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**SUBSIDIES TO SERVICES SECTORS: A NEO-PROTECTIONIST DISTORTION
OR A USEFUL DEVELOPMENT TOOL?¹**

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INTRODUCTION

The purpose of this paper is twofold. The first objective is analytical and the second is policy-oriented. The first section of the paper illustrates a few basic concepts on subsidies; the second assesses the main costs and benefits and the institutional feasibility of implementing subsidy programmes from a political economy viewpoint, focusing chiefly on services sectors; the third examines the evolution and outcomes of the controversies on subsidies in the GATT/WTO system of multilateral trade rules; and the fourth presents a synthetic quantitative picture of the pervasiveness and magnitude of subsidy policies worldwide, stressing their unequal weight and impact in developed and developing countries respectively. The fifth section provides some elements contributing to the elaboration of an understanding of the risks and opportunities that subsidy policies present for developing countries, and to the development of a common negotiating stance in forthcoming WTO negotiations on subsidies. These sections are described in more detail below.

Concepts and definitions

This section illustrates the basic concept of subsidy and provides a few canonic definitions from the viewpoint of mainstream economic theory, referring to issues such as: the main justifications put forward to implement subsidy policies; the relationship between subsidies, Pareto efficiency and the inter-temporal allocation of resources; subsidies as policy tools to overcome market failures caused by imperfect and asymmetric information; subsidies as social, distributional and environmental policy tools; and the trade implications of subsidies, or subsidies as trade policy tools.

The political economy of subsidizing services

This section considers the advantages and disadvantages of subsidy programmes. It pays particular attention to the possible virtuous role of subsidies in development strategies. Subsection 2.1 discusses why many subsidy programmes, as well as other interventionist policies, are implemented and why they tend to show remarkable persistence over time, in spite of the fact that many observers routinely argue against their inefficient, perverse and ultimately irrational consequences. Subsection 2.2 explores the likelihood of cooperative and conflictive outcomes in international trade policy rivalries (an issue also investigated in Box 2.2). Subsection 2.3 focuses on the role of services as strategic trade policy tools, with particular attention paid to education and R&D services. Boxes 2.3 and 2.4 refer to the impact of subsidies on international trade in two other important service sectors, namely construction and health, taking stock of the debate that took place in two UNCTAD expert meetings.

Subsidies in developed and developing countries: a review of quantitative evidence

This section discusses the complexity of the task of evaluating global subsidies worldwide in a comprehensive and exhaustive fashion, and presents some synthetic figures indicating the order of magnitude of total subsidy programmes worldwide. Subsections 3.3 to 3.5 report estimates of expenditures on subsidies in the areas of water, energy and transport services in developed and developing countries. Subsection 3.6 focuses on subsidies in the fields of education and R&D.

Services in multilateral trade negotiations

This section briefly recounts the history of the subsidy issue in the framework of multilateral negotiations, describes the treatment of subsidies in GATT and GATS and the main features

of the Agreement on Subsidies and Countervailing Measures, and reviews some documents and analytical contributions put forward in the Working Party on GATS Rules. The relative resilience of subsidies and other indirect trade policy instruments, in contrast to the long-run decline of traditional protectionist tools, is also highlighted. In the final part of the section, three boxes focus on specific aspects of themes examined in the main text. Box 4.1 proposes an interpretation of the law of subsidies centred on the principle of attenuating the entitlement of affected parts as a precautionary device aimed at avoiding major disruptions in international trade flows. Box 4.2 describes the issue of the definition of R&D subsidies in multilateral trade discipline and on the evolution of the US negotiating position. Box 4.3 stresses the particularly wide policy space still available to Governments willing to implement subsidy policies to support audiovisual services.

Subsidies in the area of services in developing countries: a necessary policy tool for developing countries in an asymmetric world

This short concluding section summarizes the finding of the previous four in order to assess the role and feasibility of subsidies as a development strategy tool in developing countries. The importance of proper targeting, planning, focusing and timing of subsidy programs is underlined, as is the weight of the objective financial constraints that inevitably put less developed countries at a relative disadvantage in the event of the eruption of a subsidy-based trade war. The main conclusion is twofold. On the one hand, developing countries should strive to achieve a widely shared and possibly common position in WTO negotiations on subsidies, trying to pose the effective recognition of special and differential treatment in the domain of subsidies as a necessary condition for pursuing further the agenda on progressive liberalization. On the other hand, the international community at large, and developed countries in particular, should recognize the acute asymmetry of conditions among countries at very different levels of development. This asymmetry makes it imperative not only to reconfirm the spirit of existing WTO rules on subsidies, but also to substantiate them to a much greater extent.

1. CONCEPTS AND DEFINITIONS

1.1. Justifications for subsidies under a simplified closed economy assumption

Subsidies, like taxes, are among the most common policy tools used by Governments to get the economy to pursue a variety of economic, social or environmental objectives. There can be many different justifications for subsidies, depending on the specific policy goals they are meant to pursue and on the scenario for their implementation. In this respect, even if it is only a working approximation (as no fully autarkic economy exists in the present, globalizing world), it is useful to refer initially to the traditional closed economy assumption, where the Government pursues exclusively non-trade, domestic policy goals. The main traditional justification for subsidies (taxes), according to traditional mainstream economics, is as an instrument (even if a second-best one) to correct market failures, thus helping the economy to achieve a more efficient equilibrium than the one that would prevail in a laissez-faire situation.

Market failures can manifest themselves as positive or negative externalities, and can be seen in a static or a dynamic dimension. From a development strategy point of view, however, the dynamic dimension is of particular interest. The market, left to function spontaneously, is bound to be subject to inter-temporal failures: such failures essentially arise because in economic terms individual agents tend to behave according to a subjective discount rate

which is different – usually too high – in relation to the optimum discount rate a hypothetical perfectly informed planner would assign to the society as a whole. In other words, individual agents often exhibit short-sighted behaviour, investing too little and shunning complex, uncertain long-term projects, partly but not exclusively due to lack of information. On the contrary, policy makers do have (or should have) a strategic development vision. Thus, they can implement a development strategy, earmarking (through subsidies and other instruments) resources for new and strategic industries. Subsidies aimed at protecting the environment can also be seen as measures to achieve efficiency in a broad and long-term (inter-generational) dimension, internalizing external diseconomies that are not accounted for by the market and pushing the economy towards a more sustainable development path.

Inside a particular industry, or horizontally via measures affecting all sectors of the economy, Governments can also prioritize specific subsectors or activities that are deemed to have a particularly high potential to boost productivity growth and technological progress across the national economy as a whole. Most of these activities are of an infrastructural or, more broadly, of a service character, and thus the pros and cons of their subsidization are especially relevant in the context of this paper, taking into account its sectoral focus.

In this respect, a particularly important category of subsidies, often justified on the basis of both static and dynamic externalities, is that of subsidies for R&D. In a closed economy context, these subsidies are often justified on the grounds that private firms left on their own would under-invest in R&D, as the corresponding benefits appear too subject to risk and too far into the future from the point of view of the single economic agent. The issue of subsidizing R&D becomes more complex in the more realistic context of an open economy (Box 1.1).

Another important category is constituted by subsidies targeted at achieving social distributional goals: subsidies to the poor, the unemployed, handicapped people, less developed regions, and the like. There can be cases when such subsidies are fully Pareto-efficient, but usually they are not: for example, subsidies to the unemployed might stifle the willingness to work, and subsidies to disadvantaged regions might distort incentives and cause a less than fully efficient nationwide allocation of resources. In these cases policy makers must assume the existence of a trade-off between efficiency and a social goal, to be resolved according to the relative weight attached to each. From this viewpoint, too, subsidies to some service activities are exceptionally important. Subsidized – usually public – provision of essential services, such as security, education and health, and possibly of many other services needed for the direct fulfilment of crucial welfare requirements (such as care for children, the elderly and disabled, transportation, and cultural services), is an essential policy tool aimed at ensuring the broadest possible satisfaction of basic human needs and, at the same time, equalizing the real distribution of income.²

² As an instrument to improve the real distribution of income, the direct provision of basic services can often be preferred to other policy tools, as it does not affect the distribution of private monetary incomes and therefore might be deemed to be less distortionary.

Box 1.1

Subsidies in an open economy: a textbook model

The basic (static) functioning of subsidies in an open economy, according to mainstream theory, is illustrated in most manuals of international economics and trade. Among them, Gandolfo (1998) proposes a particularly clear exposition, based on a static, partial equilibrium analysis approach, which can be particularly useful in evaluating the welfare cost of alternative subsidy policies.

The subsidy policy might be well justified, according to priority criteria that cannot be captured by this simple model, as it could be needed to improve macroeconomic equilibrium (i.e. the balance of payments). Alternatively, or in a complementary fashion, the subsidy could generate long-term dynamic benefits, providing national entrepreneurs with additional incentives to channel more resources towards technologically advanced, fast-growing products. However, according to mainstream theory, the subsidy also inevitably implies a static welfare loss, which is constituted by the sum of two components. One component is the welfare loss in terms of consumers' surplus, and the other the loss in terms of producers' surplus. Both losses are caused by the distortions implied by the shift in equilibrium caused by the subsidy, taking into account consumers' and producers' supply and demand function.

Subsidies can be earmarked for both a (net) exporting sector and a (net) importing sector. In the former case, "the subsidy can be either an export subsidy (i.e. given to domestic producers on the exported part of their output) or a production subsidy (i.e. given to domestic producers on their whole output)" (Gandolfo 1998, p. 209).

If the subsidy is an export subsidy, the supply schedule does not change: producers move outwards along the curve, increasing export-bound production to make the most of the subsidy. National producers prioritize overseas markets, and the (residual) domestic consumption shrinks, causing a decrease in consumers' surplus. The total welfare cost is given by the sum of the welfare costs from the consumers' and the producers' side respectively, caused by the "distortions" induced by the subsidy. The Government, alternatively, can choose to introduce a production subsidy. The supply function shifts downward, and equilibrium is reached at a higher level of output. All additional output is exported, and the domestic price does not change. In comparison with the export subsidy, the financial cost for the Government (*ceteris paribus*) is higher (all production, and not only its export share, is now subsidized), but the welfare cost is lower (as the domestic price does not change, domestic consumption does not change either and thus there is no loss of welfare on the consumers' side).

The conclusion from this (admittedly narrow) partial equilibrium approach is therefore that a production subsidy, which does not create a wedge between the domestic and the international price, is preferable to direct trade intervention, such as an explicit export subsidy. From the point of view of practical political feasibility, moreover, the potential advantage of a production subsidy is even more evident: as opposed to an export subsidy, it is less likely to be unambiguously forbidden by multilateral trade rules. A production subsidy (especially if finely crafted as an indirect subsidy to one or more production inputs, i.e. energy, R&D, transport, or others) is also much easier to portray as a policy measure mainly targeted at non-trade goals, often not intrinsically economic in nature (i.e. social, environmental), rather than at increasing exports. A third scenario contemplates a net importing subsidy, in which the Government grants domestic producers a (production) subsidy. As a result, the supply schedule shifts upwards, national production increases and imports shrink. It is interesting to note that in this case – although, as in the preceding one, the subsidy is spread over the totality of domestic production – market conditions are different. National consumers keep purchasing the same amount at the same (international) price; the only change is that now the share of domestic producers has increased. Therefore there is no loss of consumer surplus. This outcome (again, keeping in mind the caveat that the analytical approach is a very partial and stylised one) shows that, if the Government's goal is to reduce imports, a producer subsidy can be a Pareto-superior policy tool with respect to a tariff (which distorts both production and consumption, implying welfare losses on both sides).

Summing up the results of the simple partial equilibrium models outlined above, Gandolfo (1998, p.211), expressing a view shared by most mainstream economists, concludes that "production subsidies are to be ranked above tariffs". That the matter is not only one of textbook theoretical disputes is made clear immediately below, where the author observes that "the previous treatment explains why countries may prefer the instruments of the new protectionism rather than the traditional ones" (*ibid.*).

Arguments in favour of subsidies must be weighed against those militating against, which are often focused on the negative dead-weight effect they may cause to the economy due to their distortionary effects. Besides that, Governments (in good or bad faith) might end up unduly favouring some firms or social groups at the expenses of others, and might in fact lack the information to “pick the winners” among potential national champions. Moreover, even if possibly to a lesser extent than in the case of other protectionist tools, the abuse of subsidies could become self-reinforcing and ultimately impossible to keep in check, leading not only to chronic inefficiencies but also to the risk of catastrophic trade wars.

1.2. Subsidies in an open economy engaged in international trade

It would be extremely difficult to evaluate fully, in a general equilibrium framework, the magnitude of all direct and indirect benefits and costs induced by subsidy policies worldwide, or their distribution among different social groups and geographic areas (subsection 1.4). However, it is safe to assume that the vast majority of subsidy policies are enacted mostly to pursue domestic goals, and most of their impact is also felt domestically (although the indirect international effect of many subsidy policies implemented chiefly for domestic purposes can also be quite large, as is for instance the case with agricultural support policies).

Yet there is another category of subsidies which, even if its budgetary weight is relatively modest with respect to subsidies aimed at domestic policy goals, has a disproportionate impact on countries’ international competitiveness, and thus on worldwide trade flows. These are the subsidies specifically aimed at achieving trade policy goals. In this perspective, it is important to note that policy makers do not always implement subsidy programmes and other proactive interventions with the main purpose of favouring special minority interest groups at the expense of the rest of the national population. Rather, their goal is to strategically strengthen their own country (admittedly, frequently identified rather narrowly with the business, industrial and political elite) at the expense of other countries. This is the essence of strategic trade policies, which rely on subsidies as one of their most powerful instruments. The basic conceptual difference between the closed economy and the open economy case is therefore that in the latter, as a general rule, it cannot be assumed that there is one global social welfare function to maximize for all countries. Even if theoretical arguments on how the full application of laissez-faire principles might benefit all countries alike are common, it is usually correct to assume more realistically that each country strives to maximize its own social welfare function.

In the open economy context, as a first approximation, it is often assumed that a small country assumption holds, according to which trade policy measures taken in a country not endowed with relevant market power are not expected to have any impact on the world price of a given product. If a country’s Government decides to subsidize an industry, it will try to do so by maximizing national producers’ benefits while minimizing the costs to domestic consumers. A clear textbook exposition of mainstream theory on subsidies in the case of an open economy, in the framework of a partial-equilibrium, comparative statics model, can be found in Gandolfo (1998): its basic elements are illustrated in Box 1.2.

