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ABBREVIATIONS AND SYMBOLS

AGOA	African Growth and Opportunity Act
AMS	Aggregate Measurement of Support
AoA	Agreement on Agriculture
ATC	Agreement on Textiles and Clothing
AWB	Australian Wheat Board
BIS	Bank for International Settlements
BOP	Balance of Payment
c.i.f	cost, insurance and freight
CAFTA	Central American Free Trade Agreement
CAP	Common Agricultural Policy
CBO	Congressional Budget Office
CCC	Commodity Credit Corporation
CFAF	Communauté Française Africaine Franc
CFM	Central Fish Market
CFP	Common Fishery Policy
CGE	Computable General Equilibrium
CIS	Commonwealth and Independent States
CITA	Committee on the Implementation of the Textiles Agreement
CNCAS	Caisse Nationale de Crédit Agricole du Sénégal
CO ₂	Carbon Dioxide
CRTC	Canadian Radio-television and Telecommunication Commission
CSE	Consumer Support Estimate
CWB	Canadian Wheat Board
EAGGF	European Agricultural Guidance and Guarantee Fund
EAO	European Audiovisual Observatory
EAS	Essential Air Service
ECU	European Currency Unit
EDB	Environmental Database
EPZs	Export Processing Zones
EU	European Union
EWG	Environmental Working Group
EXIM	Export-Import Bank of the United States
f.o.b	free on board
FAC	Food Aid Convention
FAO	Food and Agricultural Organization
FAOSTAT	Food and Agricultural Organization Statistics Division
FDI	Foreign Direct Investment
FPE	Fonds de Promotion Economique
FY	Financial Year
GAO	General Accounting Office
GATS	General Agreement on Trade in Services
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
GFS	Government Finance Statistics Yearbook
GFT	Government financial transfers
GSSE	General Services Support Estimate
GSTP	Global System of Trade Preferences
GTAP	Global Trade Analysis Project
IEA	Institute of Economic Affairs
IEFR	International Emergency Food Reserve
IMF	International Monetary Fund

IMO	International Maritime Organization
IRCC	Import Rebate Credit Certificates
ISPS	International Ship and Port Facility Security
IT	Information Technology
ITS	International Trade Statistics
LDCs	Least-Developed Countries
MDC	Multimedia Development Corporation
MFI	Microfinance institutions
MFN	Most-Favoured-Nation
MIDP	Motor Industry Development Program
MITI	Ministry of International Trade and Industry
MOU	Memorandum of Understanding
MPS	Market-Price Support
MSC	Malaysian Government's Multimedia Super Corridor
NACC	National Accounts Statistics
NAFTA	North American Free Trade Agreement
NASA	National Aeronautics and Space Administration
NEXI	Nippon Export and Investment Insurance
NTT	Nippon Telephone and Telegraph
ODA	Official Development Assistance
OECD	Organization for Economic Co-operation and Development
OPEC	Organization of the Petroleum Exporting Countries
PC	Productivity Commission
PFC	Production Flexibility Contracts
PPP	Purchasing Power Parity
PRPO	Protracted Relief and Recovery Operation
PSE	Producer Subsidy Equivalent
R&D	Research and Development
R&LF	Royalties and Licence Fees
RPA	Rural Payment Agencies
S&D	Special and Differential Treatment
SACE	Servizi Assicurativi del Commercio Estero
SCM	Subsidies and Countervailing Measures
SME	Small and Medium Enterprises
STE	State Trading Enterprises
STIC	Standard International Trade Classification
TPR	Trade Policy Reviews
TRIA	Terrorism Risk Insurance Act
TSE	Total support estimate
UNCTAD	United Nations Conference on Trade and Development
UNEP	United Nations Environment Programme
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
UNSD	United Nations Statistics Division
US	United States
USF	Universal Service Funds
VLSI	Very Large Scale Integration
WFP	World Food Programme

The following symbols are used in this publication:

...	not available
0	figure is zero or became zero due to rounding
-	not applicable
\$	United States dollars
€	euro
Q1,Q2,Q3,Q4	first quarter, second quarter, third quarter, fourth quarter

EXECUTIVE SUMMARY

The World Trade Report 2006 begins with a short summary of salient trends in international trade based on the Secretariat's earlier Report issued in April. We also provide brief analytical commentaries on certain topical trade issues, which this year cover recent trends in trade in textiles and clothing, an examination of the evolution of international royalty and fee payments, developments in the trade of least-developed countries, and an analysis of the effects of natural disasters and acts of terrorism on international trade flows. The core topic for analysis in WTR2006 is subsidies. The Report explores this area of policy in terms of how subsidies are defined, what economic theory can tell us about subsidies, why governments use subsidies, the most prominent sectors in which subsidies are applied, and the role of the WTO Agreement in regulating subsidies in the context of international trade.

I RECENT TRADE DEVELOPMENTS AND SELECTED TRENDS IN TRADE

Trade developments in 2005

The deceleration of global trade expansion observed since mid 2004 was arrested and reversed in the second quarter of 2005. The yearly real growth of world merchandise exports averaged 6 per cent in 2005 after outstandingly strong growth of 9.5 per cent in the preceding year. The largest net-oil-importing developed traders, the EU(25), United States and Japan, recorded a particularly strong slowdown in their import growth. China's imports expanded far less rapidly than in the preceding year, despite a vigorous economy. Regions and countries exporting fuels and other mining products, which benefited strongly from relative price developments, expanded their imports sharply. According to provisional data, the Commonwealth of Independent States (CIS), South and Central America, Africa and the Middle East expanded their imports at least two times faster than world trade.

Large variations of relative prices had a major impact on nominal trade developments in 2005. The prices of fuels and metals rose by about one-third in 2005, while the prices of many agricultural products and manufactures increased only moderately or stagnated. Prices for global merchandise trade increased on average markedly less than in the preceding year, largely due to the deceleration of prices for manufactured goods, which account for about three-quarters of merchandise trade.

The large shifts in relative prices over the last two years lifted the share of fuels in total merchandise trade to a twenty-year high in 2005. At the same time, price developments accentuated the long term downward trend in the share of agricultural products, which fell to a historic record low of less than 8 per cent. In the early 1950s, the share of agricultural products exceeded 40 per cent in world merchandise trade.

World merchandise exports rose 13 per cent and exceeded for the first time the US\$10 trillion mark. Oil market developments were the principal factor leading to the sharp rise in the exports of Africa, the CIS and the Middle East. In 2005, Africa and the Middle East recorded their largest share in world merchandise exports since the mid-1980s. Europe, the largest trader among the major geographic regions, recorded by far the weakest export and import growth in 2005. North America's nominal trade growth decelerated moderately and rose roughly in line with global trade. Merchandise trade growth of the Asian region exceeded on average that of global trade, but large variations in export performance could be observed between China and the other leading traders in Asia.

