they are in these countries. As would be expected, the long-run results are independent of the assumptions about national monetary policies. The explicit assumption in each set of results is that the target of policy is the baseline path. However, given the slow recovery in the world economy in 1992, there may not be any reason to smooth out the initial rise in output that would accompany a credible defense cutback with national money stocks unchanged.

Figure 3.5 Employment in Selected Countries. Simulated Cut in Military Expenditure – with Policy Response (% Deviation from Baseline)

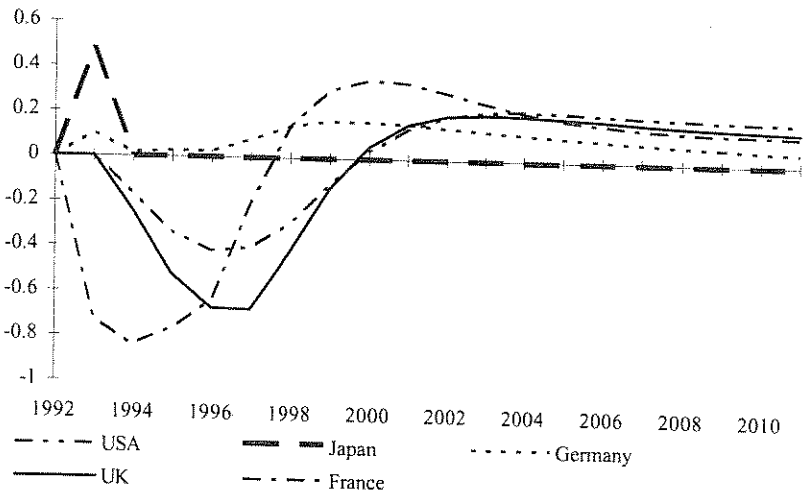


Figure 3.5 presents results for employment for selected countries in the case where monetary policy is assumed to adjust to hit specified targets. The results for employment follow closely the results for real GDP, since a key determinant of

employment in this model is the derived demand for labor, which is directly related to aggregate demand. There are, however, some interesting differences. The major difference is caused by the adjustment of real wages in each economy. In Japan, for example, it is assumed that employment is importantly determined by the annual wage cycle in which real wages are assumed to be set to clear the labor market in expected terms. Thus after the shock is revealed in Year One, by Year Two real wages in Japan have adjusted to clear the labor market. This is not true in the other economies modeled. In the USA, for example, there is no change in employment initially, and over time employment falls as aggregate demand contracts. In the phases when output is falling, real wages are also falling, which acts to offset the negative effects on employment. Once the cuts in military outlays are completed, the demand for labor rises. As employment rises, real wages also rise. In the long run in all economies, employment returns to full employment. By the year 2000, employment in the USA has returned to baseline and after that it rises above baseline. Eventually it will return to the same level as baseline; however, this does not occur in the horizon of the figure, given the sticky wage/price dynamics in the model. It is important to note that real GDP was permanently higher as a result of the reallocation of resources towards the private economy. Although this does not show up as permanently higher employment, it does result in a permanently higher real wage (given the assumption of long-run full employment). A similar adjustment process occurs in each of the European economies.

Figure 3.6 Trade Balances of Selected Countries. Simulated Cut in Military Expenditures with Policy Response (% of GDP Deviation from Baseline)