Yet cases in which each country’s actions do have an impact on international prices, and more generally on other countries’ trade policy options and possibly on the very state of international trade relations, are quite common in the real world. They are also more interesting from the vantage point of an analysis aimed at evaluating different strategic

development policy options in the era of globalization. Moreover, in international and interstate relations, non-economic (*strictu sensu*) arguments often weigh heavily in policy makers' welfare functions. Among them, geopolitical, military, ideological, religious and prestige considerations might be as strong as or stronger than purely economic and social considerations. In the international arena, the relevance of non-economic arguments in the policy makers' welfare function is much higher than in the case of a closed economy. As a result, the chances that a conflictive, interventionist strategic-trade approach will be preferred to a cooperative, mutually Pareto-efficient approach are also quite real.

Box 1.2
Definitions of subsidies in economic theory

From both a formal and a functional point of view, subsidies and taxes are opposite and equivalent: subsidies can be considered as negative taxes, and vice versa. According to Samuelson and Nordhaus (2001, p. 78): "If taxes are used to discourage consumption of a commodity, subsidies are used to encourage production...The general rules for subsidies are exactly parallel to those for taxes".

In the Palgrave Dictionary of Economics, under "tax and subsidies" the focus is on corrective or Pigovian taxes and subsidies "that could in theory be used to bring marginal private costs or benefits more closely into alignment with marginal social ones" (Eatwell et al. 1989, p. 608). The need for such an alignment is due to the presence of externalities (economies or diseconomies) operating at the margin. Externalities may be between enterprises, caused by technological interdependence and other inter-firm linkages that may be conducive to the realization of economies of scale and scope, or between consumers, where consumer A's utility function contains a variable also present in consumer A's utility function. Externalities can also be between firms and consumers, and a number of complex combinations are possible.

According to theory, consumers and firms' optimizing behaviour drives towards the equalization of both private costs and benefits. If the latter do not coincide with social costs and benefits, a market failure arises, i.e. an overall Pareto-efficient equilibrium is not reached.

In the abstract world of traditional economic theory, where each agent can endlessly and at no cost negotiate with every other agent, the most efficient taxes would not go to the state, but would be equivalent to subsidies paid by one agent to the other in such a way that both end up in a Pareto-efficient equilibrium position. In practice, due *inter alia* to the presence of significant asymmetries of information and transaction costs, corrective taxes and subsidies enacted by the Government under its unique authority are the only solution. This is true even if such taxes/subsidies are to be seen as second best solutions to be weighed against other second best solutions such as licenses, quantitative restrictions and outright prohibition. It is important to point out that, according to the above argument, corrective taxes/subsidies are always about achieving efficiency in a Paretian sense, not equity. Therefore the issue of distributional equity should in principle be tackled by means of an entirely different category of taxes/subsidies, along with other policy tools.

1.3. Operational taxonomy

In theory, welfare is maximized when prices equal social marginal costs. If the market does not spontaneously reach this equilibrium, Governments should intervene with taxes/subsidies to correct market failures. In practice, marginal costs, and *a fortiori* social marginal costs, are hard to evaluate, and the benchmark to define subsidies is provided by some kind of reference prices, usually identified with opportunity costs. In the case of tradables, world market prices are obvious candidates. However, interventionist policies in producer countries holding a sizeable share of world markets do have an impact on world prices, and thus the latter cannot simply be considered exogenous. Domestic prices of nontradables are even more obviously affected by subsidy policies. Moreover, the reciprocal interaction of subsidy programmes and other proactive policies at the domestic and the international levels further complicates the task. In sum, the identification and evaluation of reference prices to define and quantify subsidies is often not a straightforward exercise.

Taking this caveat into account, a pragmatic operational definition of subsidies is as follows: “Subsidies comprise all measures that keep prices for consumers below the market level or keep prices for producers above the market level or that reduce costs for consumers and producers by giving direct or indirect support” (de Moor 1997, sub-section 2.3). On this basis, an operational taxonomy based on the method of enacting the subsidies and consistent with the WTO Agreement on Subsidies and Countervailing Measures, can cover four types of subsidies (ibid.):

1. Budgetary subsidies, which can be direct (grants or payments to consumers or producers) or work through the effect of preferential tax policies (such as tax credits, exemptions, allowances, exclusions, deductions, and rate relief, among others);
2. Public provision of goods and services below cost, such as the provision of infrastructure and complementary services and government R&D expenditures);
3. Capital costs subsidies (preferential loans, loan or liability guarantees and debt forgiveness);
4. Policies that create transfers through the market mechanism, be they domestic-oriented (such as price regulation, quantity controls, government procurement, and ad hoc legislation) or trade-oriented (such as export and other types of subsidies);³

Some of these categories of subsidies are more difficult to evaluate than others. Budgetary effects of tax policies can be measured with the revenue-foregone method (ex-post), the revenue-gain method (ex ante), or the outlay-equivalent method, which estimates the cost of providing the same benefit through direct spending. In practice, the revenue-foregone method is the most widely used, but it is clear that the three procedures are not fully equivalent and might lead to different estimates, thus suggesting that international comparisons should be taken with a grain of salt. Public provision of goods and services can also raise difficult computational and even theoretical difficulties. For instance, if the marginal cost of infrastructure is virtually nil, it might be argued that the optimal option is in fact to charge a zero price, and that such a pricing policy does not in fact amount to subsidization in the proper sense. In practice, however, it is usually sounder to charge users at least part of the recovery costs for services to shape their behaviour in order to internalize these costs to some extent. Allowing, often not explicitly, public companies to generate a lower than market rate of return is also a form of subsidy, but identifying the proper reference price (in this case, the proper interest rate) is not an obvious exercise. Domestic market-mediated subsidy policies encompass such a variety of price- and quantity-based measures that getting the overall picture can be a complicated task. Finally, trade-oriented subsidies are a particularly important category, because they directly affect international competitiveness and are the favourite tools of neo-protectionist policies (section 2).

³ de Moor 1997 also lists in this category all tariff and non-tariff barriers. However, not all trade-oriented policies represent subsidies in the operational sense (even if, from the point of view of domestic producers, they are in a way equivalent).

1.4. Estimating the magnitude and incidence of subsidies

Various methodologies have been proposed to measure the magnitude of subsidies. The most important include:

- Nominal rate of protection (percentage difference between the domestic and the world price);
- Effective rate of protection (percentage difference between value added per unit of output at domestic and world prices);⁴
- Nominal rate of assistance (percentage difference between unit gross returns to producers for domestic output and the world price);
- Effective rate of assistance (ERA); and
- Producer/consumer subsidy equivalent (PSE/CSE).

The last two indicators are particularly apt for international comparisons. The ERA is the percentage difference between value added per unit of output at domestic and world prices, taking into account all subsidies, taxes and other government actions that affect the price of a product even indirectly. Its inclusiveness makes the ERA a very complete indicator, but all the data required to calculate it are often not available.

The PSE, developed by the OECD, is more operational. It measures the value of transfers to domestic producers at current levels of production, consumption and trade, using world prices as benchmarks. It includes market price support, direct payments, reductions in input costs, general services and other indirect support, but excludes some specific subsidies such as payments to offset social security costs and grants to cover subsidence damage. The PSE concept has been used by van Beers and de Moor (2001) in their overall evaluation of subsidies worldwide, the main results of which are reported and discussed in section 3. It was also adopted by the WTO to monitor the implementation of the Uruguay Round Agreement. The WTO applies a slightly different procedure, calculating an aggregate measure of support (AMS) on the basis of a fixed reference price (in order to measure the progress towards liberalization over time). A crucial detail, moreover, is that the AMS, contrary to the PSE concept, does not include R&D subsidies.

Finally, it is worth briefly mentioning the problem of how to evaluate the direct and indirect incidence of subsidies. Clearly, if measuring the sheer magnitude of subsidies is not easy, assessing their full impact on the domestic and the international economy is far more difficult. Ideally, a complex computable general equilibrium (CGE) model would be required, but this technique is not usually feasible. Usually, in policy-oriented, practical exercises, only a limited number of economic, social and environmental indicators are considered, sometimes in a multi-criteria framework. Among the most commonly used economic indicators are GDP or productivity growth rates (either relative to the whole economy or to specific sectors), domestic or international market shares, and employment data. Statistics on emission reductions and on the depletion of natural resources can be used as environmental indicators, and the Gini coefficient and the incomes of specific groups of population as social indicators. Even when applying this less ambitious approach, however, analysts should strive to gauge heuristically the most evident and relevant intersectoral linkages and other indirect effects of subsidies.

⁴ The effective rate of protection is a concept belonging to economic theory that applies essentially to tariffs. It has only an indirect relation with concrete policy measures such as subsidies.

2. THE POLITICAL ECONOMY OF SUBSIDIZING SERVICES

2.1. Sub-optimal subsidy policies as a social choice problem

If subsidies, like all interventionist attempts to tinker with the free working of market forces, cause various types of distortions, constitute under the most optimistic assumptions a second best solution, and are bound to disrupt the international trade scenario, thus possibly thwarting the overall process of globalization, with all its universal benefits, why then are they so popular and hard to eliminate? This is the traditional, rhetoric question that theoretical economists ask now and again. The answer, usually, is rooted in ignorance. The general public ignores the economic effects of subsidies and sees only their superficial, immediate benefits. More specifically, most people (consumers/taxpayers) are left in the dark on the ultimate, negative consequences of interventionist policies. Thus, they tolerate politicians imposing subsidies that only benefit relatively small interest groups at the expense of the majority of the population. Worse still, this is not even a zero-sum game, where some people's losses are exactly compensated by other people's gains, as it leads to a Pareto-inefficient equilibrium where everybody is, on average, worse off than if the market had been left free to operate spontaneously. Such an unsatisfactory state of affairs, *a fortiori* in a democracy, is only possible because politicians are in fact working not for the common good, but on behalf of special interest groups or lobbies. These groups are small, homogeneous, organized, and informed enough to realize the particular benefits they reap from subsidies, and they are also in the position to control enough votes to make or kill any politician's career.

Moreover, both beneficiaries and institutions get easily "addicted" to subsidies (van Beers and de Moor, 2001, chapter 4). It is not only a matter of psychology. Once a sector is subsidized, relative prices are altered, and producers rationally invest in fixed capital to a larger extent than would have been the case in a no-subsidy situation. If subsidies were phased out, these investments would become uneconomic and could lead to a wave of bankruptcies. In other words, the subsidy policy pushes producers to engage in rent-seeking behaviour, and a policy change would impose significant adjustment costs on them. Institutions, such as government bodies, are resistant to change – actually, their very existence is justified by some theorists as a means to reduce and make more manageable the instability, uncertainty and unpredictability that would prevail if all economic interactions were left to spontaneous market forces, due among other things to asymmetric information and transaction cost problems. Institutions are also path-dependent, i.e. once a bureaucratic function and a corresponding body have been created, their elimination would not be socially and economically costless (think, for instance, of the implications of removing agricultural subsidies programmes, which presently employ a numerous and specialized public workforce).⁵

⁵ The concept of path-dependency in institutions is analogous to the one familiar to technological economics (see van Beers and de Moor 2001, para 4.4.)

Box 2.1

International trade liberalization, national states, and subsidies: A political economy approach

O'Brien (1997) has proposed a political economy and institutional approach that stresses the tensions between multilateral trade liberalization and the prerogatives of national States on the issue of subsidies. According to O'Brien: "The ability to tax and spend is fundamental in our understanding of the modern state" (p.17). Control over taxation was at the core of both French and American revolutions. A true State in the traditional sense must be able to collect revenues and spend them without recourse to outside powers. Broadly defined as whatever form of public expenditure that supports the production of goods and services, expenditures can include "just about every function that governments undertakes from running a police station to providing a tax break for corporations" (p.18). Yet nowadays the concept of state sovereignty is undergoing important changes, with the unprecedented relevance and powers of the WTO and other super-national and/or multilateral trade bodies.

International attempts to regulate and curb subsidies challenge the traditional understanding of the very concept of state, as they restrict its ability to dispense revenues, according to four general trends which inform the overall drive towards (neoliberal) globalization:

1. Liberalization of the state, which reduces Governments' involvement in the economy. A common and still largely WTO-compatible response on the part of national States is to reduce direct assistance to goods-producing firms, while concentrating on broad infrastructural expenditures on social and other services that are indirectly instrumental in shaping the overall socially determined competitiveness of each national economy as a whole (among them social support, education, research, welfare, transport and communication). This neo-protectionist trend, however, is tempered by the reluctance of OECD countries to phase out direct support programmes for key sectors such as agriculture, audiovisuals or aerospace (section 4).

2. Liberalization versus autonomy. In many countries, liberalization and globalization trends produce a major contradiction. Social and economic groups that are failing or perceived as failing push in the domestic political arena for a more aggressive posture vis-à-vis other countries, accusing them of unfair trading practices and pressuring for a combination of protection at home and attack abroad. As by now the goal of tariff reduction has been largely achieved, trade rivalries and disputes are deviated, with augmented emphasis on other direct and indirect trade policy instruments: "Subsidies are a particularly sensitive area because most of the controversial ones have been established to pursue domestic goals rather than achieve competitive advantage... (therefore) the attack on another government's domestic policies is an attack on its policy autonomy" (p.19).

3. Transfer of decision-making authority. This authority appears to be progressively slipping away from States' grasp and shifting toward regional (i.e. the EU) and multilateral (i.e. the WTO) bodies. It is only apparently paradoxical that the United States, the country which has pushed most for the creation and progressive empowerment of WTO and more generally for the neoliberal globalization model, is in fact the one that is the most reluctant to submit to this transfer of decision-making. This evident contradiction, taking into account the weight of the United States, creates an intrinsic and ever-resurfacing tension in the globalization drive.