Commercial services exports rose by 11 per cent, to US\$2.4 trillion in 2005. This expansion in dollar values was markedly less than in the preceding year, but still somewhat above the average growth of the 2000-05 period. Commercial services trade in Asia expanded faster than the global average, while North America's services lagged slightly behind. Europe's commercial services exports rose by 7 per cent in 2005, less than half the rate in the preceding year. Most of this year-to-year deceleration in Europe's services trade is attributable to exchange rate developments between European currencies and the US dollar over the last two years.

Trends in trade in textiles and clothing

International textiles and clothing trade entered a new phase after the expiry of the Agreement on Textiles and Clothing in 2005. This implies likely long-term structural changes, but overall market conditions did not change much in the EU and the United States in 2005.

The phase out of textiles and clothing quotas is likely to accentuate underlying trends towards the replacement of domestic production in high-income countries by suppliers from lower-income countries, in particular China. However, the removal of quotas had a limited additional impact on textiles and clothing production, employment and price levels in the EU and the United States in 2005. This is explained partly by the fact that the sharply increased imports from some suppliers were partly offset by reduced supplies from the high-income East Asian economies and new export restraints on China's sales into those markets. With the exception of EU clothing output, production declines observed in preceding years continued without any deepening at the aggregate level. The decline of employment in the textiles and clothing industry did not accelerate, and prices of textiles and clothing in the EU and the United States largely remained flat, as in preceding years.

However, shares in sales of textiles and clothing products to the US and EU markets changed in 2005.

Shipments to the EU and the United States by some major suppliers that had benefited from the ATC quota system were partly displaced by increased supplies from other sources, in particular China, India, Turkey and Bulgaria. High income developing economies in East Asia recorded strong double-digit declines in their shipments to both the EU and US markets. While most of the preferential suppliers tended to lose market share, large variations in the development of shipments could be observed. In the US market, suppliers from AGOA and NAFTA recorded strong decreases in their shipments in 2005. Imports from Sub-Saharan Africa, Morocco and Bangladesh to the EU(25) decreased markedly in the first ten months of 2005.

Developments in international royalties and licence fee payments, 1995-2004

The pattern of international receipts and payments of royalties and licence fees has changed somewhat over the last decade. The developed countries remain dominant (albeit with shifting shares) in terms of both receipts and payments, while East Asian countries have become more prominent, in particular on the payments side.

Global receipts (and payments) of royalties and license fees are estimated to have expanded faster than world commercial services exports over the 1995-2004 period, accounting for 5 to 6 per cent of world commercial services trade in 2004. The dominating share of the United States in global royalty and licence fee receipts has decreased as the EU and Japan have expanded their income from this source faster than the United States. Royalty and licence fee payments still take place largely among the developed countries. Japan became a net earner in this services category from 2003, as a result of increased overseas investment.

Royalty and licence fee payments are made largely among affiliated companies. This explains why payments by East Asian economies are relatively strong, reflecting a high level of foreign direct investment and integration into global production networks. Among developing countries, Singapore, China and the Republic of Korea have sharply increased royalty and licence fee payments in recent years. Aggregate payments from these three countries have exceeded those of Japan since 2003. Royalty and licence fee payments by developing countries outside East Asia accounted for less than 4 per cent of global payments in 2004.

Developments in the trade of least-developed countries, 1995-2004

Least-developed countries (LDCs) have increased their share of world trade in recent years, but still account for a very small portion of total trade. Exports are highly concentrated among a few LDCs. Developing countries are importing a growing percentage of LDC exports.

Participation of LDCs in world merchandise trade has increased in absolute terms since 1990, with an especially sharp increase in the past three years. Despite this strong record, LDCs as a group accounted for only 0.6 per cent of world exports and 0.8 per cent of world imports in 2004. The trade profile of LDCs varies considerably across countries. Two LDCs account for 35 per cent of all LDC exports. In contrast, the 13 last-ranked LDCs

in terms of export value accounted for less than 1 per cent of total LDC exports in 2004. Lack of product diversification continues to be a problem for most LDCs.

An interesting development in LDC trade is the gradual reduction in the importance of developed country markets for LDC exports. In 1995 the EU(15) and the United States accounted for almost 60 per cent of total LDC exports. In 2004 this figure dropped to 52 per cent, and China is now the third largest market for LDC exports.

Achieving duty-free and quota-free market access in developed country markets for all products originating from LDCs has long been an aspiration of the international community. Progress is being made in developed countries and some developing countries, but a good deal remains to be done.

To date, the objective of duty-free and quota-free market access for LDCs has yet to be reached, despite the increased impetus arising from the Millennium Development Goals. Based on 2003 data, 27.6 per cent of total LDC exports remain dutiable. Developed countries account for 61 per cent of this total and developing countries for the remaining 39 per cent.

The United States and Japan account for the lion's share of dutiable LDC exports, at 53 per cent and 7 per cent respectively. In the case of Japan, 90 per cent of the dutiable figure is represented by imports of oil, which attract an *ad valorem* equivalent duty of less than 1 per cent. Further analysis of the US situation shows that six LDCs (Bangladesh, Cambodia, Laos, Maldives, Myanmar and Nepal) accounting for 37 per cent of the total imports, also account for 92 per cent of total dutiable imports. Annex F of the Sixth WTO Ministerial Declaration contains a pledge from developed WTO Members to provide duty-free and quota-free market access to LDCs by 2008. If some Members face difficulties in meeting this objective, they have pledged to provide duty-free and quota-free market access for at least 97 per cent of the products in their tariff schedule.

Market access conditions for LDC exports in developing country markets are determined by the profile of MFN tariffs, since only a few developing countries, such as China, provide non-reciprocal market access. Some developing countries have argued for invigorating the Global System of Trade Preferences (GSTP), which envisages trade preferences among developing countries. A new round of GSTP negotiations was launched at UNCTAD XI in Brazil in 2004. The process of carrying these negotiations forward has yet to start.

The impact of natural disasters and terrorist acts on international trade flows

An analysis of the impact of recent natural disasters suggests that while human suffering and localized damage can be very considerable, and the immediate effects on particular industries notable, the economy-wide impact of these events on trade and growth is short-term and generally minimal.

The impact of natural disasters on international trade flows depends on how large the tradable sector is in the devastated area and how integrated it is with the global economy. At the national level, there could be additional indirect effects if macroeconomic activity weakens as a consequence of a disaster. Exports may fall because the physical damage caused by the disaster severely disrupts production in some major export sectors. Production facilities may be shut down, important inputs may be in short supply, major utilities may be disrupted or there could be transportation bottlenecks. However, imports may rise to make up for shortages in local production. And reconstruction efforts may also require significant amounts of foreign goods or services which would tend to increase imports. Overall, the impact of a disaster on international trade will tend to be localized and temporary.

These conclusions seemed to be confirmed by the experience with the Indian Ocean tsunami that occurred in late December 2004 and Hurricane Katrina, which hit the United States in August 2005. The Indian Ocean tsunami badly affected five countries – India, Indonesia, Maldives, Sri Lanka and Thailand – and left hundreds of thousands dead or missing. But the macroeconomic impact has not been discernible. Only in the case of the Maldives, the smallest of the affected countries, is growth expected to decline in 2005 from the pre-tsunami forecast. Merchandise trade has continued to grow in 2005 in four of the most affected countries, and at double-digit rates in some countries.