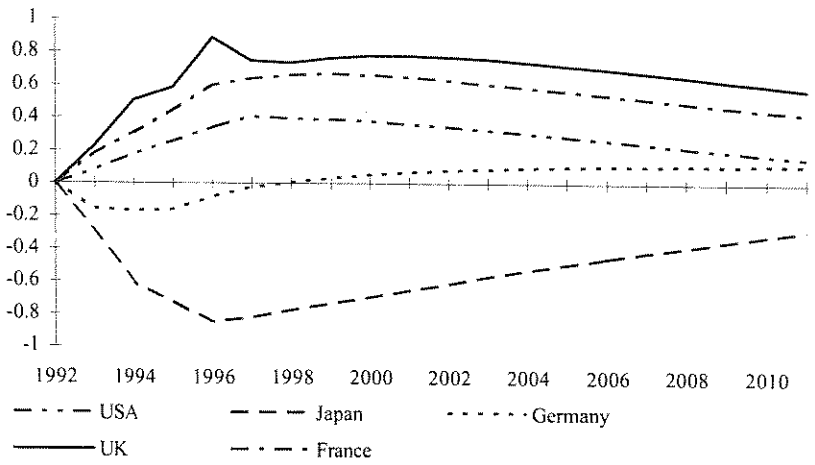
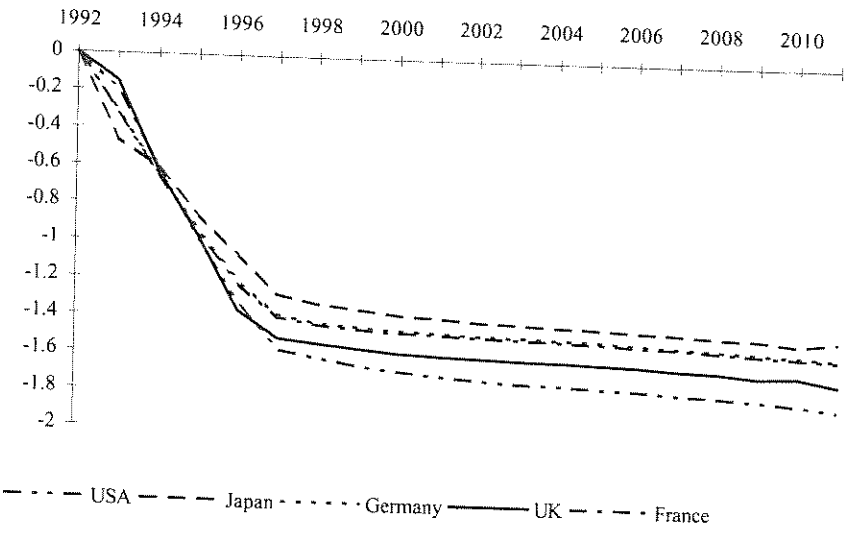


Figure 3.6 presents results for trade balances as a result of the defense cutbacks with the same adjustments of monetary policies assumed for Figure 3.4[1]. Over time, the trade balances in the countries that cut government spending improve. The Japanese trade balance worsens, reflecting the flow of capital into Japan which appreciates the yen, as shown in Figure 3.8. The global fall in nominal long-term interest rates is shown in Figure 3.7. This fall in nominal interest rates is also a fall in real interest rates, because the rate of inflation eventually returns to baseline by assumption. In the group of European countries, interest rates move in unison. The reason why interest rates in other countries do not move exactly equally is because exchange rates are changing in the simulation, as shown in Figure 3.8. The expected return from holding assets in different currencies is equalized by assumptions in this model. In the USA, the fall in interest rates is greater than in other countries and, as seen in Figure 3.8, the USD after 1998 gradually appreciates (following the initial depreciation), consistent with the movement in interest rates. The dollar weakens as a result of the policy, the yen strengthens and in effective terms the European currencies remain almost unchanged.

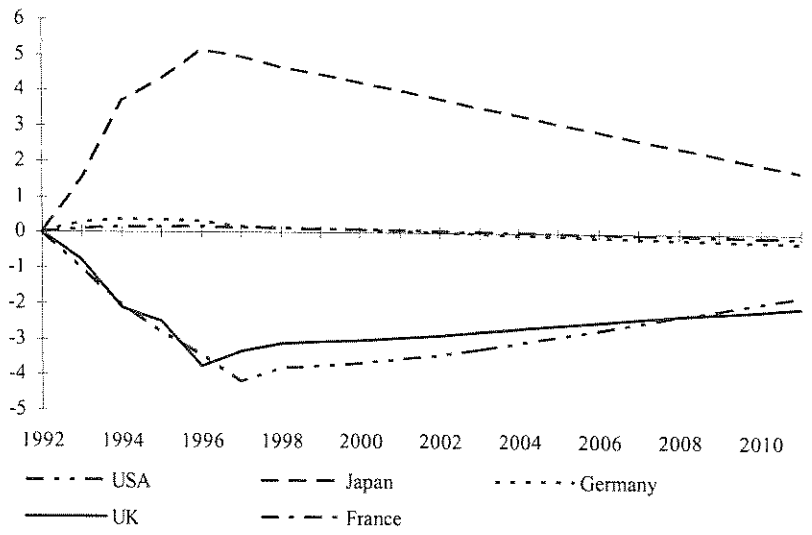
Figure 3.7 Ten-Year Bond Rates of Selected Countries). Simulated Cut in Military Expenditure with Policy Response (Percentage Point Deviation from Baseline)



[1] These results are very similar to those without a monetary response because monetary policy has very little effects on the trade balance in this model even though it has significant effects on real output. See McKibbin & Sachs (1991) for a full discussion of this issue.