4. Erosion of democracy and accountability. The above-mentioned tensions are exacerbated by the fact that multilateral trade bodies, bureaucracies and courts are not elected bodies, even if they are not intrinsically undemocratic either. Moreover, once agreed upon, treaties are not regularly subject to popular review, and in a way they resemble a long-term constitution more than legislation subject to review. Physically, they are located far away from most of the world populations and tend to operate on highly technical grounds. Thus, they are seen by many as the domain of obscure technocracies, on which it is extremely difficult to exercise any form of democratic control. Yet, they are increasingly bestowed with decision-making power, even on locally sensitive matters such as the amount to be spent to support rural communities. Thus, attempts "to create institutions which could depoliticize subsidy issues and turn decisions about tax expenditure into technical exercises" (p.20) also create contradictions, as well as rational and irrational popular fears.

The explanation outlined above contains more than a grain of truth. However, it reflects a universal problem faced by social choice in general, and should not produce a naive interpretation of social and political mechanisms leading to the implementation of subsidy programmes. There are a number of features in social life that lead to sub-optimal equilibria

from the point of view of common welfare and that could ideally be superseded in favour of Pareto-efficient solutions if every member of society behaved in a perfectly socially virtuous fashion. For instance, public expenditure on police forces is a social cost that could easily be eliminated if no citizen indulged in criminal activities. It can also be seen as an inefficient policy tool enacted by the state to protect the interests of one part of the society (non-criminals) at the expenses of another part (criminals). Many other socially useful, albeit inefficient subsidies, can be seen in a similar framework.

In sum, subsidies, like virtually all state policies, as well as the actions of other social and economic agents, are not, and cannot be expected to be, aimed at maximizing the ultimate welfare of humankind as a whole. In a less than perfect world, they must rather be seen and evaluated realistically as tools to boost the welfare of some social groups. Even taking such a pragmatic approach for granted, the sheer magnitude of subsidies, and the scale of the social and environmental costs they often impose on both developed and developing countries due to their perverse effects, cannot be overstated (section 3). Therefore, the existence and persistence of socially counter-productive subsidies should not be taken as an inevitable fact of life, and a broad, if gradual, reform of overall subsidy policies should figure prominently in policy makers' agendas.

2.2. Cooperation and conflict in international trade policy rivalries

As mentioned in the preceding subsection, economic theory contemplates the possibility of reaching a solution based on cooperation, leading to a mutually preferable equilibrium with respect to the outcome that would arise from the adoption of conflictive strategic trade policies.⁶ Still, subsidies and other instruments seen as trade policy tools should not, as a general rule, be seen in a universal Pareto efficiency framework, but in a rivalry-based strategic trade policy framework. It might be true to state that reciprocal and universal elimination of state-induced trade distortions (worldwide trade and financial liberalization) would improve universal welfare, but this is not by itself more meaningful than stating that universal and full disarmament would do the same. In both cases two fundamental problems arise related to the feasibility of bribing and to the concept of trust respectively. The first problem stems from the fact that for a (by assumption) globally Pareto-efficient liberalization measure to be undertaken bilaterally or multilaterally, every State must gain something, or at least it must not lose. It is often very difficult in practice to compensate the losers, even where theoretical global gains from liberalization are huge. The problem of trust is self-evident and relates, among other things, to issues such as the imperfect and asymmetric information on rivals' intentions and, possibly, hidden agendas.

In the international arena, there is always the possibility that a trade problem will be solved not through meaningful negotiation but through de facto unilateral imposition of the will of the stronger side by means of war, military threat or milder trade-related or broader economic and political pressure. Even in these cases, there is the theoretical possibility that the result could be a welfare improvement in both countries (i.e. the case of a strong trade partner forcing a weaker one to phase out inefficient protectionist measures that were effectively making that country worse off than an alternative scenario of no trade policy intervention whatsoever). However, it is fair to assume that, especially in the unilateral imposition case, the stronger side only maximizes a national rather than a global welfare function. Thus, an

⁶ Actually, the main justification for the existence of quasi-universal multilateral trade agreements is precisely that of limiting the damage caused by this form of "tragedy of the commons".

outcome with an improved welfare level for the weaker side could only arise as a casual by-product of the stronger side's unilateral and selfish action, and only if the level of self-defeating inefficiency of the weaker side's previous trade policy was extremely high. Such an outcome, albeit not impossible, should in fact be considered an oddity.

Box 2.2

Internalization, subsidies and strategic trade policies

According to Busch (1999), a relatively simple game theory framework helps to understand the basic features of trade-strategic rivalry and its possible outcomes in the present WTO-conditioned international trade scenario. Each potential subsidizer knows that engaging in an aggressive interventionist policy in support of "national champions" can provoke a retaliation on the part of rivals, with the risk of unleashing a trade war, which might end up leaving both parties worse off than if neither had interfered in the market. Thus, seeking to maximize national welfare, States weigh the expected benefits from subsidies against expected costs. The latter, of course, can never be nil, but the main issue is the likelihood that they might skyrocket due to the reaction of trade rivals. Benefits are essentially related to two categories of externalities: linkage externalities, stemming from downstream and upstream scale economies, and spillover externalities, stemming from the diffusion of technology among related industries. It is crucial to gauge not only the magnitude of these externalities and the ability of national firms to realize them, but also to what extent they can be captured by national agents, without spreading outside the national borders, i.e. to what extent they can be internalized. If internalization prospects in a given industry are poor (usually because its structural features are such that technology advances originating in one country rapidly spill over borders and are easily and cheaply appropriated by other countries), supporting the industry would equate to subsidizing trade rivals, who would act as technological free riders.

According to Busch, policy makers are less irrational than economists sometimes portray them to be and do not always engage in a subsidy frenzy. On the contrary, they tend to intervene in an industry (if they intervene at all) only to an extent proportionate to their "rational expectations" on key variables, such as the magnitude of the externalities, their "capturability" on the part of national industry, and the degree of internalization of expected benefits. In a two-country strategic trade game between rivals of comparable strength, this attitude can typically lead to various different outcomes.

If only one State can capture and internalize the externalities while the other cannot, the first one will heavily subsidize the industry until foreign competitors are swept away from the market. This outcome is all the more likely because, as the prospects for its own industry are not favourable, the other State will probably choose not to retaliate. Such a dichotomized incentive structure, leading to drastic subsidies shelling, is however less frequent than four other configurations, which lead to various forms of limited intervention.

If externalities are high and both countries are in a position to capture and internalize them, rivals are driven to heavily subsidize their respective industries. This policy stance, however, is bound to provoke an escalation, leading to diminishing returns for both players and to the risk of a full-fledged trade war. Under this threat, both States may seek to cooperate, agreeing on lowering the level of subsidies. The US-Europe civil aircraft rivalry can be interpreted along these lines.

If both countries can capture the externalities but cannot internalize them, they will initially try to free ride and neither will subsidize the industry. As a result, the industry will develop too slowly, hurting both countries. Contrary to the previous case, therefore, they might end up brokering a solution based on both countries increasing subsidies, creating a different form of limited intervention equilibrium. This has been the case in the US-Japan semiconductors rivalry.

If one country can capture, but not internalize the externalities, and the other cannot capture them, the first player will subsidize the industry, but only to a point, as the country is aware that part of the benefits will inevitably spill out of its borders and in the future might even help the rival to exploit a "late mover" advantage, making it a formidable competitor. An example of this configuration is the US-Japan High Definition TV rivalry.

Finally, if neither country can capture or internalize the externalities, there is no incentive to subsidize, and the rational strategic choice is simply non-intervention.

Apart from this extreme case, individual States and coalitions of States are usually interlocked in complex strategic trade games that alternate and combine moments of intense rivalry with moments of cooperation. An interesting approach to the analysis of subsidies to

R&D and other activities, in the framework of a two-country game for supremacy in high technology industrial sectors, is presented in Box 2.2.

2.3. Subsidies to services as strategic trade policy tools and the crucial role of education and R&D

Subsidies to service activities, more so than subsidies to the primary or secondary sectors, can play a very important role in any strategy aimed at accelerating growth and enhancing the international competitiveness of a country's entire economic system.

Not only has the relative weight of services been expanding to cover an increasing share of total economic activity both in developed countries and in many developing countries, material production activities themselves (many of which are tradable) are increasingly dependent on activities classified as services (many of which are still non-tradable). The availability, efficiency and cost of infrastructural and other key services are also increasingly important in determining the international competitiveness of the agricultural and industrial sectors and thus of the national economy as a whole. Accordingly, subsidizing certain key services that represent inputs and/or the availability of which constitute key enabling conditions for commodity production is equivalent to indirectly subsidizing the latter, with obvious trade policy implications. This argument applies not only to subsidies earmarked for traditional services sectors such as energy and transport, or to more modern infrastructural services such as telecommunications, but also to basic services such as education and health. Subsidies to education and health services have a direct impact on human capital formation. While in advanced countries the impact of subsidies on international competitiveness in technologically advanced sectors works mainly via the availability and cost of skilled labour, in poor countries subsidies to basic services also affect the very working ability and, quite directly, the material productivity of unskilled labour (think, for instance, of the devastating impact of AIDS on African rural productivity and of how it might be mitigated by an improvement in public health services).

Still, as the role of knowledge in the modern economy cannot be overemphasized,⁷ higher education and R&D services have a unique, crucial and universal impact on each country's productivity and competitiveness. Even if the relationship between cause and effect is complex and non-linear, it is safe to state that the set of activities aimed at increasing and spreading a society's stock of knowledge (including, for instance, education), and R&D activities in particular, are the main source of innovation and productivity growth, and therefore ultimately of economic development at large.⁸ Besides their key role as productivity boosters, education and research also share two other important characteristics; both are plagued by externalities, which mean there is bound to be underinvestment by private agents

⁷ Investment in R&D is the centerpiece of "new growth theory". See, for instance, Helpman and Grossman 1991, Aghion and Hovitt 1998.

⁸ Several empirical microeconomic studies have robustly confirmed the linkage between R&D and productivity growth at the firm and industry level (Griliches, 1998). A more controversial question is the following: to what extent are subsidies to R&D additional with respect to private R&D (i.e. end up producing more R&D, as intended by policy-makers), and to what extent, on the contrary, do they "crowd out" or substitute for private R&D, thus failing to reach their ultimate goal? Many recent studies have explored the "additional effect" of R&D subsidies, both theoretically and empirically, reaching different conclusions on its magnitude under different conditions and policy scenarios (see, for instance, Guillec and van Pottelsberghe de la Potterie 1997, Busom 2000, David, Bronwyn, and Toole 2000, Lach and Sauer 2001). However, there is little doubt that, by and large, R&D subsidies do boost overall R&D at the national level (and thus, ultimately, economic growth as well) to some extent.

left to the vagaries of the market, and both are primary candidates for state support. Moreover, the negative effect and perverse distortions commonly associated with subsidies are likely to be minimal, if any, in the case of education and R&D.

The case in favour of subsidies for education is usually, and correctly, put forward mainly on social grounds. Yet public support for education can also be seen as a tool to boost a country's international competitiveness. Actually, Governments, besides subsidizing part of the private sector's R&D effort, also carry out their own R&D in public research institutes and finance higher education. As a result, each country's enterprises system, seen as a whole, reaps two categories of competitive benefits from public subsidization of R&D. The first category is constituted by the direct cost saving stemming from the subsidization of enterprises' own R&D. The second category of benefits is indirect, and stems from the overall educational and technological spillovers of the R&D carried out by public bodies and by Governments' funding of higher education. By this token, the huge gap between per capita public subsidies for education in developed and developing countries amounts to an unfair competitive disadvantage for the latter.⁹

Box 2.3

The distorting impact of subsidies to developed countries' construction firms

Competition among large and small firms in construction services is intense, yet a high level of public intervention characterizes the sector. In developing countries, in particular, dualism is the norm: on one hand, small-scale private construction works are carried out by local firms in an anarchic and unregulated fashion; on the other hand, the big business of large construction projects is dominated by state procurement, complex regulations and public financing. Especially in poorer countries, the role of bilateral and multilateral donors is also paramount.

Developing countries' firms, due to a number of structural weaknesses, are at a severe disadvantage in competing for large construction works in their own countries, let alone exporting their services abroad, although some interesting exceptions do exist. Under these circumstances, donors' financing for large infrastructural projects in developing countries is almost completely captured by a few large transnational corporations from developed countries, through de facto quasi-monopolistic practices. Thus, the bulk of donor financing for construction projects in developing countries amounts to an indirect form of subsidy for developed countries' own construction firms, additional to other specific subsidies they usually receive from their Governments (for R&D, feasibility studies, market development and the like).

The severe difficulties encountered by developing countries' construction firms in competing in their own countries' markets against foreign firms from developed countries, due among other things to the pervasiveness of various forms of subsidies and to the existence of other unfair trade practices, were underlined in an UNCTAD Expert Meeting held in Geneva in October 2000. In the outcome of the meeting, experts agreed that developing countries had little alternative but to strengthen the competitiveness of their national construction firms through strong interventionist policies, including various forms of subsidies: "The development of a strong domestic construction sector (in developing countries) should be supported by instruments of industrial policy... adequate funding for research and development is an essential component of such policies..."(UNCTAD 2000a, p.2). Given the uneven subsidization potential between rich and poor countries, the international community should substantiate the special and differential treatment principle by allowing developing countries ample room to enact support policies, while curbing unfair trade practices on the part of developed countries. The GATS negotiations, in particular, should "address measures which impede the ability of developing country firms to compete in their own markets and in those of other countries, including subsidies...Developing country Governments should identify...the main trade barriers affecting their trade in construction services...These include restrictions on... subsidies and discriminatory tax policies..." (UNCTAD 2000a, p.4).

⁹ As a matter of fact, it could paradoxically be argued that public support for education in OECD countries should be gradually phased out in the framework of global progressive liberalization.

Especially in the domain of high technology sectors, subsidies to services activities constitute one of the most important tools of strategic trade policy. High-tech industrial sectors do produce tradable goods, but their relationship with services is very close. The strategic relevance of high-tech industries is not so much in their manufacturing and trading aspects, but in their unique position as intensive users and creators of advanced technology, first-class human capital and, more generally, knowledge. High-tech industry is the domain of externalities par excellence, of which technological spillovers, backward and forward linkages, economies of scale and scope, and path dependency are only the most obvious examples. In a long-run, strategic perspective, for an industrialized or even a semi-industrialized country, the development of high-tech industrial sectors is the most decisive determinant of the overall development of the national economy taken as a whole. As a consequence, it is also a decisive component of the country's international trade competitiveness, and thus the privileged field of intervention for strategic trade policy makers. It is therefore not surprising that "developed and developing states have been jockeying for a foothold in high-technology industries, the spoils of which may be had by just a few lucky winners. These commercial rivalries are fuelled by concern that gains and losses may be path-dependent, and that success in these industries may confer an insurmountable lead in building the 'economy of tomorrow'" (Busch 2000, p.2).