Although there was initially a lot of concern about the effect on tourism, the latest assessment points to a less gloomy picture. For the first nine months of 2005, international tourism arrivals actually increased in Sri Lanka compared to the same period in 2004. In the case of Thailand, for the first six months of 2005, international tourism arrivals were only down by 6 per cent. Only in the case of the Maldives has the impact been severe. In all these destinations, the main constraint does not appear to be a reluctance of foreign tourists to return to the region. Rather, the pace of reconstruction has lagged the resurgence in demand.

The combined losses of Hurricanes Katrina and Rita are likely to even be larger than the damage wrought by Hurricane Andrew and the 11 September 2001 terrorist attacks. Based on estimates by the US Congressional Budget Office, the value of capital stock destroyed by Katrina and Rita will total between US\$70 billion and US\$130 billion. But there did not seem to be a discernible impact on US economic growth, which rose to 4.1 per cent in the third quarter, about a full percentage point higher than growth in the second quarter.

One of the immediate concerns was the impact on the energy sector as nearly 2 per cent of global crude oil supply comes from the Gulf of Mexico. Crude oil prices jumped to over US\$70 a barrel while gasoline prices in some parts of the United States surged past US\$3 dollars a gallon. However, this peak was not sustained and oil prices have drifted downward from their levels in late August and early September. There has been some impact on the volume and value of US petroleum imports but they remain quite small relative to the annual value of US imports.

Terrorist acts tend to affect particular industries, especially tourism, but the effect is generally localized and temporary. Trade costs may rise as a result of concerns about terrorism, but many governments are taking measures to mitigate this effect.

International terrorism appears to be one of the greatest concerns of the international community at present. Besides the immediate losses, the bombings in Madrid, London and Bali particularly affected individual industries, such as tourism and retail, albeit only temporarily. These events do not appear to have had lasting consequences for the countries' overall trade and economic growth.

If terrorist risks persist, transaction costs of international trade will increase, mainly via higher insurance premiums and tightened security measures at borders, ports and airports. The overall impact of a given increase in transactions costs on a country's trade depends on its trade openness, its principal trading partners, the composition of traded goods and services and their respective modes of delivery. For instance, according to one study, value shares of transport and insurance costs may range from about 1 per cent for pharmaceuticals to more than 23 per cent for crude fertilizers. The export of services, such as education, may become more difficult, for instance due to actual or perceived difficulties in obtaining visas.

Following recent terrorist acts, insurance and reinsurance carriers imposed widespread terrorism exclusion clauses. In response to higher premiums and excess demand, a range of private-public terrorism (re-)insurance schemes were created in a number of countries offering more extensive coverage. Ongoing concerns about international terrorism have also led to longer delivery times of traded commodities and to additional costs related to specific security measures, especially in the airline industry and in maritime transport. However, international cooperation to ensure security while minimizing trade impacts has intensified, and numerous initiatives have been taken, such as the creation of computer systems to obtain fast-track clearance in ports.

II SUBSIDIES AND INTERNATIONAL TRADE

Governments use subsidies for many reasons, some easier to understand and defend than others.

Subsidies are applied to build infrastructure, to help struggling industries or foster new ones, to promote research and develop new knowledge, to redistribute income, to help poor consumers, and to meet a range of other policy objectives. Economic analysis tells us that some of these objectives can be addressed most efficiently with subsidies. Theory also tells us that subsidies can distort trade flows if they give an artificial competitive advantage to exporters or import-competing industries. Decisions about what to subsidize often involve technical complexities about which governments lack adequate information. Whether a subsidy is considered a desirable

intervention for correcting a market failure or pursuing a social objective, or as an undesirable trade distortion depends sometimes upon who is making the judgement. But economic analysis ought to be able to help in understanding why subsidies are applied, determining the desirability of subsidies from a welfare perspective, and assessing the merits of alternative forms of intervention. When governments decide to grant subsidies that have little to do with efficiency considerations, economic analysis based on welfare analysis may be of limited use. In such cases, the analysis is probably most helpful in ensuring that policy-makers are aware of the costs of pursuing particular objectives and of alternative, lesser-cost ways of doing so.

From an international trade perspective, concern among trading partners about subsidy practices rises in direct proportion to the extent that such interventions are seen as having specific trade effects in a given sector – that is, subsidies that impart an advantage to beneficiaries which constitutes a competitive threat in an internationally contested market. Whether or not such subsidies could be justified in terms of national welfare, the fact remains that if their trade effects are perceived as being too severe in the marketplace, they will likely attract a reaction that would nullify any value from granting subsidies. The WTO subsidy rules attempt to balance the potential tension between the right to use subsidies and the imperative that such subsidies are not too disruptive or distorting in terms of international trade.

How to define subsidies

Subsidies are notoriously difficult to define. Definitions are typically tailored to specific purposes and they vary considerably in terms of scope.

No common, authoritative definition of a subsidy exists. Subsidies may involve budgetary outlays by governments. They might rely on regulatory interventions with no direct financial implications for the government budget. They could constitute public provision of goods or services at less than market prices. Or they may simply be thought of as the consequence of any government intervention that affects relative prices. Definitions used in the literature and by national and international authorities tend to be determined by the purpose at hand. Most definitions of subsidy, however, entail a transfer from the government to a private entity that is “unrequited” – that is, no equivalent contribution is received in return.

Subsidy definitions often distinguish between categories of recipients, such as producers and consumers, or nationals and foreigners as recipients. Subsidy programmes might also limit subsidization to certain subgroups within these categories. The more narrowly defined the group of (potential) beneficiaries, the more “specific” a subsidy programme is considered to be. Subsidy programs with a wide range of (potential) beneficiaries, instead, are often referred to as “general” subsidies.

The most complete standardized information on subsidies is provided in national accounts statistics for which country data are available worldwide. The national accounts statistics define subsidies in a rather narrow way, including only direct payments to resident enterprises. Other popular data sources define subsidies more broadly. This is the case, for example, for the “producer subsidy equivalent” (PSE) measure developed by the OECD to quantify domestic support to agricultural producers. The WTO Agreement on Subsidies and Countervailing Measures defines a subsidy to include a public financial contribution that confers a benefit to the recipient. The basic element of most subsidy definitions – an unrequited transfer by government – is thus contained in the WTO definition. The WTO definition takes a broad approach in respect of possible forms of subsidy, including direct payments, tax concessions, contingent liabilities and the purchase and provision of goods and services (with the exception of the provision of general infrastructure). The definition excludes regulatory measures or other policies, like border protection, that do not consist of government resource transfers. Another key feature of the WTO subsidy definition is the notion of “specificity”, i.e., only subsidies with a limited beneficiary set are subject to the WTO subsidy rules.