These results show that in the short run a credible cut in defense expenditure can actually be expansionary, as firms begin to move resources into the private sector in response to falls in long-term real and nominal interest rates resulting from a credible future rise in government saving. However, there is no medium-term free lunch. As actual government spending is cut, there is a fall in aggregate demand in the countries cutting their defense budgets. More than half of this can be offset by suitable adjustments of monetary policies. The result for the USA is a reduction of GDP by up to 0.5% below baseline by 1997. In Germany the output loss is completely offset, although at the cost of a smaller offset in the rest of Europe, where for example French GDP is 0.5% below baseline by 1995. In addition to the output consequences for these countries, there is a generalized fall in long-term real interest rates which is beneficial to countries that do not cut their defense budgets (such as Canada and Japan) as well as to indebted developing countries. The cuts in military expenditures and resulting changes in savings and investment balances act to narrow the Japanese current account and trade surpluses. In practice this would be helpful for reducing future trade tensions resulting from continued high Japanese surpluses.

Figure 3.8 Nominal Effective Exchange Rates. Simulated Cut in Military Expenditures with Policy Response (% Percent Deviation from Baseline)



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4. Reducing Arms Exports to Developing Countries

Since the end of the Cold War, the focus of global security has shifted dramatically from traditional Cold War problems and solutions as presented by e.g. Myrdal (1976). As already mentioned, a major problem with cutting military outlays in the industrial economies is the likely expansion in arms shipments to developing countries. This outcome would worsen the outlook for regional conflicts in future years. Various strategies have been proposed to prevent this from continuing. One approach is to focus on the supply of these weapons and impose a direct embargo on arms shipments to developing countries. The second approach is to focus on the demand for these weapons by developing countries and directly impose constraints on this demand by tying financial assistance to the extent of military spending in a given country. We first focus on the quantitative impacts of the first, before turning to the implications of the second.

4.1 Direct Arms Embargo

In McKibbin & Thurman (1993) we considered the quantitative effects on the world economy of a reduction in arms exports from OECD and EFSU countries to developing countries of USD 26 billion in 1992 dollars commencing in 1992[1]. We then made two assumptions about the foreign assistance which accompanies this change in exports. The first assumption was that transfers from the industrialized countries to the developing regions were cut by 50% of the cut in military exports. The second assumption was that transfers from each country to the developing countries remained unaffected by the cut in arms exports and that this aid was channeled into non-military areas. These assumptions about financial assistance did make a quantitative difference to the results, but some general results also emerged.

First, we found that the arms embargo led to a small increase in GDP in most industrial countries. This result was due to the assumed policy responses in industrial economies which more than offset the initial decline in exports. For example, in the USA, the cut in arms exports tended to reduce nominal GDP, which led to a relaxation of monetary policy in the USA more than offsetting the negative impact of the arms embargo. For Germany, the fall in demand reduced domestic price inflation, which led to a relaxation of monetary policy in Germany. For France the results of GDP rising are perhaps more surprising, given the relative importance of arms exports to French GDP. Again the constraints on policy imposed by participation in the EMS play a crucial role. The relaxation of monetary policy in Germany led to a tendency for a depreciation of the Deutsche Mark relative to the

[1] See CBO (1992c, Table 5) which has an estimate by the Congressional Research Service of total exports of arms to the Third World in 1991 of USD 25.4 billion (1992 prices).

Franc, leading to a relaxation of French monetary policy[1]. This relaxation in monetary policy and the resulting stimulus to aggregate demand are more than enough to absorb the unemployed resources from the French arms industry. Thus, the short-run effects on the GDP of industrial countries were generally minor. We also found that the long-run response of GDP tended to be positive in all countries. The explanation for this result can be traced to our assumption that the arms imported by developing countries are consumed by these countries. When exports of military arms to developing countries are halted, the factors of production in the OECD are reallocated over time towards producing non-military goods. These are then used partly for consumption and partly for investment purposes within the OECD. The additional investment raises the capital stock and thereby the level of output over time. In the long run, the result is a higher level of output relative to the baseline. This analysis ignored any positive effects of military spending in developing countries; these are discussed in Bayoumi et al. (1995).

In summary, the direct macroeconomic implications of limiting arms exports are negligible for the OECD economies. However, the above analysis assumes a given level of security. There could potentially be large economic consequences from changes in security that are not captured here. This will be discussed further below.

4.2 Conditionality on Development Assistance

Another approach to reducing the flow of arms to developing countries is to cut the demand for these arms, by linking development assistance to military budgets. The momentum for this approach increased with the announcement of the Japanese Official Development Assistance Charter of June 1992. This charter stated that, in addition to following the principles of the United Nations Charter, Japan's Official Development Assistance (ODA) would also take into account four additional principles, including military expenditures in the recipient countries. This was a significant shift in international aid policy, which had previously abided by the implicit rule that development assistance was to be independent of domestic defense issues. At the same time there has been increased pressure on unilateral and multilateral aid agencies, such as the World Bank, to begin tying ODA to the extent of militarization of recipient countries.