Box 2.4

Subsidies to the health sector as an export promotion tool in developing countries

One of the main sectors subsidized in all countries, for obvious social reasons, is that of health services. Nevertheless, international trade in health services is expanding, and it could offer new export opportunities to developing countries. As a matter of fact, in such a human-capital-intensive sector, many developing countries can effectively overcome their technological disadvantages, capitalizing on the availability of a cheap and qualified workforce and achieving international competitiveness in a number of niche subsectors. Moreover, potential synergies with other services, such as tourism, also offer promising development potential (UNCTAD 1997, p.10).

As in other sectors, these opportunities are conditional on the fulfilment of many requisites, some of which can be resolved through multilateral trade negotiations (for instance, the liberalization of movement of natural persons and an improvement in the domain of international recognition of qualifications and diplomas and of the cross-border portability of health insurance). Still, strong national support for the health sector and the elaboration of effective export strategies are also essential, as showed by the successful experience of some developing countries (UNCTAD 1997, p.1). The practicability of effective proactive strategies, with their important export-promoting component, requires on the part of developing countries the capacity to earmark scarce resources for the health sector and a measure of restraint on the part of developed countries in subsidizing (often indirectly) their own export-oriented private health firms. The last point was highlighted by experts participating at the 1997 UNCTAD expert meeting on international trade in health services: "(improved) disciplines on subsidies could increase the participation of developing countries in global trade in services...Experts expressed the view that issues such as subsidies, safeguards and government procurement deserved more attention in the future..." (Chairman's SUMMARY of the experts' informal discussion, pp.5-10, UNCTAD 1997).

High-tech industrial sectors are intensive users of highly specialized R&D and of other knowledge-intensive services activities – which as a group can be dubbed as advanced high-tech support services – and, to be efficient, they must rely on a complex and costly public and private service infrastructure. Subsidies to these services constitute strategic trade-policy tools ultimately aimed at enhancing the overall international competitiveness of each country's economy taken as a whole. The feasibility of such an aggressive technology and trade policy approach, from the point of view of international trade law, can be conditional upon the formal classification of R&D and other advanced high-tech support services. These

can be internalized in the high-tech firm: in this case, they are formally classified as ancillary activities carried out in the framework of industrial material goods production, and therefore they often fail to be considered statistically as services in their own right. Alternatively, as happens ever more frequently, such service activities are externalized, and these crucial non-material inputs are bought by the high-tech industrial firm through market transactions. In this latter case, advanced services should be statistically classified as part of the broader services sector. This classification difference is very important to specify the applicability of multilateral trade liberalization rules, as in some cases policy measures such as subsidies might be WTO-compatible if they are formally classified as belonging to the services sector and WTO-incompatible if they belong to the industrial sector.

3. SUBSIDIES IN DEVELOPED AND DEVELOPING COUNTRIES: A REVIEW OF QUANTITATIVE EVIDENCE

3.1. The difficult task of estimating global subsidies

Various factors (among them the multiplicity and pervasiveness of subsidies in virtually all countries, developed and developing; the variety of direct and indirect instruments utilized by Governments to implement – and often also to disguise – subsidy policies; and a relative understatement of their importance as a major economic, social and political phenomenon) help to explain why comprehensive attempts to estimate the overall magnitude of subsidies worldwide are relatively rare and do not go very far back in time. In the 1970s and 1980s, global awareness on environmental problems, and the emergence and popularity of the concept of sustainable development, led to new interest in analysing the unintended and often perverse environmental impact of economic policies, among them subsidy programmes. In a 1992 World Bank study, Shah and Larsen warned that subsidies to the energy sector of the order of hundreds of billions of dollars worldwide were a major cause of pollution, let alone economic inefficiencies. Estimated global subsidies to agriculture, energy, water and road transport stood at US\$ 700-900 billion, and they often encouraged ecologically harmful behaviour and usually had a negative distributional impact (as they disproportionately benefited relatively rich population groups). Another estimate by Myers, who applied partially different criteria to include various forms of indirect subsidies, put the total of perverse subsidies at US\$ 1,400 billion. Two OECD (1997, 1998) studies confirmed that large subsidies to agriculture, industry and transportation in developed countries routinely cause pollution and excessive use of natural resources. The remainder of this section reports briefly on and illustrates the estimates proposed in the most recent comprehensive study on subsidies worldwide (van Beers and de Moor 2001).¹⁰

3.2. More than a trillion dollars per year

Global public subsidies are more than a trillion dollars per year (US\$ 1,065 billion), or four per cent of world GDP. This amount corresponds roughly to the equivalent of the combined GDP of all low-income countries, or to the total external debt of developing countries. OECD

¹⁰ In 1995, under the guidance of the former OECD Secretary-General, Emile van Lennep, the Earth Council embarked on an initiative to evaluate the costs and impacts of public subsidies, with the main goal of unveiling their negative environmental consequences. The initiative grew to a progressively more structured research project, with the constitution of the Institute for Research on Public Expenditure, and to the publication of various reports. Van Beers and de Moor have been contributing to the Earth Council initiative for a number of years. In their most recent book, along with a thorough analysis of the political economy of subsidies and proposals for subsidy reforms, they synthesize the main quantitative results of their research on subsidies, many of which had been previously published in van Beers and de Moor 1999 and in OECD 2000.

countries spend more than twice as much on subsidies in relation to developing countries (US\$ 725 billion against US\$ 340 billion), but much less in proportion to GDP (3.4 per cent and 6 per cent respectively) (van Beers and de Moor 2001, subsection 3.3). These figures inspire two basic remarks.

First, absolute and, *a fortiori*, per capita expenditure on subsidies is much higher in developed than in developing countries. It does not seem to matter how inefficiently this expenditure contributes directly and indirectly to increasing the international competitiveness of national firms (see the arguments developed in section 2 on strategic trade policies). As the financial capability to enact subsidy policies is unequally distributed worldwide, the political will to pursue these policies on the part of developed countries contributes powerfully to invalidating the abstraction of an even playing field in global trade and to perpetuating and magnifying poverty and underdevelopment in developing countries.

Second, and only in part as a reaction to developed countries' subsidy policies, the weight of subsidies in developing countries is particularly high. Many of these subsidy policies (although by no means all of them, as some selective subsidy policies are necessary tools of development strategies) are likely to contribute to some extent to inefficiencies and distortions in developing countries' economies.

Subsidies are widespread in all sectors, but half of total subsidies are earmarked for natural resources sectors. Such a large share is particularly perverse and paradoxical, as it encourages the exhaustion of irreplaceable and non-renewable natural resources which, according to any official political discourse, should be preserved and defended as an utmost priority. This contradiction is particularly strident in the developing countries, where subsidizing the overexploitation of natural resources in a short-sighted attempt to boost production and exports and often leads to the classical fallacy of composition outcome and ultimately to the additional boomerang effect of reducing their price and aggravating the country's terms of trade.

Among natural resources sectors, agriculture gets the lion's share (US\$ 400 billion worldwide). OECD countries, in particular, channel half of all their subsidies to agriculture. From the point of view of the focus of this paper, it is interesting to note that, apart from agriculture, the three most subsidized sectors all involve services: water, energy and road transport. These three services sectors absorb almost half of total subsidies worldwide and an even higher share (mainly accounted for by energy) in non-OECD countries (table 3.1) Water collection and distribution is subsidized more heavily in developing countries (US\$ 45 billion per year) than in OECD countries (US\$ 15 billion).¹¹ Energy is also heavily subsidized (US\$ 240 billion a year). Road transport is another highly subsidized sector, absorbing more than four times the amount of subsidies of the manufacturing industry. With respect to the latter, it is interesting to note that the quasi-totality of manufacturing subsidies (US\$ 55 billion) benefit industries in OECD countries, thus enhancing their global competitiveness and jeopardizing that of developing countries.

¹¹ A significant part of water subsidies is earmarked for irrigation. These water subsidies overlap to some extent with subsidies to agriculture (see subsection 3.3).

Table 3.1

Percentage share of three large services sectors in total public subsidies per year			
<i>(US\$ billion)</i>			
	OECD	Non-OECD	World
Energy, water, road transport	41	68	49
Agriculture	46	19	38
Others (including manufacturing industry)	13	13	13

Note. Estimates refer to the 1994-1998 period.

Source: van Beers and de Moor 2001, table 3.1.

3.3. Subsidies to water distribution services

Global water reserves are not unlimited and are unevenly distributed. Thus, water is actually scarce in many regions (namely the Middle East and North Africa) and subregions. On average, 70 per cent of water use is accounted for by agriculture, a figure reaching 90 per cent in the case of low-income countries. Conversely, in high-income countries, almost half of total water use is accounted for by industry. Global water demand doubles every 20 years, spurred mainly by water demand from agriculture and industry. Access to safe water in poor countries is inadequate, due among other things to losses and inefficiencies in irrigation and distribution systems. Research has shown that price elasticities for water users are significant and can be over one for non-residential (agricultural and industrial) users.

Due to the obvious economic, social, political and geo-political relevance of water, Governments are heavily involved in water issues. Yet government interventions in water distribution, and subsidies in particular, are often inefficient and/or counterproductive. On a global scale, the main distortion they provoke is the under-pricing of a resource that is in fact scarce, favouring waste and suboptimal uses. Water subsidies take different forms. Among the most widely used are official prices set so low that they do not even cover marginal costs for irrigation and recurrent (let alone capital) costs for drinking water; VAT exemptions; tax exemptions; and soft loans for intensive irrigated agriculture.

In OECD countries, there are two main forms of water subsidies: grants and low-interest loans. The weight of water subsidies is uneven and particularly high in Australia, Japan, Turkey, and the United States. Most subsidies are earmarked for capital expenditures, with grants covering on average between 20 and 40 per cent of total costs but reaching up to 80 per cent for irrigation projects. Many irrigation projects are not intrinsically economically viable per se, and are carried out only because of the enormous subsidies involved. Several studies have shown that irrigation tends to be extremely underpriced in OECD countries. On the basis of an average subsidy rate of US\$ 54 per acre, total annual subsidies for irrigation for the 40-50 million acres of irrigated land in the United States can be estimated at US\$ 2-2.5 billion (Repetto 1986. Moore and Mc Gucking 1988. De Moor 1997. Van Beers and de Moor 2001), resulting in vast rents benefiting mostly large farmers. Moreover, water subsidies encourage farmers to overproduce and thus obtain further government subsidies under acreage reduction programmes. Water subsidies in the United Kingdom are in the order

of US\$ 1.2 per year (Maddison et al. 1997). Total water subsidies in OECD countries are at least US\$ 15 billion per year (van Beers and de Moor 2001).

Water subsidies in the developing world are even higher, around US\$ 45 billion per year, half of which are for irrigation (De Moor 1997, Myers 1998). The two main justifications for subsidizing water in relatively poor countries (to increase agricultural production and thus food security; to help the poor to get access to clean drinking water) are virtuous in principle. However, more often than not, subsidies fail to reach the poorest segments of the urban and rural population, encourage inefficiencies and waste, and aggravate pollution. The fiscal burden of delivering ever-scarcer and underpriced water to households, especially in large, fast-growing and polluted cities, is very high and always on the rise. Part of the cost is due to inefficiencies and losses caused by underpricing. Irrigation is also subsidized, with cost recovery between 10 and 20 per cent on average in the 1980s (Repetto 1986), a figure insufficient to cover even operating and maintenance costs. Subsidies to irrigation in developing countries are estimated at about US\$ 20 billion per year. According to studies by the World Bank (1993, 1994) and others, the reduction and rationalization of water subsidies, especially with respect to irrigation, would provide developing countries with economic, fiscal, social¹² and environmental benefits. On a global scale, however, it is economically and socially difficult for developing countries to cut support for their own agricultural sector (where a large part of the population still makes its living) by removing irrigation subsidies, while developed countries – which would face much smaller social and political problems, due to the tiny fraction of their population still living on the land – continue subsidizing their own agricultural sector heavily through an array of market-distorting policy instruments, of which irrigation subsidies are but one of many.

3.4. Subsidies to energy services

Over the past 50 years, global energy consumption has quadrupled. The main energy consuming sectors are electricity, industry, transport and households. Households account for about 20 per cent of total energy consumption. Per capita use of commercial energy in high-income countries is three to four times the world average. The main energy source in industrial countries is oil, followed by coal, natural gas and nuclear energy. Renewable energy sources play a marginal role. Income and price elasticities of energy consumption are quite significant.¹³

Experts' estimates on the future supply of non-renewable energy sources diverge. The mainstream opinion is that a sudden, catastrophic scarcity is an unlikely scenario, but existing subsidies should be eliminated in order to let the market put a proper price on these resources (quite apart from the crucial issue of adequately taking into account the cost of environmental degradation caused by present energy use patterns).

The main environmental problems caused by energy production and use are the following:

- Global warming;
- Land and sea pollution caused by acid rain, dust and soot, and incomplete combustion;

¹² According to the World Bank, contrary to what many believe, water subsidies actually disproportionately benefit the rich. Hence, they are distributionally regressive.

¹³ Income elasticity tends to be higher in developing than in developed countries, while the opposite is true for price elasticity. If the overall economic linkages of energy use were considered, these elasticity estimates would probably have to be revised upwards.

- Loss of biodiversity;
- Deterioration of water quality;
- Health problems, mainly respiratory diseases;
- Specific energy sector diseases (i.e. miners' black lung);
- Safety risks (mainly associated with nuclear energy and waste);
- Land use conflicts;
- Dust and soot problems.