Economic analysis of subsidies

Economic analysis helps us to disentangle the various effects that subsidies may have on beneficiaries, non-beneficiaries and the economy as a whole. In particular, the analysis helps us to understand the effects of subsidies on trading partners.

Under the simplifying assumption of perfect markets, where no market imperfections or market failures are present, it is easy to show that like most other interventions, a subsidy carries net welfare costs and is undesirable from the perspective of the country providing the subsidy. When market distortions exist, as they generally do in the real world, subsidies might be justified on certain grounds. The Report examines two types of market failure – economies of scale and positive production externalities – and illustrates how governments can use subsidies to improve domestic welfare. However, the Report also recognizes that decisions on subsidies may wholly or partly reflect the response of elected officials to the demands of various interest groups, whose political support may be crucial for political success.

The magnitude and nature of the trade effects of subsidies depends in part upon whether or not the subsidizing country is large enough to affect the world price. If this is not so, quantities in the market will change but not prices. Production subsidies to import competing industries result in a contraction of world trade volumes as imports are displaced by domestic production. In contrast, export subsidies will expand world trade as more domestic production is sold on the world market. If the subsidizing country is large enough both policies will tend to result in a price decline. Although this is not necessarily the case when governments support industries characterized by economies of scale (e.g. R&D intensive industries). Subsidies in such cases may lead to excessive entry, resulting in increased consumer prices because producers cannot produce at a sufficiently large scale.

Government may intervene via taxes and subsidies when the market allocation of resources is not consistent with predefined social objectives. In this case, the resource cost of the intervention needs to be balanced against the achievement of the predefined objective. Sometimes a subsidy can be shown to be the least resource-cost instrument available. For example, a tariff could be used to achieve a specified output objective by raising domestic prices and inducing producers in the protected market to increase output. Domestic consumers would suffer a welfare loss because of higher prices in the local market. If instead of a tariff, a production subsidy were provided to domestic producers, domestic output would increase, but domestic consumers would not have to pay a higher price.

Why governments subsidize

Among the policy objectives for which governments have applied subsidies are industrial development, innovation and strategic promotion of industries, adjustment to changed economic circumstances, redistribution of income or purchasing power, environmental protection, and certain non-economic objectives. The Report discusses these objectives in terms of alternative policy approaches and in relation to economic efficiency and other considerations.

Industrial development

Subsidies aimed at promoting industrial development might be justified because of poorly functioning markets in relation to information barriers and coordination problems.

Policy makers in developing countries often consider subsidies to be a useful tool to develop certain industries, with industries in this context referring to activities in the agriculture, industry or services sectors. This development objective has often been linked to the so-called infant-industry argument, i.e. the view that in the presence of more developed countries, less developed countries cannot develop new industries without state intervention. While informational barriers to market entry and learning “spillovers” among producers underlie the most familiar variant of the classic infant-industry argument, information problems faced by consumers and lenders in capital markets have also provided arguments for interventions in support of infant industries. Coordination problems can arise in the presence of interdependent investments related to vertical linkages in production, large scale economies and restrictions to trade.

The theoretical case for government subsidization in the presence of knowledge spillovers that arise from learning-by-doing is fairly straightforward. The controversy over this variant of the infant-industry argument centres on empirical and practical matters. While learning-by-doing or knowledge spillovers are often assumed to be pervasive, available evidence is relatively scarce and does not provide a very clear picture. The small

existing body of work on the estimation of learning effects suggests that the importance of such spillovers is likely to differ between industries.

Recent theoretical and empirical research on industrial development policy has focused on a market failure related to informational externalities in the entrepreneurial process of discovering new profitable investment opportunities. In the presence of such informational externalities, laissez-faire leads to underprovision of “discovery” and governments need to encourage investment in new activities *ex-ante*, but impose discipline and stop unproductive activities *ex-post*. A comparison of various types of interventions suggests that trade protection is not an efficient way of promoting self-discovery while subsidies and government loans and guarantees have benefits and costs.

The prevalence of informational asymmetries in capital markets has been used to justify government interventions in those markets and, in particular, credit subsidies. The arguments here are not straightforward. Governments may not be in a position to correct the failures when it is difficult if not impossible to identify the appropriate intervention *ex-ante*. Subsidies can only be shown to be efficiency-enhancing under specific assumptions regarding the precise nature of information asymmetries. Under alternative assumptions, the appropriate intervention can be shown to be an interest rate tax.

When it comes to coordination failures that affect economic decision-making, a subsidy is not the best policy because all the relevant investments, if they are made, will be profitable. The purpose of the government’s intervention in this context is to ensure that all the desirable interrelated investments are indeed made. This can be achieved through pure coordination or perhaps through *ex-ante* subsidy schemes.

Much of the discussion regarding the merits of industrial development policies has focused on the administrative and fiscal feasibility of government interventions, their informational requirements, and their political economy consequences. Economists typically agree on the theoretical case for government intervention in the presence of certain market failures. There is some disagreement regarding the empirical relevance of the cases that have been identified. However, there is a clear divergence of views on the feasibility issue. While mainstream economists tend to consider that selective interventions require a considerable amount of information and skills, other economists argue that such problems should not be exaggerated. They believe that good decision making by governments necessarily involves making mistakes.

Export promotion policies are seen by many as preferable to import substitution policies in the pursuit of industrial development.

A survey of the industrial policy literature indicates that from the point of view of implementation, export promotion has some advantages compared to import substitution. The first is that chances to pick an industry where the country has a comparative advantage are better. The second is that the costs of subsidies, which show up in budgets, are more transparent than those of tariffs. A third argument is that export performance is a criterion not too amenable to rigging by firms or their bureaucratic counterparts.

A particular form of export support is the use of export processing zones. Export processing zones (EPZs) have been established over decades and today significant shares of developing countries’ manufactured exports originate in EPZs. An EPZ refers to one or more areas of a country where barriers to trade are reduced and other incentives are created in order to attract foreign investors. The incentives provided differ in nature and can change over time, but many or most take the form of fiscal measures – tax reductions or exemptions rather than cash. Whether EPZs represent a cost-efficient policy instrument to pursue industrial development is highly questionable. While many observers agree that some examples of successful EPZs exist, there are certainly also examples of EPZs creating distortions that are harmful to an economy.

Some political economy literature suggests that a rules-based policy regime which entails high degrees of pre-commitment reduces the costs associated with discretionary behaviour by government officials, that predictable policies help direct the private sector in the desired direction, and that policies that create rents also create rent seekers. For some economists, the “public choice” literature tends to conclude that policy

interventions should be avoided and the role of the government should be minimized. Others would argue that government capabilities can be improved, that the degree of selectivity can be adapted to the level of capabilities and that governments can be helped to intervene efficiently.

Empirical research is not conclusive on many issues surrounding industrial development policy, leaving room for competing interpretations of how successful such policies have been and what other factors have contributed to successful industrial development.