A vocal advocate of this approach is Robert McNamara (1991, 1995). He argues persuasively that international institutions should be adapted to meeting the needs of the next century and maintains that the basis for lasting peace is to ensure collective security. This can be done by creating a mechanism for resolving regional conflicts, setting up a basis for guaranteeing security for each nation-state

[1] Without any change in German monetary policy there is a tendency for the real value of the Franc to decline relative to the Deutsche Mark. This occurs because of a shift in demand away from French goods which is larger than the shift in demand away from German goods.

as well as minorities within nation-states, by ending military support to conflicts in developing regions, and by increasing the flow of development assistance so as to raise the living standards within these regions. To facilitate the move to greater global security, McNamara argues for greater leadership in negotiating the complete removal of nuclear weapons, tight limits on the proliferation of other weapons of mass destruction, substantial reductions in military outlays, and substantial reductions in arms transfers between the developed and the developing world. In relation to the last issue, McNamara highlights the social cost in many developing countries of maintaining large military forces at the expense of other social programs. He strongly advocates that the multilateral institutions link their financial assistance to levels of military expenditures in recipient countries. It is this last argument which is problematic, since it does not address the underlying cause of excessive military budgets and potentially imposes a significant cost on international agencies that would be required to implement such a system. One key factor is the issue of perceived threat: this differs substantially between countries and would be difficult to evaluate when considering tying foreign assistance to military spending.

Even if one were to tie military aid to development assistance there remains the problem of quantifying the degree of 'excessive' military spending. One possibility is to extend the initial attempt at constructing a database by Armington & Jalali (1995), who present a wide range of data on development assistance and military spending. Assembling and evaluating these data is crucial step to constructing a militarization index that could be used for evaluating excessive military spending. Armington & Jalali show that there is a wide divergence between the resources that countries devote to military budgets. Sen (1995) has even proposed how a militarization index could be constructed. However, condensing the many complex issues related to security into a single measure is problematic. Moving down the road of assessing 'excessive' military spending is a hazardous undertaking, and it is still not clear whether, even if all the technical and political hurdles could be overcome, the security problem facing individual countries would be resolved. In the following, an alternative approach which relies less on direct controls and more on incentives is presented.

4.3 Economic Incentives and Regional Security

Direct controls on exporters or importers of military equipment may be ineffective. An even more fundamental problem is that direct controls really do not focus on the underlying problems that sustain a market in military trade. Various factors can lead to large military spending, such as entrenched special interests within a country, a perceived threat either by internal forces or by external forces, or an aggressive stance against another country. Different approaches are required to counter each of these.

Entrenched interests that maintain military budgets even after perceived threats have diminished can be dealt with through increased transparency in military budgets, as proposed by Ball (1995), Deger (1995), and McNamara (1995). This would help in the process of making governments accountable for their budgetary decisions. In addition to the work of SIPRI, there is more that can be done by the IMF and World Bank. These agencies could play a useful role in highlighting the extent of military expenditure as part of their regular expenditure-review budget process. Greater transparency is a key to constraining government military spending.

The other issues of perceived external threat or increased spending to enable an aggressive stance against other countries can be directly addressed through the following approach. I propose that a tax system be set up with the goal of minimizing the benefits of expanding military spending while maximizing the costs of doing so. This tax could be a tax or a levy on each member-country of the United Nations of 10% for each dollar of military expenditure within that country and for each dollar of arms exported from that country (see Hewitt, 1992, p. 109; Levine & Smith, 1995). The tax would be levied on countries directly so the cost or technicalities of collection would be minimal. Where arms exports are carried out by private corporations, it would then be up to the governments within those countries pay the tax and then to collect the tax from these corporations.

There are a number of obvious problems. The first is how to measure the value of arms exports, especially when it may be barter trade rather than a financial transaction. Although there are problems with the quality of data from organizations such as SIPRI, they could still be an input into the evaluation. The new UN Registry of Arms Trade could also be used as data source. Furthermore, part of the revenue raised from the tax could be used to finance improved monitoring and data-collection procedures.