Governments aggravate the problems by subsidizing energy production and consumption, and often create biases favouring the most polluting energy sources. OECD countries tend to subsidize energy production, while developing countries concentrate on subsidizing energy consumption (OECD 1997, van Beers and de Moor 2001). Yet from a domestic macroeconomic point of view, most oil and gas exporters effectively tax the energy sector to subsidize the rest of the economy. Thus, it can be stated that the energy sector in most countries is at the centre of a complex web of subsidy flows,¹⁴ usually regulated by heavy state intervention, which sometimes lead to inefficient or even perverse outcomes.¹⁵

To subsidize energy services, Governments use various policy tools – such as grants, mandatory regulations, training assistance, price controls and guaranteed markets – targeting either energy producers or consumers. Relevant examples in the industrialized world are as follows:

- Direct grants to the coal sector in the United Kingdom, Germany, Japan, and Russia;
- Tax subsidies (depletion allowances) in the United States;
- Tax exemptions for consumers in the United Kingdom and Italy; and
- Price support to domestic producers in Germany.

Various other forms of subsidized energy are also widespread, among them loan guarantees and soft loans to energy producers, rules designed to allow public energy producer companies to earn a lower-than-market rate of return, and below-cost public provision of key services (i.e. R&D) to the energy industry.¹⁶

To sum up, OECD countries massively subsidize energy production and distribution. Energy subsidies falling under the PSE sub-section 1.4 definition are estimated to be between US\$ 18 and US\$ 32 billion in the US,¹⁷ about US\$ 10 billion in Europe, and US\$ 6 billion in other IEA countries, for a gross OECD total of between US\$ 53 and US\$ 67 billion.

Adding non-PSE coal and other subsidies (such as deficit payments to miners' pension funds), total OECD energy subsidies might run to US\$ 70-89 billion. This figure might in

¹⁴ This kind of intersectoral cross-subsidization falls outside the definition and taxonomy of subsidies potentially relevant from the point of view of multilateral trade negotiations (see section 1).

¹⁵ Increasing realization of the problems related to excessive state regulation, along with the interests of large transnational corporations, led to a worldwide drive towards liberalization in the energy sector. Liberalization itself has led to a new set of problems and challenges, which were discussed in the UNCTAD Expert Meeting on Energy Services held in Geneva in July 2001 (see UNCTAD 2001).

¹⁶ Consumer subsidies also take various forms. In the United States, the Low Income Home Energy Assistance Program subsidizes poor households' fuel purchases. In many countries, especially developing countries, consumer prices of energy are kept artificially low.

¹⁷ There is more information on energy subsidies in the US than in other OECD countries. In the US all energy forms are subsidized, and the total amount of subsidies might reach US\$30 billion (including the construction and interest costs of the large oil reserve and the non-recoverable investment in uranium enrichment facilities). Two-thirds are channeled towards fossil fuels, but nuclear energy is also heavily subsidized. Conversely, subsidies to renewable energy sources are small.

fact even be an underestimate. The preferred forms of energy subsidies in industrialized countries are budgetary subsidies and public provision of goods and services (including R&D). The latter are particularly relevant in the United States and Japan (de Moor 1997). OECD subsidy policies are biased in favour of fossil fuels, mainly coal. Total subsidies to fossil fuels in OECD countries amount to US\$ 30 billion for coal, US\$ 19 billion for oil and US\$ 8 billion for gas. Adding subsidies to nuclear energy (16 billion) and to renewable energies (9 billion), the total cost of energy subsidies per year is US\$ 82 billion, equivalent to US\$ 88 per capita (van Beers and de Moor 2001, Table 3.6. See also IEA 1999).

Energy subsidies in non-OECD countries are even larger in absolute size (about US\$162 billion), although lower in per capita terms (US\$ 35). The bulk of these subsidies is accounted for by ex-Soviet countries, where domestic energy prices stand at 20-40 per cent of world prices. China and India also heavily subsidize energy, mainly electricity. Waste, distortions and negative environmental effects are often unintended results of these subsidy policies. Yet when considering the prospects for reforming energy subsidy measures, policy makers face a serious policy conundrum, as energy is a crucial component of any development strategy and access to vital energy sources is still denied to the poor majority in many developing countries.¹⁸

Energy subsidies in many countries have been declining in the 1990s, by an amount roughly estimated at US\$ 100 billion worldwide. The trend has been particularly marked in some non-OECD countries where energy subsidies were traditionally extremely high, notably Russia. China, too, has been increasing coal prices up to levels close to world market ones. In the UK, de-monopolization and privatization of the various energy sector indirectly contributed to raise energy prices. In spite of these changes, energy is still amply subsidized in most countries, both developed and developing.

According to OECD (1998, 2001), eliminating subsidies to energy producers in selected OECD countries would contribute to reducing carbon dioxide (CO₂) emissions (by 80 to 180 million tons by the year 2010), corresponding to a few percentage points of total emissions in 1990 but not sufficient by itself to stabilize carbon emissions. Most of the reduction would result from the elimination of coal producer subsidies, which is expected to lead to a 20 per cent increase in world coal prices and to a fall in total energy demand. However, if existing non-price distortions, such as quantity restrictions (for example minimum local-purchase obligations), were not removed as well, they would undermine the environmentally favourable impact of the elimination of subsidies.

Phasing out subsidies would also reduce other pollutant emissions, such as greenhouse gases, nitrogen oxide (NO_x) and sulphur dioxide (SO₂).

From a strictly economic viewpoint, analyses appear to show that subsidies actually tend to damage the economy through their distorting impact, rather than strengthening it. Thus, according to different studies, assumptions and scenarios, the net economic impact of a

¹⁸ During the Expert Meeting on energy services, the representatives of India and of various African countries stressed the dramatic humanitarian and ecological consequences of lack of access to modern and sustainable energy sources on the part of millions of rural and urban poor households (see UNCTAD 2001, Part.II.C).

mutually agreed worldwide scaling down of energy subsidies would range from negligible to distinctively positive.¹⁹

In conclusion, evidence shows that the reduction and eventual elimination of energy subsidies worldwide would bring large environmental, economic and even social benefits. To be effective, fair and politically feasible, subsidy reforms should be carried out on the largest possible scale, according to a gradual, internationally agreed and coordinated agenda. Reforms should aim at increasing competition, and should contemplate measures to compensate – at least in part – social groups that are bound to emerge as losers. In this endeavour, it would be hypocritical to understate the fact that major differences separate developed from developing countries. The latter face the harshest obstacles in reforming their energy regimes. Conversely, developed countries – which currently consume the bulk of world energy – are much better equipped to reform energy regimes and have a wider set of policy options, thanks to their financial, institutional and technological superiority. Accordingly, an asymmetric approach grounded on the principle of special and differential treatment on the part of the international community would be a welcome and promising prerequisite for a mutually agreed process of gradual reduction of energy subsidies worldwide.

3.5. Subsidies to transport services²⁰

Transport, like energy, is essential for the functioning of any modern economy. Most countries in the world subsidize various forms of transport subsectors, such as maritime, air and rail transport. The bulk of the subsidies, however, is channelled towards road transport. Subsidies to road transport are found mainly in developed countries, but they are on the rise in developing countries (OECD 1997, 1998, van Beers and de Moor 2001). Their conventional measurement involves an estimate of the difference between the large government outlays on building and maintaining roads and on providing a number of services (among them, parking spaces), as well as revenues forgone via a number of specific tax reduction schemes (e.g. for business cars), on the one hand, and the taxes and fees effectively collected from road users on the other hand. Many observers argue that such a methodology leads to a severe understating of road subsidies, as it ignores the huge negative externalities implied by this form of transportation (such as pollution, noise, accidents and congestion).

As these externalities are hard to measure, van Beers and de Moor 2001 propose a “conventional” estimate of road subsidies that does not include them. Still, they arrive at a total figure of no less than US\$ 225 billion per year worldwide. The United States is the country with the heaviest intervention. The country subsidizes road transport to an amount of US\$ 125 billion per year, equivalent to 2.2 per cent of GDP and to US\$ 666 per vehicle. Japan Germany, and the United Kingdom are also net subsidizers, as they earmark US\$ 35 billion, US\$ 13 billion and US\$ 7 billion per year respectively for road transport (equivalent

¹⁹ The distribution of expected benefits, however, would be uneven, with Russia and most transition and developing countries gaining the most, while China and energy-exporting countries either gaining less or becoming worse off. Subsidy reforms in developing countries would also bring about economic benefits. Studies on the social impact of energy subsidies removal tend to show that the most negatively affected group might be the urban lower middle class, while the poor majority both in towns and in the countryside might actually end up better off.

²⁰ In industrialized and semi-industrialized countries, subsidies to road transport amount to indirect support to the automobile industry. Nevertheless, road transportation as such is an activity belonging to the domain of services.

to roughly one per cent of total GDP apiece). France and the Netherlands, on the contrary, tax the sector (van Beers and de Moor 2001, table 3.9).²¹

Subsidies to road transport in developing countries are much lower but are on the rise, especially in semi-industrialized countries. Governments' stated goals are mainly to promote overall economic development and to help the poor, but they are rarely achieved efficiently. As in the case of water facilities, underpricing of road use can lead to lack of funds for maintenance and ultimately to large (and avoidable) costs for premature road rehabilitation (estimated at US\$ 1.5 billion per year for developing countries as a whole in World Bank 1994). From a social point of view, moreover, subsidies to road transport tend to be distributionally regressive. Still, as in other key infrastructural sectors, developing countries often lack the funds and/or the technologies to set up alternative and less polluting forms of mass transportation (such as railroads) and are in practice forced to support the growth of road transport as the only, albeit not efficient, way to relieve major bottlenecks in communications and economic development.

3.6. Subsidies to R&D

The preceding subsections showed that the bulk of non-agricultural subsidies worldwide is channelled towards three services sectors – energy, water and (mainly road) transport. There is, however, another crucial and heavily subsidized service activity for which Van Beers and de Moor (2001) did not present comparable aggregate data: R&D.²² This subsection presents some indicative data on R&D expenditure and on the extent of public support to R&D activities in OECD countries.²³

Total OECD expenditure on R&D was over US\$ 551 billion in 2000,²⁴ up from less than US\$ 400 billion in 1990. The share of the United States was 44 per cent, and those of the EU and Japan 28 per cent and 17 per cent respectively. In 2000, the (gross) R&D/GDP ratio²⁵ averaged 2.24 per cent, up from 1.95 in 1981 but down from 2.29 in 1990. Sweden is the country in the world dedicating the highest share of GDP to R&D. Among industrialized countries, R&D/GDP ratios are above average in the United States and Japan and particularly low in Italy and Spain. Among developing countries, the R&D/GDP ratio is very high and increasing in the Republic of Korea and, to a lesser extent, in China. Mexico and Turkey, two semi-industrialized OECD members, have been able to increase their R&D/GDP ratios only modestly (OECD 2002, table 7). In most OECD countries, the share of R&D funded by the Government²⁶ fell in the 1990s but is still quite sizeable. It was 29 per cent in 2001, down from 37 per cent in 1990. The respective figures for 2001 were 35 per cent for the EU and 27 per cent for the United States, showing that the weight of the public sector in R&D is somewhat higher in Europe than in America (OECD 2002, table 9).

²¹ Data in van Beers and de Moor 2001, table 3.9, are taken from case studies carried out in the early 1990s.

²² The role of subsidies to R&D as strategic trade policy tools is discussed in subsection 2.3.

²³ Systematic and comparable data on R&D expenditure are usually available only for OECD countries, although the OECD also publishes some statistical information on R&D expenditure in other countries (such as Russia and China).

²⁴ OECD 2002, table 6. The figures are in constant US dollars and are expressed in purchasing power parity terms.

²⁵ The ratio of gross R&D expenditure to GDP (EBRD/GDP) is a useful indicator of each country's capability to earmark its own resources for R&D activities, relative to the size of its economy.

²⁶ As was argued in subsection 2.3, government-funded R&D constitutes an indirect form of subsidy for a country's productive enterprises' system.

The OECD also classifies R&D expenditure by performing sector: the private business sector, higher education, government, and the private non-profit sector. The share of R&D performed by the higher education sector increased slightly during the 1990s and stood at 17 per cent in 2001. Funding for (mostly public) higher education in the EU is relatively higher than in the United States. The share of total R&D performed directly by OECD Governments averages about 10 per cent. It is particularly low in the United States (7.5 per cent) and higher in the EU (almost 14 per cent). It is also high in some developing countries: over 30 per cent in China and Mexico. The share of the private non-profit sector is negligible (OECD 2002, table 9). Thus, the bulk of R&D is performed by the business sector (70 per cent on average in OECD countries, and up to 75 per cent in the United States). It has to be taken into account that part of private R&D is also government-subsidized and may benefit from fiscal incentives (tables 3.2 and 3.3).

Most OECD countries are presently changing their S&T policies in a more proactive sense, after a decade of fiscal restraint and stagnation, and they are increasing public funding for R&D and innovation. Some countries have particularly ambitious targets, among them Austria, Canada, Norway and Spain. The EU has set a goal of earmarking 3 per cent GDP for R&D by 2010. The Republic of Korea is determined to increase government R&D expenditure to 5 per cent of the total government budget.

Government efforts to promote industrial R&D and innovation are being strengthened, a number of reforms are being implemented in universities and public research organizations, and the focus of research on selected targets is being sharpened in order to maximize R&D's positive impact on economic development (OECD 2002, pp.53-54). Government support programmes for private firms' research efforts are being stepped up in most OECD countries, many of them targeting SMEs. Among the countries that have recently established new publicly funded R&D support programmes, or have been strengthening existing ones, are Australia, Canada, Germany, Hungary, Ireland, the Netherlands, New Zealand, Portugal, Spain, the United Kingdom and the United States.

Table 3.2
Industry R&D expenditures and government financing

	Total EBRD (Bn of 1995 PPP US\$)	Government financing* (Percentage of total EBRD)
Australia	3.2	6.9
Canada	5.1	22
France	14.2	15.1
Netherlands	3.2	12.5
United States	152.6	17

Source: OECD 2002

Note: EBRD European bank for reconstruction and development

*Sum of cost to Government of tax credits plus direct government funding.

In 2000 and 2002, many countries also modified their tax treatment of private R&D in order to make it more business-friendly, enhancing its incentive/creative potential, and increasing effective tax reduction rates (OECD 2002, pp.65-67). Other programmes support

entrepreneurship and growth of SMEs by reducing red tape, promoting start-ups and innovative firms, stimulating R&D and innovation in SMEs, enhancing cooperation and technology diffusion among public and private firms and research organizations, and facilitating the commercialization of public research. Some of these programmes are being carried out with a cluster-based or regional innovation focus.