The experiences of East Asian economies with industrial policy, and whether these might teach any lessons to other developing countries, figure prominently in the debate about the role of government intervention in industrial development policy. Early explanations of the growth performance of the Republic of Korea and Chinese Taipei emphasized the importance of “getting the fundamentals right” and outward orientation with few price distortions. In the 1980s, however, several scholars pointed out that these two, the Republic of Korea and Chinese Taipei, had also used selective interventions, such as incentives to individual sectors, restrictions on trade and inward foreign direct investment, and tight control of the financial sector.

In 1993, in a report entitled “The East Asian Miracle”, the World Bank proposed a compromise interpretation. It acknowledged the importance both of managing the economic fundamentals effectively and pursuing export-push strategies. Partly catalyzed by this work, an enormous amount of empirical research on the effect of selective industrial policy has since been conducted. One interpretation of the evidence is that on balance, the results indicate that industrial policy made a minor contribution to growth in Asia. Another interpretation is that industrial policies have played a role in most non-traditional export success stories in East Asia.

Supporting the production of “knowledge” goods

Governments use subsidies to support research and development that creates new knowledge in order to capture the positive spillovers inherent to knowledge creation.

The private sector is unlikely to invest as much in research and development (R&D) as would be desirable from a national standpoint for two reasons. First, if large investments in R&D are a prerequisite of production in an industry where economies of scale are present, production may not be profitable for a private company but nevertheless beneficial from a social perspective. Empirical research confirms the relevance of this argument in practice. It has been shown that consumer benefits from major new innovations have been quite large in comparison to the research costs borne by the innovators.

Second, R&D support can be justified on the grounds that knowledge has public-good characteristics that make it likely the social benefits of new knowledge exceed the benefits that a private sector investor in R&D would be able to appropriate. In other words, R&D may well generate positive externalities and governments may need to supplement resources devoted to creating knowledge. Economists only have a partial understanding of the precise nature of R&D spillovers and no consensus exists on the most appropriate kind of policy intervention in this area.

An alternative approach to capturing the spillover effects of R&D is to grant firms temporary monopolies through the intellectual property system. But governments may still be justified in directly supporting some R&D expenditure.

Rather than seeking ways of directly subsidizing R&D, the intellectual property rights system is usually relied upon by governments to encourage firms to invest in knowledge creation. A patent, for example, guarantees its owner the sole use of a patented invention during a specified period. This conferred monopoly right ensures higher returns on investments made in creating knowledge. Once the patent expires the underlying knowledge can be used by others. To a large extent, the length of the period of patent protection will determine whether an appropriate balance has been struck between encouraging investment in R&D and allowing society to benefit from R&D-generated knowledge spillovers. In the global economy, an intellectual property protection regime needs to be international to maintain the incentives for R&D investments.

An intellectual property regime may not internalize all knowledge spillovers, implying that investment in R&D could still be too low from society's perspective. This situation might occur where scale economies are sufficiently large to make the magnitude of the initial investment too large to be undertaken by individual enterprises. High initial fixed costs may, therefore, provide a reason for governments to subsidize R&D activities notwithstanding the existence of an intellectual property protection setup.

The economic literature does not provide a unanimous answer on the question whether general R&D policies are preferable to R&D policies that target certain industries or geographical areas.

Governments that decide to support R&D face the difficult question of how to do so. In particular they need to decide whether R&D support should have a general or specific character. The literature is not unanimous on this point. There is some agreement, however, that location and proximity matter in exploiting knowledge spillovers. As a result, many governments have in recent years encouraged the creation of regional innovation clusters as a means to stimulate innovation. Only a limited number of such clusters have been successful, suggesting the difficulty of designing successful clusters from scratch. General R&D policies that aim at raising the economy-wide level of research expertise have the advantage that there is no need for governments to "pick" or "recognize" winners and that they are less prone to capture.

Strategic trade policy

Another reason why governments may subsidize firms is to secure a national advantage in leading industries characterized by economies of scale. This may, for instance, occur in R&D intensive industries.

R&D intensity and other entry costs lead to economies of scale in production processes. The industries concerned are frequently characterized by imperfect competition, which might induce governments to use subsidies to shift rents or pursue other strategic policies. The use of subsidy programmes in support of "national champions" that are considered to be of particular value for the relevant economy is a frequent phenomenon and is often observed in R&D intensive sectors. Such policies are likely to be hurtful to trading partners that are themselves active in the relevant industry. On the other hand, they may be beneficial for trading partners that only import the relevant service or good, as increased competition may lower consumer prices. Given the nature of strategic subsidy schemes, the risk of government capture is particularly high. The more governments enter into competition, the more likely that funds end up being dissipated in excessive entry, possibly leading to consumer prices that are higher than necessary, as none of the supported companies can produce at an efficient scale.

Distribution

In terms of standard economic analysis, an inequitable distribution of income does not represent a market failure so such analysis is likely to be of limited use in establishing why governments might use subsidies to change the distribution of income in society.

Governments almost everywhere regard redistributive policies as part of their responsibility and will often use instruments such as subsidies to promote greater equality. Economic analysis inevitably gives way to moral, philosophical, sociological, historical and psychological discourse in this area.

Income redistribution policies will carry certain costs for society, arising from the adverse effects of income transfers on incentives and from the administrative costs of transfer programmes. High marginal tax rates can reduce the incentive for saving, risk-taking and entrepreneurship. Generous social programs can dull incentives to participate in the labour market. The rich may also be tempted to engage in socially wasteful activities to avoid taxes. If economic analysis has little to say about the desirable distribution of income in society, it is nevertheless useful in considering these costs against the benefits assigned to more income equality.

Governments can achieve their redistributive goals through a host of instruments. The traditional ones include a progressive income taxation system, social security and public health insurance. But these are not the only available levers of policy. A part of government spending on public education, public housing, and public services can also be classified as social expenditures because they encompass the objective of improving economic conditions and opportunities for parts of the population.

Social expenditures are a significant share of national income in developed countries.

In developed countries, what can be termed social expenditures comprise a significant share of government spending and of GDP. In 2001, OECD members spent an average of 21.2 per cent of GDP on social programmes, though not all of this spending can be classified as subsidies. These social expenditures cover programmes for old age, survivors, incapacity-related benefits, health, family, active labour market programmes, unemployment, regional policies, housing, water, and access to telecommunications services. Several of these aspects of social spending are discussed in the Report.

Outside these traditional areas of social expenditures, governments often justify subsidies to agriculture as necessary to support farm income. Similarly, subsidies to declining industries may be justified on income distribution grounds. Financial aid to the coal industry in the EU, for example, is regarded as compatible with the proper functioning of the common market if it helps solve social and regional problems created by falling production. Support to declining industries can either aim at facilitating the downscaling of production or at raising competitiveness of the ailing industry. If unsuccessful the latter strategy can lead to significant costs for society.

The cost of implementation of subsidy programmes can be reduced by better targeting of beneficiaries (greater specificity) and incorporation of market discipline.

In some of the examples of redistributive policies taken up in this Report, there is a discussion also of how it may be possible to lessen the associated costs of subsidies through better targeting or through the incorporation of market discipline in their use.

Environmental protection

As concern has grown about environmental degradation, so have policy interventions designed to address the problem.