A main feature of this tax is that it would raise the costs of military expenditures as well as the costs of exporting arms. On the other hand, it only partly addresses the problem of regional security. This can be tackled by using some of the substantial revenue raised by the tax to improve monitoring and data collection through regional security groups. The remainder of the revenue could be placed in a fund controlled by (for example) the UN Security Council to be used to fund multinational military interventions in support of all countries that have contributed to the fund. Having a credible financial backing to mobilize the international community to protect individual countries against external threat should increase the credibility of international action. The scale of the revenue gain would be quite impressive. At the 10% suggested tax rate, and assuming total arms exports of around USD 40 billion and military spending of around USD 1,000 billion, such a tax would raise revenue of between USD 80 and USD 100 billion per year.

The advantage of the whole package is that global and regional security would be enhanced. Countries would have less incentive to mount military actions

against others, and would also perceive less of an external threat. With the prospect of greater security there would be less incentive to maintain large military budgets. The result would be greater security and less resources channeled into military spending. With financial backing for regional security arrangements, for monitoring, and for mobilizing international forces when needed, this proposal greatly enhances the prospect for the type of cooperative security outlined by Carter, Perry & Steinbruner (1992) and thoroughly explored in Nolan (1994): security, not in terms of collective security where threat of military action is reduced by maintaining large countervailing forces, but security achieved through cooperation. Moving in this direction would free resources, within developing countries in particular, which can be used for crucially needed development purposes, without reducing the external security of those countries. This would also act to reduce internal threat due to economic malaise.

Moreover, this proposal would leave international aid agencies to focus on their principle role of guiding the development process. No resources would be required in these agencies to monitor military spending. Regional security agencies are far more suited to such a monitoring role.

Enforcement is the main problem of this proposal. Why would countries contribute to this fund when many countries are already in arrears with their contribution to the United Nations? The answer lies in considering the alternatives. Small countries that do not participate cannot expect the international community to pay for their protection. Large countries are already paying the cost of global insecurity. For example, the Gulf War cost the participating countries over USD 100 billion dollars. Countries can either invest in security or pay whenever regional problems arise. One thing is clear: unless arms shipments to the developing world are reduced, regional conflicts will dominate over the next several decades. With nuclear proliferation, this is an unsettling proposition indeed. By setting up credible rules and the appropriate financial and security incentives, perhaps we can be more optimistic about the shape of the New World Order.

5. Paying for Security

This chapter has presented an overview of recent trends in global military expenditure and arms trade, and then projected the possible consequences of reductions in military expenditures by the OECD economies.

Several important points emerge from the analysis: The first is that a credible reduction in future government defense expenditure in OECD countries need not have an immediately depressing effect on the world economy. However, as cuts are implemented, there is over time a negative impact on GDP that cannot be completely offset by adjustments to monetary policy. The reallocation of resources from defense-related industries to other industries will inevitably involve short-

run unemployment of these resources. In the long run, however, using the revenue gain from the defense cutbacks to reduce fiscal deficits permanently raises real GDP through higher global saving. In contrast to most popular debate on the issue of defense cutbacks – which argues that there would be short-run losses followed by long-run gains – this chapter has shown that it is possible, by credibly announcing substantial cuts in advance, for there to be a short-run gain, medium-term loss, and then long-run gain from cutting defense expenditure. However, to realize these gains it is crucial that the savings from smaller defense outlays be part of a credible deficit-reduction program.

The second point is that it is important to consider the security implications of cuts in defense budgets as well as the macroeconomic consequences. In particular, if a byproduct of the defense cutbacks is increasing exports of military equipment to developing countries, then there could be significant regional security problems in later years. Whether such arms shipments result from a concerted effort by governments to buffer the losses to their domestic defense industries by seeking 'export markets', or merely through the market mechanism of a fall in global demand reducing the price of weapons for developing countries, the increase in military equipment in developing countries must be dealt with before it becomes a major problem. This chapter considers a number of alternatives, such as an outright arms embargo and direct conditionality of development assistance based on military budgets. I argue that an alternative approach should be considered which directly focuses on reducing the incentive to export and import arms, but also enhances regional security arrangements. Developing a regime which combines economic incentives to reduce trade in arms, directly through taxes and using the revenue to finance approaches to increasing regional security, therefore addresses the cause of the accumulation of weapons rather than merely treating the symptom.

Despite the current economic problems in the world economy, we need a concerted effort to reduce the resources now channeled into military budgets. In addition, there must be an overall awareness of the security implications of this and the danger of arms accumulation in developing countries. A new set of rules for the international community is needed to replace the ad hoc rules of the Cold War. This system will have to deal directly with the economic and political incentives facing countries, especially during the current period of transition. The international community must act decisively to create a system which can sustain global and regional security through incentives, monitoring, and a credible security umbrella maintained by the international community through regional security arrangements. This chapter suggests the outline for such an approach and proposes a way to pay for it.