Other closely related policy efforts are aimed at strengthening OECD countries' scientific human capital by increasing public support for key sectors of higher education in order to increase the quantity and quality of scientists and engineers (OECD 2002, pp.64-67).

Table 3.3
R&D Tax subsidies in manufacturing companies, 2001
(Per US\$ of R&D)

	Small firms	Large firms
Canada	0.322	0.173
France	0.061	0.061
Germany	-0.025	-0.025
Japan	0.121	0.009
Korea, Rep. of	0.111	0.126
Mexico	0.031	0.031
UK	0.106	0.096
US	0.066	0.066

Source: OECD 2002

4. SUBSIDIES IN MULTILATERAL TRADE NEGOTIATIONS

4.1. Disputes on subsidies in the early GATT years

Negotiations on subsidies have posed and still pose “particularly difficult problems for the multilateral system because (they challenge) state sovereignty and core values represented by individual states...the major lesson gleaned from a study of the multilateral subsidy issue is the difficulty of reconciling domestic imperatives with international pressure for change” (O’Brien 1997, p.102).

In the immediate post-war years, multilateral trade diplomacy followed two paths: a “fast” one and a “regular” one. The fast path was that of the GATT, which was originally a limited tariff-cutting agreement, signed by the United States and another 14 countries in 1947. The “regular” path was more ambitious and universal in nature, and was based on the Havana Charter (1948), which envisaged a wider programme of trade liberalization, including the elimination of export subsidies. The Charter should have paved the way for the birth of the International Trade Organization (ITO), into which GATT was expected to be subsumed. However, serious contradictions – mainly centred on the issue of export subsidies – erupted between the US State Department, a strong herald of free trade, and the US Agriculture Department, which was adamant about protecting US agriculture. As a result, the United States did not ratify the Havana Charter, thus effectively killing ITO before it could even come into existence. GATT, which was originally meant to be a temporary and partial

instrument, “became permanent and was left as the main legal framework governing international trade” (O’Brien 1997, p.103).

With respect to subsidies in particular, it is interesting to note that the degree of liberalization in the domain of subsidies envisaged by the GATT in its original formulation was much lower than that foreseen by the Havana Charter. In the GATT, Article XVI handles subsidy practices, while Article VI focuses on countervailing duties. Article XVI did not explicitly mention export subsidies, stating only that countries granting any kind of subsidies, which might impact on international trade had to notify them to GATT and consult bilaterally with other countries that might be negatively affected. Initially, disputes focused mainly on the consequences of subsidies on export competitiveness in third countries, but the practical impact of GATT on subsidizing policies worldwide was minimal.

Increasing realization of the limited effectiveness of Article XVI led to its revision in 1955. Subsidies were divided into various subcategories—domestic, export, primary, non-primary—to be treated in different ways. Export subsidies were disciplined more severely than domestic subsidies, and subsidies to industry more severely than subsidies to the primary sector. A 1960 declaration further strengthened this differential treatment, prohibiting subsidies aimed solely or primarily at supporting industrial exports. Implicitly, GATT rules accepted that most subsidies were granted primarily for domestic purposes, and it would not have been politically feasible to eliminate them altogether.

Clearly, its reliance on the subsidizing country’s initiative weakened the effectiveness of Article XVI. Countries that deemed themselves to be damaged by other countries’ subsidies could, however, levy a countervailing duty (CVD) in accordance with Article VI. Article VI conditioned the imposition of CVDs on an injury test (i.e. it had to be demonstrated that the subsidy was inflicting significant damage on the requesting country’s industry). However, thanks (formally) to a technical legal loophole, the United States, the only country to actively use CVDs, managed to be exempted from applying the test. This exemption left the United States free to use this measure as a protectionist tool, but CVDs were in fact applied much less extensively than antidumping duties. In this respect, it has to be pointed out that the two instruments are only apparently equivalent: while antidumping duties target unfair trade practices of foreign firms, CVDs directly challenge the policies of another State and thus its very sovereignty. The political sensitivity of CVDs is therefore higher than that of antidumping duties, a fact that largely explains the wider popularity of the latter.

4.2. Subsidies in the Tokyo and the Uruguay Rounds

The issue of subsidies did not provoke strong disputes until the 1970s, when, as a result of the Tokyo Round negotiations, a subsidy code was added to the GATT and CVD rules were tightened. During the negotiations, the United States adopted an aggressive position, arguing: “Subsidies are serious trade distortions that must precede countervailing action. Therefore, why should the onus be on the countervailer rather than the subsidizer?” (Winham, 1986, p.119). Subsidies, moreover, distorted trade simultaneously in three markets: if country A subsidizes its industry x, it is likely to import less x products from country B, it will export more quantities of x to country B, and will unfairly boost its share in country C’s market, crowding out B’s exports of x. The EC and most other countries, conversely, saw the US use of CVDs as the most relevant danger to trade relations, as they were like a Damocles’ sword threatening to shut off access to the world’s largest market.

During the Tokyo Round negotiations, which were finalized in 1979, the United States proposed (for the first time) a traffic light approach to the subsidy issue. Eventually a Subsidy Code was adopted, stating that the United States would go through an injury test to discipline its use of CVDs, and other countries would curb their subsidy practices. The results of the Code were unsatisfactory. On the one hand, lobbying from industrial interests led Congress to drain the injury test of any significance, and the use of CVD measures on the part of the United States actually rose dramatically in the early 1980s. On the other hand, various factors—such as problems with the definition of subsidies, clauses acknowledging the legitimacy of subsidies to achieve a wide gamut of domestic social and economic goals, and the absence of an effective multilateral mechanism (as distinct from the unilateral imposition of CVDs) to sanction unfair subsidy practices—contributed to weakening the impact of the Code on the widespread implementation of subsidy policies all over the world.

Accordingly, pressure from different sides to deal more effectively with the subsidy issue in the Uruguay Round negotiations, which had started in 1986, intensified. Disputes about subsidies were at the core of the negotiations and went through a complex series of ups and downs, due not only to the traditional, structural divergences between the United States and other OECD members and between developed and developing countries, but also to the change in the US position itself, which during the Clinton administration became more favourable to industrial policy interventions, especially in the domain of high technology sectors. The Uruguay Round Agreement was concluded by the end of 1993, and the subsidy issue was regulated through the traffic light approach. Basically, non-actionable subsidies (green) are those that are generally available rather than being specific to particular industries, those granted to favour the development of disadvantaged regions and—under more restrictive conditions—subsidies to enterprises investing in new machines and facilities in order to meet higher environmental standards. Prohibited subsidies (red) are export subsidies and subsidies conditional on local requirements. All remaining subsidies that are in law or in practice specific (i.e. available only to a single firm or industry, or a determined group of industries) are actionable (yellow or amber). This means that a country that considers itself to be negatively affected by another country's subsidy policy can impose CVDs, provided a number of conditions are met (among them the existence of serious prejudice for domestic industry as a whole and a level of subsidy exceeding a *de minimis* level).

Bargaining among the various countries was particularly lively in the domain of R&D subsidies—with the United States now pushing for an even higher upper permissible limit than the Europeans—and with respect to the issue of the specificity of subsidies earmarked for particular subnational geographic areas. The latter dispute was resolved with a decision that generally available subsidies in a determined subnational area would not automatically be considered specific.²⁷ This point was far from being irrelevant in practice, especially for the United States, where individual states implement arrays of subsidy programmes worth billions of dollars, many of which are earmarked for services sectors and activities such as energy, audiovisuals and R&D—as detailed and thoroughly documented in two 2002

²⁷ The fact that all subnational subsidy policies are not automatically deemed specific does not imply that a particular subnational subsidy programme can be considered specific by a trade rival, who might try to prove its case in order to impose CVDs. There is in fact ample room for future trade disputes focusing on the issue of specificity of regional or state-level subsidy policies.

notifications to the WTO Committee on Subsidies and Countervailing Measures (SCM 2002a and SCM 2002b).

Sectoral issues, centring on agriculture, aerospace and audiovisual industries, were also hotly debated. In the final WTO agreement, the discipline on agricultural subsidies, like all other aspect of trade in agricultural products, was regulated in a unique, *ad hoc* fashion, while aerospace was not brought into GATT at all. As the focus of the present paper is on subsidies to services, rather than goods-producing sectors, the subsidy rules in these two sectors are not examined in detail, and only one crucial point needs to be mentioned. Generally speaking, room for policy intervention, including subsidy programmes, is much larger for agriculture and aerospace than for most other sectors. This also means that opportunities for countries to subsidize infrastructural and other services (including the most important one, R&D), the contribution of which is increasingly critical in determining international competitiveness, are much wider in agriculture and aerospace than in other sectors. It is plain that such an asymmetry, for agriculture in particular, exacerbates the overall distortions implied by the exceptionally high level of interventionism allowed by existent, sector-specific WTO regulations. Such distortions work perversely against the poorest countries, which are not in a position to engage in massive investment in R&D and other agricultural-productivity-enhancing services and therefore see the potential competitive advantage stemming from low rural labour costs dramatically eroded.

The audiovisual sector, on the other hand, is a service sector in its own right (although some audiovisual products are also traded as commodities). It is therefore essentially regulated by GATS, not by the GATT. GATS, unlike the GATT, leaves ample room for the implementation of various forms of subsidy policies. Moreover, it contains specific provisions for the audiovisual sector, allowing Governments virtually a free hand in their subsidy policy options. In the Uruguay Round, however, this outcome was far from obvious, as the United States pushed hard to achieve a significant degree of liberalization in this sector. However, opposition from other countries, and from European countries in particular, which adamantly defended the cultural exception principle, proved too strong to be overcome, and the prospect of a liberalization of trade in audiovisuals, as in other services, was left to future rounds of GATS negotiations (Box 4.3).

In short, the Uruguay Round agreement on subsidies and CVDs represented a substantial step in the direction of multilateral trade liberalization. Yet the disputes that immediately erupted in the US Congress when it started debating the ratification and implementation of the agreement were a signal that the controversy was not over. As previously pointed out, “subsidy negotiations are difficult because they increase the possibility of exposing domestic policy to severe international constraints” (O’Brien 1997, p.125). Room for jockeying with the interpretation of the norms governing the applicability of CVDs, the specificity of subsidies and the scope of subnational support programmes to score new points against trading rivals is ample, especially for stronger countries. The likelihood of the emergence of disputes on subsidy policies is increased, moreover, by the worldwide deceleration of economic growth, with its unequal impact on various countries, industries and sectors, and by the break-up of the previously quasi-unanimous consensus on the desirability of universal and ever-deepening trade and financial liberalization.

4.3. The Agreement on Subsidies and Countervailing Measures and special and differential treatment for developing countries

References to services are numerous in both the GATT and GATS, but in the Uruguay Round the issue of services was treated specifically in an additional instrument, the Agreement on Subsidies and Countervailing Measures (ASCM). For the time being, the ASCM only applies to industrial subsidies, as both agriculture and services were basically left out (subsection 4.4). However, its contents are not irrelevant to the focus of the present paper, as its principles are likely to constitute a key reference point for present and future negotiations on the issue of subsidies in the domain of trade in services as well. Part I of the Agreement states that the ASCM only applies to subsidies provided specifically to an enterprise or industry or to a group of enterprises or industries. Parts II, III and IV set out the “traffic light approach”. Part V describes the substantive and procedural requirements a WTO member must fulfil before applying any countervailing measure. Parts VI and VII provide the institutional structure and the notification and surveillance modalities. Part VIII contains special and differential treatment (SDT) rules for developing countries. Part IX establishes transition rules for developed and transition countries. Parts X and XI detail the dispute settlement and final provisions (UNCTAD 2000). This subsection focuses on the issue of SDT.

The agreement recognizes that “subsidies may play an important role in economic development programmes of developing country members”. Thus, it accords exemptions from the restrictions on subsidies to three categories of developing countries: LDCs, countries with a per capita GDP of less than US\$ 1,000 per year, and other developing countries. The poorer the country, the more favourable the treatment. The first two categories of countries are exempted from prohibition, while the other developing countries can eliminate subsidies over an eight-year period. During that period, they cannot increase export subsidies, and they must eliminate them earlier if the subsidies are not consistent with their development needs.²⁸ Developing countries that consider it necessary to apply export subsidies beyond the eight-year period might be allowed to extend them over a limited period of time after consultation with the SCM Committee. With respect to import-substitution subsidies, LDCs are given eight years to eliminate them, and countries with a per capita GDP of less than US\$ 1,000 per year are given five years. Developing countries are also treated more favourably than developed countries in the domain of actionable subsidies, countervailing measures and dispute settlement.

The practical impact of the SDT dispositions set out in Part VIII is meagre, taking into account the safe haven created in the advanced, supply-chain management for several subsidies used intensively by developed countries, which were made non-actionable (mainly R&D, regional development subsidies and environmental subsidies). On the contrary, as previously mentioned, “subsidies used by developing countries for development, diversification and upgrading are actionable since action can be taken against them under certain conditions. This represents a grave imbalance in the agreement” (UNCTAD 2000,

²⁸ An additional principle applies, related to the concept of “export competitiveness”. Generally speaking, the phasing out of export subsidies is expected to take place in a shorter period of time if a developing country achieves a state of “export competitiveness”, defined as a certain share of world trade for a given product for two consecutive years. Such a share is normally 3.25 per cent, but additional specific norms further condition the applicability of the export competitiveness principle, discriminating again in favor of the poorer developing countries (UNCTAD 2000, pp. 9-10).

p.22). Moreover, the policy room that developing countries are allowed to apply import-substituting subsidies is constrained, and might be challenged as inconsistent with TRIMs. The export competitiveness principle eventually nullifies any advantages of developing countries in the domain of subsidies at the very stage when a developing country acquires a non-negligible position in world trade.²⁹ By the same token, developing countries automatically lose most of the SDT benefits as soon as they reach a per capita GDP of US\$ 1,000, a low threshold indeed. A number of dispositions on agricultural subsidies and dispute settlement also fail to support the spirit of the SDT principle (UNCTAD 2000, section V).