Economic growth over the last decades has increased concern about environmental degradation, including deforestation, global warming, reduced bio-diversity, air pollution, depletion of the ozone layer, and over-fishing. This concern has led to a range of environmental agreements, laws and regulations, and additional resource flows aimed at addressing environmental problems, including through subsidies. The sources of environmental challenges can be pinned down to market failures, such as the existence of positive or negative externalities that are not taken into account in private production and consumption decisions, the fact that certain natural resources have a public good character, and the existence of information asymmetries between producers and consumers in regard to the environmental characteristics of products or production processes. Each of these eventualities would justify government intervention.

Governments often face complex decisions about how best to address environmental issues.

This, of course, raises the possibility that governments may err in their choice of intervention. In general, economists would argue that the best policy instrument would be the one that addresses the source of the problem as close to its source and in as precise a fashion as possible. But other factors such as the socio-economic level of development will also influence the decision. Policy instruments available to governments for dealing with market failures that have adverse environmental consequences include economic incentives such as tariffs, taxes, tradable permits and subsidies, administrative instruments such as laws, regulations and prescribed standards, and investments in the dissemination of information. In regard to economic instruments, subsidies can be designed to internalize either negative or positive externalities, to facilitate adjustment to new environmental regulations, and to correct information asymmetries. However, the desirability of a subsidy relative to alternative instruments depends on a range of factors.

For example, economists tend to regard taxes and subsidies as very similar instruments, but in this context an emission tax may be better than a subsidy for each unit of emission reduced because a tax would not expand an environmentally damaging activity. In general it may be difficult to identify the precise level of a tax or subsidy required to attain a given environmental objective. This is why regulations (although economically

inefficient) may be preferred to fiscal instruments – regulations can set precise *ex ante* targets. Similarly, regulations may be preferred to information campaigns with less certain outcomes. Tradable permits are often considered the best policy instrument, because they combine certainty of the outcome and least costs. But, tradable permits too have drawbacks: they can be used for strategic competition.

The international character of some environmental problems adds to the complexity of choosing the right policies.

Where environmental problems are international and not local in nature, other factors come into play. Air pollution and acid rain, for example, transcend national boundaries. International spillovers can only be effectively addressed through international cooperation. Here, however, questions arise such as who should pay, what instruments should be applied, and whether all parties to an international agreement should observe the same environmental standards.

Other policy objectives

Subsidies are sometimes provided in the name of national security, non-trade concerns or cultural heritage and diversity and other non-trade concerns. Such objectives transcend narrow economic maximization concepts and tend to carry particular implications for specific industries.

Some public policy objectives already discussed are impossible to analyse solely in terms of their economic consequences. This is also true of interventions in the name of national security, cultural heritage and diversity and other non-trade concerns. Such objectives transcend narrow economic maximization objectives. They are generally considered as objectives that are crucial to the identity of a nation, even if they have a specific sectoral focus. However, choices among policies to pursue these objectives can have significant implications in terms of economic efficiency.

Sectors in which national security considerations figure prominently include food and energy production. In economic terms, one could argue that a market failure arises on account of divergence between private and public perceptions of risk. While the actual level of security desired is a political decision that goes far beyond economic analysis, the latter is useful in gauging the relative economic costs of fostering additional domestic production for security purposes as opposed to holding stocks, diversifying foreign sources of supply and investing in foreign production in the sectors concerned.

The non-trade concerns most widely discussed in the WTO context relate to agriculture and the alleged grounds for subsidies and similar measures aimed at increasing commodity production. The term multi-functionality is also used in this connection. The argument is that agricultural production is a process of joint production where not only commodities such as food and fibre are produced, but also “non-commodities” that exhibit the characteristics of positive externalities and public goods. Examples of such non-commodities include landscape, cultural heritage values, biodiversity, rural employment, food security and animal welfare. A source of some debate is the question whether the production of these “goods” can only be secured through additional agricultural commodity production, or whether in some instances other, less-cost policy interventions could attain the same objectives.

The protection of cultural heritage and promotion of cultural diversity are considered by several countries to be a public policy objective. A debate exists over whether trade liberalization represents a menace to cultural heritage and diversity. Some argue that trade liberalization in cultural products erodes national identities and narrows individual choices. Others argue that trade in cultural products enhances individual choices. Across the world a number of different instruments have been used to achieve the objective of maintaining cultural heritage and diversity. Among these are restrictions on market access, the imposition of domestic content requirements and subsidies. From an efficiency and effectiveness perspective, subsidies often turn out to be a superior instrument in this domain.

The incidence of subsidies

Comprehensive information on the use of subsidies is hard to come by, either because governments do not systematically provide the information or because multiple data sources use different definitions and classification systems.

Although there are a number of sources from which information on subsidies can be obtained, definitions and classifications differ in most cases and are difficult to reconcile. Data from international sources that allow for cross-country comparability either only exist at a highly aggregated level, or are available for a limited number of (sub)sectors, e.g. fisheries and agriculture, or instruments, e.g. export credit support. For other sectors, like services, and government support to the establishment or maintenance of EPZs, no international data source exists which would provide quantitative information that is comparable across countries.

To provide more pieces to the puzzle, three types of additional sources have been used: national and supranational subsidy reports, information from WTO notifications under the SCM Agreement and the AoA and information from the WTO's Trade Policy Review reports. National subsidy reports provide quantitative information that is likely to be comprehensive and accurate but does not guarantee cross country comparability. WTO notifications contain quantitative information. Compiling and analysing this information is, however, difficult as the information has not been provided according to clear and consistent statistical definitions. The information contained in Trade Policy reports is mostly descriptive, and has been reported in this section mainly for illustrative reasons.

Aggregate data covering several decades suggest that subsidy levels have differed significantly among developed countries, and also over time within countries. Developing countries use subsidies less on average than developed countries as a proportion of their national income.

Available information indicates that 21 developed countries spent nearly US\$250 billion in 2003 on subsidies. The total for the world was more than US\$300 billion in that year. The average ratio of subsidies to GDP among developed countries was higher in the 1970s and 1980s than either the 1960s or the 1990s. In the EU(15), Norway, Canada and Japan the ratio decreased markedly in the 1990s and the 2000-04 period compared to levels in the 1970s and 1980s. For the United States, the ratio of subsidies to GDP was rather stable over time. Over the entire 1960-2004 period, the level of subsidies (as measured by the NACC) in the United States was about one half of a per cent of GDP, which was lower than in the other developed countries. The European countries report a much higher subsidy level while Japan takes an intermediate position between the United States and the EU. Canada's subsidy level has been rather close to the EU level while those of Norway and Switzerland exceed the EU level.

It is often assumed, seemingly correctly, that subsidy levels are lower in developing countries than in developed countries. On the basis of National Accounts data for the years 1998 through 2002, the share of subsidies to total government expenditure and to GDP in developing countries seems to have been lower than for developed countries. For a sample of 22 developed and 31 developing countries, it was found that the average ratio of subsidies to GDP for the period was 0.6 per cent for the developing countries – less than half the rate observed for the sample of developed countries (1.4 per cent). The difference between the developing and developed countries is also pronounced for the ratio of subsidies to government expenditure (4.4 per cent and 8.2 per cent respectively).