4.4. The treatment of subsidies in the GATS

One major result of the Uruguay Round was the creation of a powerful, high-level multilateral international trade body, the WTO, which supersedes the implementation not only of the GATT (which currently regulates international trade in goods) but also of GATS, a new agreement specifically tailored to regulate international trade in services. Taking into account that service sectors worldwide tend to be much more regulated than goods sectors, as well as a number of other differences between trade in services and trade in goods, it can be said that the coming to existence of GATS effectively removed the issue of subsidies to service activities from the ASCM discipline.

Due to a complex web of factors (among which it might be worth mentioning the fact that trade in services is effected through four modes of delivery, as well as other structural differences between trade in services and trade in goods; the traditionally higher degree of state intervention, and the lower degree of tradability of services, with respect to industry and agriculture; the statistical and monitoring difficulties inherent in the estimation of international trade flows in services; and the negotiating stances of major trading partners during the Uruguay Round negotiations), the extent of binding trade liberalization brought about by GATS in the domain of international trade in services falls short of that brought about by GATT 1994 in the domain of trade in goods. With respect to the issue of subsidies in international trade in services, it can be broadly stated that GATS does not restrict in any practical way member States' faculty to implement subsidy policies.³⁰

Subsidies are dealt with specifically in Article XV of GATS. In fact, however, Article XV does not go any further than recognizing that "in certain circumstance, subsidies may have distorting effects on trade in services" and advocating further negotiations on the issue (UNCTAD 1993). To date, therefore, subsidies for services are fully GATS-compatible. Subsidies, however, should not in principle prevent the granting of MFN treatment, and hence should not discriminate in favour of national service suppliers. It should also be noticed that nothing in GATS prevents countries from increasing their subsidies.

Other articles can be invoked to justify the enactment of subsidy policies in a more indirect fashion. Article I, in subsection 3, states that GATS "includes any service in any sector except services supplied in the exercise of government authority" and that the latter are all those services "supplied neither on a commercial basis, nor in competition with one or more service suppliers". Along with Article XIII, this subsection leaves member countries room for

²⁹ An additional problem with export competitiveness might be constituted by its asymmetry: if a developing country loses export competitiveness, it is not clear how it might be allowed to apply export subsidies again (UNCTAD 2000, para V (iii)).

³⁰ The picture might change, of course, if the present round of GATS negotiations produces a consensus to change the GATS structure substantially in the direction of progressive but forceful liberalization.

several kinds of “proactive” policy interventions to favour national producers, for instance in the audiovisual sector, using subsidies or other policy instruments (Box 4.3). Article XIII rules that Article II and XVII (on most favoured nation treatment) and XVI (on market access) do not apply to the “procurement by governmental agencies of services purchased for governmental purposes” in the pursuit of non-commercial goals. Of course, government procurement can be a form of subsidy policy.

4.5. Multilateral regulation of subsidies to service activities: a grey area?

One of the key requisites for subsidies to be actionable (or totally prohibited) in the ASCM is their specificity (subsection 3.3). Because of the peculiar characteristics of services, however, the attribution of specificity is more difficult than in the case of industry or agriculture, as many services have an infrastructural nature and contribute indirectly to the functioning of many other sectors or even of the economy as a whole. Total or partial provision of services by the Government—often justified primarily for social reasons—is widespread. Various forms of indirect subsidization (among them) also affect the international competitiveness of firms, blurring the separation between trade in services and trade in goods.³¹ Particularly widespread forms of indirect subsidization include the preferential tax regimes for foreign operations and foreign consumers, and the subsidies to ancillary service activities needed to support productive sectors, such as R&D, travel and feasibility studies.

Only some of these non-trade-neutral subsidies to services sectors are clearly and specifically regulated by multilateral trade rules. An example is subsidies to export shipments provided or mandated by Governments on terms more favourable than for domestic transportation, which are prohibited under GATT Article XVI. Conversely, subsidies to consultancy services are not only allowed but are non-actionable. Other input and infrastructural services (such as the preferential provision of electricity at lower rates and government-financed construction of storage, processing and transport facilities, to the extent that they are targeted specifically at exporters) are in principle actionable, and in fact have been the cause of WTO disputes and the imposition of countervailing measures—especially on the part of the United States (UNCTAD 1993, pp. 4-5). The complexity of the matter and the lack of clear-cut principles on the discipline of subsidies in trade in services, however, have made and continue to make these cases highly controversial.

The uncertainties surrounding multilateral regulation of subsidies for infrastructural services, in particular, allow the existence of a grey area, as many of these services are in fact subsidized, thus altering the international competitive playing field in a number of important traded activities. Transport and utility services are cases in point. Among the former, air and maritime transportation have been the object of various trade disputes, a fact that reserved them special treatment in the Uruguay Round agreement.³²

³¹ Subsidies to a service activity can be enacted through a number of policy tools, among them the subsidization of goods used as inputs in producing the services (examples include ships, aircrafts and hotels) and government purchases.

³² Subsection 4.5 – the magnitude of subsidies to transport services.

Financial and audiovisual services, of course, are also the object of heavy public intervention in most countries. The impact of financial policies, including preferential lending programmes, on the economy as a whole, and on export competitiveness in particular, is self-evident. Audiovisual services, too, tend to be subsidized and protected (Box 4.3).

Other infrastructural or social services, such as education and health, are often provided by Governments at little or no cost for obvious social reasons, yet they do have a strong systemic impact on international competitiveness (see subsection 4.6 on subsidies to R&D and higher education). Besides their indirect impact on the economy as a whole, some (often subsidized) education and health services can also be directly exported. This is the case in many developed and also in a few developing countries (the United Kingdom and the United States for education services, and Cuba, India, Switzerland and the United States for health services). In spite of the existence of specific multilateral trade rules, potentially trade-distorting subsidies for the production and consumption of telecommunication services—a sector that has shifted from public to private hands in a number of countries in the last two decades—are also common (UNCTAD 1993, pp.6-7).

Another category of subsidies to service activities that can be considered to amount to indirect export subsidies comprises subsidies to “export market development” programmes, which cover several activities aimed at the penetration of new markets and the preparation of feasibility studies, projects, bids and the like. On one hand, government support for such activities can be a badly needed and very effective policy tool for developing countries in overcoming some of their firms’ structural weaknesses and helping them to get a foot in international markets. On the other hand, given the asymmetry of Governments’ financial capabilities, subsidies for export market development more often than not end up being an additional factor magnifying the competitiveness gap between firms from developed and developing countries. This is the case, for instance, for engineering and construction services, as was documented by a number of examples in the UNCTAD Expert Meeting held in Geneva in October 2000 (UNCTAD 2000a).

In short, subsidies for social and infrastructural services, even more than other types of subsidies, do have an impact on international competitiveness. So far, due among other things to the weakness and unsystematic character of multilateral disciplines on this matter,³³ these subsidies have tended mostly to favour developed countries’ trade competitiveness at the expense of developing countries. If the special and differential treatment principle were more generally accepted and more effectively applied in this domain, however, developing countries’ trade and development prospects could be significantly boosted.

4.6. Analytical work on subsidies to sector services in the WTO: the Working Party on GATS Rules

After the conclusion of the Uruguay Round and the launching of GATS, a number of pending issues in the domain of multilateral rules on trade in services were left to further negotiations. Subsidies, in particular, were to be discussed in the Working Party on GATS Rules. Responding to a request by the Working Party, the WTO Secretariat, in January 1998,

³³ As mentioned in other parts of this paper, there are a number of objective factors that make the regulation of subsidies more complex and difficult in the case of services than in the case of goods. It has been argued, for instance, that countervailing duties are more difficult to apply in a proper fashion and could more easily turn out to be disproportionate and arbitrary in the case of trade in services than in the case of trade in goods (UNCTAD 1993, p.11).

presented a note (WTO 1998) containing empirical evidence on subsidy programmes for service sectors in various countries and larger trading entities (such as the EU), based on all the WTO Trade Policy Reviews (TPR) conducted since 1995 (31 in total).

The definition of subsidy used in the note is basically the same as that established by the WTO Agreement on Subsidies and Countervailing Measures, which states that subsidies are financial contributions by Governments (or other public bodies) that confer a benefit. Consistently, TPR reports cover support to service activities bestowed “in the form of direct transfers of funds, including grants, loans, and equity infusions; potential direct funding of funds or liabilities, e.g. loan guarantees; government revenue forgone; supply of goods and services other than general infrastructure; purchase of goods; payments to funding mechanisms, or income and price support” (p.2). Conversely, it does not include other, more indirect forms of subsidization, such as: “exemptions from indirect taxes (i.e. VAT, usually aimed chiefly at encouraging consumption rather than production of a service); generally available support (i.e. in the context of regional development or R&D programs); company-internal cross-subsidization between monopoly and market-oriented activities in sectors such as telecommunications” (WTO 2000b, p.2).

With respect to this definition, the note observes that it is correct from a conceptual point of view, but the main problem it raises consists in identifying the ultimate beneficiary of a subsidy in a given services area, as the support measure may actually have been earmarked for downstream users, rather than the immediate recipient. In addition, subsidies to service activities are often aimed primarily at public policy or infrastructural objectives. An example is provided by the provision of basic health services, which can be ensured through different measures such as cost-free treatment in state-owned hospitals (a public infrastructural service), the granting of public funds to private hospitals (a form of subsidy to the health services sector), or government-sponsored premiums for basic health insurance (a form of subsidy to the insurance services sector).

In the introduction, the WTO Secretariat gives a warning on a number of issues. The note focuses only on one specific policy instrument—financial support—“whose use may be accompanied by a variety of other measures, such as regulated prices and access conditions” (p.1). The TPR reports could not always identify thoroughly the reciprocal interactions among these measures, or evaluate their relative importance in a comprehensive fashion. As mentioned above, the very goals of the numerous subsidy programmes were often difficult to disentangle, as many of them were likely to have been implemented mainly for non-trade purposes, in accordance with social or industrial policy objectives. Moreover, “given the infrastructural importance of many services sectors and their role as generally available inputs, it could be misleading in individual cases to equate the recipients, e.g. railways, with actual beneficiaries which may include any social or economic group relying on rail transport” (ibid.). The selection of countries for review did not follow any global scientific and statistical method, but merely followed the schedule previously established by the Trade Policy Review Body. Finally, the coverage and contents of the reports were determined by the availability of data, which in turn was largely (albeit not exclusively, as the TPR reports also strived to include relevant information from other sources, such as international organizations or independent researchers) a function of the Government’s ability and

willingness to provide the Secretariat with adequate cooperation.³⁴ For all these reasons, the Secretariat acknowledged that the note could “not claim to give a representative picture”. Still, it constitutes a “reasonably comprehensive source of information in this area”(ibid.).³⁵

To sum up, from a methodological viewpoint, the note is in a way more significant for what it does not say than for what it says. Still, it does propose a few brief remarks stemming from the comparative examination of TPR reports’ data.

Box 4.1

An interpretation of the law of subsidies

Due to the complexity and the sensitivity of the issue and to the progressive superposition of various and not always obviously consistent agreements and amendments, it might appear that multilateral rules on subsidies in the GATT/WTO system in fact constitute a legal patchwork. On the contrary, according to Benitah, there is a “fundamental theme” underlying all provisions on services in the system and which “constitutes the key to understanding their legal basis”. This theme confronts the need to attenuate entitlements granted to the party seeking to defend itself against the “adverse effects of subsidies” (Benitah 2001, p.1). The legal treatment of subsidies bears a resemblance to that of pollution: the negatively affected party sees both pollution and subsidies as negative externalities, and seeks complete protection from the legal system. However, the modern economy could not function if every kind of polluting economic activity were fully prohibited. Thus, legislators often deem that the economic and social cost of eliminating the polluting activity completely would be higher than the environmental benefits. Moreover, they realistically realize that the functioning of the political mechanisms would not in practice let such a draconian piece of legislation go through. Thus, they usually end up producing a balanced legal instrument, which confers the negatively affected party only partial protection, based not on administrative prohibition but on a stick-and-carrot approach (i.e. stipulating that the polluting firm will pay a compensation fee to specific, negatively affected private agents, and/or a tax to the community as a whole, and that these financial onuses will increase proportionally or progressively with the level of pollution). This approach is consistent with the classical Coasian approach to social choice: “We are dealing with a problem of a reciprocal nature...should A be allowed to harm B or should B be allowed to harm A? The problem is to avoid the more serious harm” (Coase 1960, p.2).

By the same token, GATT/WTO negotiators soon realized that a wanton prohibition on any kind of subsidy was neither economically nor socially and politically feasible. They therefore progressively created a multilateral legal system that provides only partial protection to the party subjected to the “adverse effects of subsidies. In this endeavour, according to Benitah’s interpretation, negotiators utilized legal techniques of “attenuation” of the negatively affected party’s entitlements: “it will be rare to find a situation where a practice is completely prohibited. One will generally find a technique which consists of permitting a practice but subjecting it to the obligation of avoiding certain effects” (p.18). As a result: “Each time an entitlement is granted to this party, we...note the presence of legal techniques intended to attenuate its scope...(although) the systematic use of such techniques...(presents) inherent dangers...the fact of having recourse to these techniques of attenuation goes hand in hand with the need for their clarification through a case law process”(pp.1-2).

³⁴ This asymmetry might cause a selection bias, if two different TPR reports were superficially compared. Paradoxically, country A, after having fully and exhaustively cooperated with the WTO Secretariat, might end up being penalized as excessively protectionist, while country B, which could not or did not wish to reveal the real extent of its subsidy programmes, would wrongly appear to be a virtuous free trader.

³⁵ As the WTO is the highest and—by now—virtually universal authority in the domain of international trade, the numerous and serious caveats recognized by the authors of the note indirectly suggest that there are vast and serious limitations on any independent researcher’s ability to comprehensively assess and quantify the pervasive phenomenon of the subsidization of service activities.

Subsidies appeared to be concentrated in four sectors: audiovisual services, air and maritime transport, tourism, and banking.³⁶ Subsidy programmes for audiovisual services were particularly relevant in developed countries, while subsidies to the tourism sector were enacted mainly in developing countries. They usually relied on tax holidays and other fiscal advantages, rather than on actual disbursement of public funds. Subsidies to transport and financial services (the latter often being of an emergency, ad hoc nature) were common in all types of countries.