Sectoral data show high variance among countries.

Given the present data situation, it is impossible to come up with an estimate of the sectoral breakdown of global subsidies. Also at the country level only rough indications can be obtained on the sectoral distribution of subsidies, and this only for a limited number of countries. The first observation which can be made is that the available data point to a large variation in the sectoral distribution of subsidies among countries.

For Colombia and Brazil the data show a low share of agriculture (less than 20 per cent) and a high share for services (more than 50 per cent). In India, however, the data point to a very large share of agricultural subsidies (more than 50 per cent), followed by industry (about one-fifth) and services (about one-eighth). In

the EU, the distribution of subsidies among industries differ substantially at the Member state level (excluding the subsidies provided by the EU directly which are focussed on agriculture and fisheries). According to the EU scoreboard data, overall state aid provided by member countries is concentrated on the industry sector (more than two-thirds in 2003). Information from the Annual Review of Trade and Assistance by the Australian Productivity Commission indicates that Australian subsidies go largely to the industrial sector, one-quarter to agriculture and one-fifth to services.

Subsidy notifications to the WTO are a potentially useful source of information but the data contain many gaps and shortcomings.

Mandated notifications by WTO Members under the Agreement on Subsidies and Countervailing Measures are another potential source of useful information on subsidies. In principle these data cover industrial and agricultural subsidies. But the data have significant shortcomings. First, not all Members fulfil the notification requirements at the expected intervals. In most years, information is available for less than half of the WTO Membership. Second, the information provided by Members is not necessarily complete in each year. Third, many notifications contain limited quantitative information on subsidy programmes. The information from WTO notifications provided in this Report should be read with extreme caution.

Comparing the data on subsidies from various sources for the period 1998-2002 reveals not only large discrepancies but also raises questions about the completeness of WTO Member notifications. For the United States, the reported annual average value for the four-year period is US\$16.3 billion, less than half the value reported in national accounts (US\$41.5 billion, federal subsidies only). In Japan the notifications report US\$4.2 billion of subsidies while in the national accounts US\$34.3 billion are reported. Australia notifies to the WTO subsidies of US\$0.3 billion while in its NACC they rise to US\$4.7 billion. For the EU(15), the notifications amount to US\$96.3 billion (Community and individual members combined) which are not so far off the NACC data which report US\$109 billion and the EU Scoreboard (which excludes EU subsidies) of US\$80.3 billion. As indicated above, the exclusion of services in the notification requirements and the absence of quantifications of many subsidy programmes in the notifications are an important element in these discrepancies.

Agriculture

Data from the WTO and the OECD, while far from complete and not entirely comparable, allow a picture to be drawn of the magnitude and trends of subsidies in the agricultural sector.

Two main sources of information on agricultural subsidies are used in the Report. These are the notifications made by WTO Members to the WTO Committee on Agriculture and the OECD's agricultural database, particularly its Producer Support Estimate (PSE). The aggregate measurement of support (AMS) used in the context of the WTO Agreement on Agriculture is a measure of domestic support subject to reduction commitments. These are the most trade-distorting measures. Nevertheless, a *de minimis* level of product-specific and non-product specific domestic support may be retained. In addition, a range of support measures are not considered trade-distorting (or only to a minimal extent) and hence are exempted from reduction commitments. These include Green Box Measures, Blue Box Measures and Article 6.2 Measures (S&D Box Measures).

A sample of data from WTO notifications on domestic support point to a reduction over time in support levels and particularly in the most trade-distorting forms of support.

Notifications by WTO Members tend to lag by several years, making it difficult to provide the latest information on Total Current AMS. Furthermore, not all Members have notified every year since 1995. In order to avoid problems with the comparability of the data series over time, the Report relies on a panel of 21 WTO members who have reported their Total Current AMS without interruption from 1995 to 2001. The cut-off year of 2001 was chosen because that was the latest year in which there is data on the three Members (European Communities, US, and Japan) with the highest levels of Total Current AMS.

For these 21 Members, Total Bound AMS has fallen by an average of 7.2 per year over the 1995-2001 period. But Total Current AMS has been reduced at a far sharper rate of 10.3 per cent per annum. Actual levels of trade-distorting support (Total Current AMS) has been reduced by nearly half, from US\$115.1 billion in 1995 to

US\$60.1 billion in 2001. Although there is only a commitment to reduce bound AMS, other components of domestic support have also been decreased, although by a slower rate. Over the 1995-2001 period, there has been an annual average reduction of 6.9 per cent on blue box spending, 5.7 per cent on Article 6.2 measures, and 2.6 per cent on green box measures. The only component of domestic support which has increased over the six year period is *de minimis*, which nearly tripled in amount, from US\$ 3.8 billion in 1995 to US\$ 9.6 billion in 2001.

The bulk of domestic support is provided by three Members – the EU, the United States and Japan. During the 1995-2001 period, the EU spent an average of US\$96.1 billion on domestic support, followed by the United States with US\$66.2 billion and then Japan with US\$41.8 billion. After the top three Members, the amount provided by others trails off very quickly. The fourth largest provider of support, the Republic of Korea, averaged US\$7.5 billion. While seven of the top ten providers of support are OECD members, three are not – Brazil, Thailand and Cuba.

The AMS estimates also allow us to make some assessment of the distribution of support by commodities. Information from notifications made in 2001 indicates that the bulk of product-specific AMS was concentrated in meat and livestock (23 per cent of AMS), milk and dairy products (19 per cent of AMS), fruits and vegetables (13 per cent of AMS), cereals (12 per cent of AMS), sugar (12 per cent of AMS), and vegetable oils and oilseeds (10 per cent).

WTO notifications suggest that export subsidies, like domestic support, have seen substantial cuts in recent years. The EU and other European countries are the major users of export subsidies that require notification in the WTO. Other non-notifiable export subsidy mechanisms such as export credits and guarantees, as well as food aid and state-trading should also be taken into account.

Turning to export subsidies, notifications suggest that the EU is the dominant provider of such support, accounting for close to 90 per cent on average of notified outlays. However, export subsidies as a share of agricultural output are much larger in Switzerland and Norway (hovering around 4-6 per cent and 3-5 per cent respectively of total production) than in the EU (1-2 per cent). At a total of some US\$3 billion in 2000 (down from about US\$7 billion in 1995), export subsidy spending is small compared to domestic support outlays, which amounted to approximately US\$200 billion in the same year. At about 17 per cent annually on average, budgetary outlays in dollar terms declined more than commitment levels, which only shrank by approximately 14 per cent. Sugar, various dairy products and meat (notably beef) are the most heavily subsidized exports.