In May, 2000, the WTO secretariat issued an addendum (WTO 2000a), which updated the contents of the 1998 note, utilizing information extracted from another 37 TPR reports published in the meantime. In the new sample, the policy patterns did not appear to be very different from those outlined two years previously. The three most subsidized services were still among those identified in the 1998 note: maritime transport, tourism and financial services. Tourism subsidy programmes, identified in 22 out of 37 countries, were particularly popular in developing countries. Audiovisual services and airlines, however, appeared to have lost some relative weight. A new trend appeared to be identifiable in the financial domain: besides emergency rescue interventions, strategic programmes aimed at developing the sector through tax incentives and/or offshore schemes were also widespread.

Box 4.2

The definition of R&D subsidies and the US negotiating position

During Uruguay Round negotiations on subsidies, the United States, in line with its traditional liberal philosophy, strove to expand the list of prohibited (red) subsidies. Yet it met strong resistance, especially on the part of the EU, which bargained hard to maintain a regime that explicitly allowed certain categories of subsidies, among them those for R&D. Negotiations on R&D subsidies centred around three sets of questions: the first set was definitional, the second was sectoral, and the third concerned how existing assistance programmes (including those being enacted in the United States) would be affected by the new multilateral regime.

Definitional questions focused on making explicit precisely what lay behind the acronym “R&D”. What is research? What is the difference between applied, basic, and experimental research? What is development? The US Advisory Committee for Trade Policy and Negotiations, in a 1990 report, argued that subsidies should be allowed for basic and experimental research and (with more limitations) for research projects in general, but that a harsher approach should be adopted for subsidies to development. Yet members of the Committee were themselves aware that to distinguish between the various phases of research and development is often not easy, and that depending on the sector or even on the specific project, the criteria to assess the degree of “basicness” of a specific activity might vary to a large extent, besides being perceived differently by the various stakeholders. A particularly delicate issue was the interpretation of footnote 29 of the Subsidies Agreement, which referred to the term “pre-competitive development activity”, which would include the creation of a “first prototype which would not be capable of commercial use”(quoted in Morris 1998, p.3).

Thus, further studies were recommended, but no agreed clear-cut conclusions were reached. US negotiators were quite sympathetic to the plight of American civil aircraft constructors, who complained about what they considered unfair competition on the part of heavily subsidized Airbus. However, they also gradually realized that excessively harsh regulation of subsidies could eventually jeopardize the survival of numerous large programmes already implemented in the United States. US trade representatives understood that the policy-supported cooperation between government and advanced industry was at the very core of the technological and economic dynamism of American society, and they feared that the mere process of complying with the publicity and transparency requisites foreseen by the WTO machinery would end up leaking strategic information to foreign competitors (Morris 1998, p.4).

³⁶ Out of 44 countries reviewed, 17 subsidized their audiovisual services, 14 their hotel and tourism sector, 13 their national airlines and many their maritime transport fleet. 18 countries assisted their banking sector.

A second addendum was issued by the end of 2000 (WTO 2000b). It took stock of the results of nine new TPRs. The new document confirmed the policy patterns previously observed: WTO members concentrate subsidies on tourism, maritime transport, and banking services. For clear political and fiscal feasibility reasons, foregone revenues in the form of tax concessions were more popular than direct grants.

In September 2002, the WTO issued a third addendum (WTO 2002), covering 24 new TPRs. In the introduction, the Secretariat noted that, as in previous similar exercises, the operational definition of subsidies to the service sectors included Governments' share purchases and similar equity transfers.³⁷ It also reiterated the problems often encountered in identifying subsidies' ultimate beneficiaries, taking into account that subsidies to many infrastructural services indirectly benefit all downstream users. Other problems stemmed from the fact that some subsidies are in fact targeted at services provided "in the exercise of governmental authority" (GATS Article 1:3(b)) and from the difficulty, in some cases, of ascertaining if the subsidized product is actually a service or a good. Even the sectoral policy patterns observed might to some extent stem simply from the fact that TPR reports tend to focus on tourism, maritime transport and banking. With all these caveats, WTO 2002 confirmed the main features of previously identified policy patterns in subsidizing services.

Box 4.3

Can Governments implement subsidy policies to support audiovisual services, according to multilateral trade discipline?

Due to their unique nature, audiovisual services deserve very special treatment in international trade discipline. Yet the "cultural exception" is not mentioned as such in major multilateral trade agreements, although they do contain specific provisions establishing special treatment for some forms of trade in all or some cultural goods and services (UNCTAD 2002). Actually, even the attribution of sovereignty on the matter of international trade in audiovisual services can be disputed. In fact, while there is no discussion on the full attribution to the GATT of jurisdiction on trade in most ordinary goods, opinions differ as to whether jurisdiction on audiovisual services should essentially be a prerogative of WTO or UNESCO or should somehow be shared by the two international organizations. The dispute is not purely academic. "WTO's orientation is towards the economic side of any issue...(while) UNESCO...adopted an increasingly sceptical approach to the role of the market in the production and diffusion of cultural goods and services (van Grassteck 2001).

From the point of view of comprehensive international legality, the attribution to either organization of clear-cut competencies on audiovisual services is not uncontroversial either. For instance, some UNESCO agreements on trade in cultural property, such as the 1970 Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property, while only secondarily trade-related and not obviously in contrast with WTO provisions, might in fact constitute grounds to restrict trade in cultural goods and services and hence also in audiovisual services. More recently, UNESCO has been emphasizing the need to promote "cultural diversity", combating the risks of worldwide cultural standardization. In this endeavour, UNESCO argues that cultural goods and services require differential treatment in multilateral trade discipline and a strong regulatory framework to support national cultural policies. From the vantage point of international trade proper, therefore, it is conceivable that future negotiations, and quite conceivably actual trade disputes on trade in audiovisual services, will see one or more of the parties involved invoking the alternative jurisdiction of UNESCO as opposed to that of the WTO. The non-exclusivity, at least in principle, of the WTO role in regulating trade in audiovisual services can actually be seen as a broad implication of the relevance of the "cultural exception" principle. In this respect, it is important to remember that subsidies are by far the most widely used instrument used by Governments—in both developed and in developing countries—to

³⁷ Such an inclusion had been criticized on the ground that Governments, in some cases, might mainly have targeted macroeconomic, rather than sectoral objectives. Yet, for the sake of consistency, the Secretariat deemed it preferable to continue applying the same methodology.

support the audiovisual industry. Bringing UNESCO into the picture is likely to strengthen the hand of negotiating parties opposing the introduction of new binding limitations to national States' flexibility in implementing subsidy policy in the audiovisual sector. Another two important trade agreements negotiated in the Uruguay Round, namely the GATT and the TRIPS, also have some implications for trade in audiovisual services. GATT, in particular, contains several exceptions inspired by the same need to preserve ample room for Governments to pursue their own cultural policies and to protect national audiovisual industries (Article IV, Article XIX, Article XX). However, neither GATT nor TRIPS norms specifically affect the acceptability of subsidy policies for supporting audiovisual industries.

Essentially, however—with the caveat represented by the uncertainties surrounding the role of UNESCO, the practical implications of which are difficult to foresee—international trade in audiovisual services, like trade in any other services, is presently disciplined by the GATS agreement. GATS, besides allowing the use of subsidies in services in general terms, contains various dispositions which—directly or indirectly—further widen the policy room for would-be subsidizers of audiovisuals. As stated in the main text, GATS Article I excludes services supplied in the exercise of government authority. In the domain of audiovisuals, more than in that of other services, Governments can plausibly claim to have the right and the obligation to protect and promote national culture, public morale and ultimately the supreme interests of the country. They are therefore entitled to support domestic film productions or TV and radio programmes, for instance, using instruments such as fiscal incentives, grants, soft loans and other financial subsidies, and public enterprises. Article VIII allows, in general terms, the existence of monopolies and the establishment of new ones. Thus, countries have ample policy room to establish new monopolies, or to re-establish previously abolished ones, as can be the case for deregulated TV services. Under a state monopoly regime, any kind of subsidy to public TV broadcasting would, of course, be quite acceptable. GATS Article XII allows government procurement to foster the national production of audiovisual services. For instance, a government-owned TV station might buy exclusively or preferentially domestically produced programmes, indirectly subsidizing national producers. Still other GATS articles could be invoked by government to protect the national audiovisual industry, not by means of subsidies but through more rudimentary policy tools. Article XIV contemplates an exception to allow measures “necessary to protect public morals or to maintain public order”. Article XIV bis states that: “Nothing in this agreement shall be construed...to prevent any member from taking any action ... for the maintenance of international peace and security”. Article XVII states (in a note) that national treatment obligations should not be interpreted as a duty, on the part of members, to compensate for “inherent competitive disadvantages which result from the foreign character of the relevant service or service suppliers”. According to the European Union, this applies to situations where nationals prefer not to buy foreign services for linguistic, cultural, religious, or for other reasons. Such an exception is likely to be applicable in a particularly straightforward and broad fashion to audiovisual services, as demand for these services is strongly determined by linguistic and cultural factors.

5. SUBSIDIES IN THE AREA OF SERVICES IN DEVELOPING COUNTRIES: A NECESSARY POLICY TOOL IN AN ASYMMETRIC WORLD

The content of the preceding sections can be summarized as follows. Section 1 shows that Governments use several different policy instruments to implement subsidy programmes, many of which are indirect in nature. Attempts to evaluate the magnitude of subsidies and, *a fortiori*, estimate their sectoral, macroeconomic and international impact therefore face a number of theoretical and practical difficulties. Section 2 argues that, although it has long been recognized by economic theory that subsidies are frequently suboptimal, inefficient, and even counterproductive, there are powerful factors belonging to the sphere of political economy which tend to perpetuate and enlarge existing subsidy programmes and favour the emergence of new ones. It also highlights the fact that subsidies for services, and for some crucial service activities (such as R&D), can play a very important role as policy tools aimed at increasing the productivity and competitiveness of national economies. Section 3 shows that subsidies for services are huge, both in the North and in the South. However, due to unequal financing capabilities and different policy priorities, there are major differences in both the absolute and the per capita levels of subsidization of key service sectors between developed and developing countries. Section 4 summarizes and interprets the evolution of the

treatment of subsidies over the various rounds of multilateral negotiations on international trade. It concludes that the issue of subsidies remains controversial and, to some extent, an ambiguous and unsettled one in the context of present multilateral trade diplomacy. It also argues that GATS and other WTO agreements, so far, effectively shield services from most of the binding norms limiting Government's capacity to implement subsidy policies at will.

Taking stock of these findings, it is apparent that the question of subsidies acquires a very different dimension in developed countries on the one hand and in developing countries on the other. Moreover, the international community still does not sufficiently recognize this asymmetry. In developed countries, subsidies are mainly used to pursue social, distributional and environmental goals in the domestic realm and as strategic trade policy tools (aimed primarily at overcoming foreign competitors of comparable technological strength) in the international arena. In developing countries too, subsidies are used both for social and economic purposes, but their role is at the same time more crucial and more delicate than in developed countries. It is more crucial because the need for subsidies is far more pressing than in developed countries, and few, if any, alternative policy tools are available to developing countries' policy-makers, due *inter alia* to relative institutional underdevelopment. It is more delicate because in developing countries little money tends to be available in government coffers (or even in citizens' pockets), the whole economic structure is fragile, information and data are scarce and not always reliable, and fine-tuning of proactive interventions is difficult to achieve. In developing countries, therefore, wrong, overstretched or simply poorly tailored and imperfectly targeted subsidy policies can cause major distortions, severe financial crises, and long-lasting economic damage, much more so than in developed countries. Still, according to many observers, practitioners and policy makers, history shows that factors such as the very underdevelopment of market forces, institutions and national private economic agents make exclusive reliance on *laissez-faire* a very poor option for less advanced countries striving to achieve economic and social development, to catch up progressively with the industrialized world and to consolidate national sovereignty. According to this widely shared view, a certain level of interventionist, proactive industrial policies, which usually entail the implementation of selective subsidy policies as a key component, is a key ingredient of any development strategy, as it was, for instance, for the United States, continental Europe and Japan in other historical periods (Chang 2002). Governments in developing countries are therefore engaged in a very difficult game—designing subsidy policies to support development goals while doing more with less, i.e. to fulfil a more essential and strategic policy task than in the case of their counterparts in the industrialized world, with fewer resources and less room for error.

The same fundamental argument applies to the use of subsidies for social rather than development purposes. Subsidizing health, education, energy and other vital activities is far more crucial for the fulfilment of basic human needs in the developing than in the developed world, yet the resources available are meagre.

From a sectoral point of view, it is becoming increasingly clear that the emphasis of support policies in developing countries, which might require the implementation of various types of subsidies—be they earmarked for private or mixed agents or for governmental agencies responsible for direct public provision—should be increasingly shifted towards services rather than agricultural or industrial activities. Services, in fact, bear a large and still untapped development potential in most developing countries, a potential that can directly bring about important competitiveness and trade gains (as in the case of services such as tourism or of the

mushrooming new services based on advanced information technologies). Even more importantly, the simultaneous achievement of social and economic objectives can result in huge long-term gains for a country as a whole. The huge pay-off of early investment in education in a country like the Republic of Korea, or the more modest but important contribution of the traditionally prioritized health sector to Cuba's balance of payments, are only two among many examples. Moreover, in practical terms, the evolution of international trade rules is expected to make it increasingly difficult to strengthen, or even maintain, existing subsidy programmes in the domains of agriculture and industry (for both developing and developed countries), while there is still plenty of room for subsidy policies in virtually all services sectors. In this respect, it is important to ensure that the international community confirm and implement the right of developing countries to be granted special, differential and more favourable treatment to enact subsidy policies to support service activities. The present high degree of freedom in utilizing subsidy policies in the domain of services should be maintained only for developing countries, while the possibility of implementing subsidy programmes should be progressively restricted in developed countries. Developed countries should genuinely accept special and differential treatment as the building block of any present and future negotiation on subsidies, not only on the basis of fairness and realistic recognition of the weight of major structural differences between them and the developing world, but also, consistent with the principle of enlightened and precautionary self-interest, to avoid the risk of a gradual loss of credibility and acceptability for the multilateral trade system as a whole.

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