Other forms of export subsidies that need not be notified, such as export credits, export credit guarantees or insurance programmes, as well as state-trading enterprises and food aid can be of considerable importance for certain Members and, therefore, are part of the export competition pillar in the Doha negotiations. According to the OECD, the export subsidy equivalent of export credits is most pronounced for the United States, Australia, Canada and a number of European Union member countries. However, publicly available data on short- and medium-term export credits are very sketchy. The United States, a major user of export credit guarantees, has published data showing that between 1995 and 2002, around US\$3 billion was spent on average per year, corresponding to between 5 per cent and 6 per cent of total agricultural exports and to about 2 per cent of output.

A major concern with exporting state-trading enterprises, especially if granted single desk status, i.e. the exclusive right to purchase and sell in the domestic market as well as export markets, relates to the exercise of market power. Hidden export subsidies may be given through a combination of price discrimination between domestic and export markets and price pooling after all sales have been effected. At a lower internal price, domestic sales can be expected to contract, while more is produced at a higher pooled price and absorbed into increased exports. However, the question whether state-trading enterprises indeed subsidize exports is not easily answered and much depends on the market structure that would replace a state-trading enterprise after its hypothetical elimination. Additional complications arise when state-trading enterprises enjoy other forms of government financing, such as discounts on transportation and storage rates, preferential exchange rates, interest rates and the like, that are not available to private traders. A specific privilege has sometimes been the underwriting of losses by the government, leading to more aggressive pricing strategies by state-trading enterprises and, as a result, higher exports.

Food aid may be considered an export subsidy if it leads to the displacement of commercial suppliers. Emergency aid is unlikely to have such effects, since it is targeted at additional consumption. Besides emergency relief, properly targeted food aid could also provide an insurance function in regions where other mechanisms such as food markets, stock-holding and household strategies fail. The proper distinction between bona fide food aid and subsidized in-kind food transfers for the purpose of surplus disposal has been a source of contention. WTO Members have decided to develop effective disciplines on in-kind food aid, monetization (i.e. food sold in the recipient country to provide budgetary support to the local government) and re-exports in order to prevent loop-holes for continuing export subsidization.

OECD data largely confirm observed trends in the reduction of trade-distorting agricultural support.

Although OECD data are not easily comparable with information generated in the context of the WTO negotiations, these data can provide useful corroboration of patterns of subsidization revealed by the AMS and total domestic support estimates. Over the past 20 years, the nominal value of PSEs in the agricultural sector of OECD countries has not changed much, varying between US\$230 billion to US\$280 billion. If the nominal values are adjusted to real values, the data reveal a decline in support to agriculture over the last two decades. If one considers the magnitude of support as a share of agricultural production, there has been a decline from 39 per cent in 1986 to 30 per cent in 2004, although fluctuations have occurred during the period.

Three components of the PSE can be distinguished. These are market price support, payments based on either output or inputs, and other payments (payments based on area planted/animal numbers, historical entitlements, input constraints, overall farming income and miscellaneous factors). The first two categories arguably give the greatest incentives to expand production. Market price support declined from 77 per cent to 60 per cent of the PSE from 1986 to 2004. Payments based on output and input use remained fairly constant as a share of PSE, at about 14 per cent. The share of "other payments", which is less distorting than the first two, rose from 10 per cent in 1986 to 26 per cent in 2004.

Economic simulation models suggest that agricultural subsidies create a welfare loss and that this is borne primarily by the major providers of subsidies. Owing to their highly trade-distortive effect, some trading partners benefit from the removal of export subsidies, but net food importers may be hurt.

Economic simulation models could be used to examine how subsidies affect other market participants (producers and consumers) beyond the original beneficiaries. Despite the variety of modelling approaches employed, a number of common conclusions have emerged from this research. First, the provision of agricultural support creates a welfare loss and the bulk of this loss is incurred by those countries who are the major providers of subsidies. Second, there are spillover effects on world markets. Support in rich countries tend to depress world market prices of the most subsidized agricultural commodities. This benefits some trade partners but hurts others as well. Net food and agricultural importers benefit from the support provided in rich countries as this tends to lower the cost of their food and agricultural imports. Net exporters of agricultural goods are penalized as they lose market share in third markets or receive prices in world markets that are lower than what would have been the case without the support. Finally, the elimination of agricultural subsidies in OECD countries would generate welfare gains for the entire world although, according to one study, the gains are almost ten times smaller than the benefits flowing from complete removal of agricultural tariffs.

Recent directions in agriculture support policies, combined with advances at the Sixth Ministerial Conference in Hong Kong, suggest that despite the difficulties ahead and contested views about the appropriate pace of change, trends towards the reduction of trade-distorting agricultural policies are a cause for some optimism.

Thus, both the WTO and the OECD data point to a decline over time in the most production-distorting and trade-distorting forms of agricultural support. The trends in domestic support and export subsidies that have been observed in this Report and the agreements reached at the Hong Kong Ministerial Conference, particularly on export subsidies, provide grounds for optimism that despite the difficulties and challenges ahead, the reduction

in the most trade-distorting support in the agricultural sector will not only continue in the future but perhaps even accelerate. In Hong Kong, Members agreed on the elimination of all forms of export subsidies by the end of 2013 and disciplines on all export measures with equivalent effect to be completed by the same date.

Industry

Once again systematic data are non-existent. Reliable sources of information on industrial subsidies are scarce and mostly incomplete.

Over the period 1995 to 2002, a total of 54 economies (including the European Communities and its Member States) notified quantitative information on industrial and/or horizontal subsidies to the WTO under the SCM notifications requirement. The median value of the industrial subsidies to GDP ratio for this sample is 0.2 per cent but data suggest considerable diversity among Members in terms of their use of industrial subsidies.

The Australian Productivity Commission's Trade and Assistance Review provides an interesting and comprehensive survey of Australian subsidies, which complements the information in the notifications. It shows that Australian budgetary assistance to industry expressed as a share of GDP decreased from 0.37 per cent to 0.30 per cent between fiscal years 1999-2000 and 2003-2004. This same source shows that assistance provided by tariffs to the manufacturing sector was more than four times larger than budgetary assistance to this same sector.

Total state aid provided by EU-15 Members, less aid to agriculture, fisheries and transport, decreased substantially between the mid-90s (1995-1997) and the end of the decade. Since then, the ratio of subsidies to GDP has remained stable. Despite some convergence between new Members and EU-15 States, state aid data show that differences in industrial subsidy practices among EU Members remain significant. These state aid figures do not include subsidies granted by the EU, which accounted for about two-thirds of the Community budget in 1998. Among major recipients of these funds were the agriculture and fisheries sectors.

A majority of countries notified more horizontal than industry-specific subsidies in 2002 and there is evidence suggesting that aid is being progressively redirected toward horizontal objectives in Europe and Latin America.

Among the richer countries, the European Communities notified six times more industry-specific than horizontal subsidies, while the United States notified seven times more horizontal than industry-specific subsidies. In line with commitments undertaken at various European Councils, EU-15 Member States have been redirecting aid towards horizontal objectives. In the new Member States, the share of pre-accession aid to horizontal objectives was relatively low because of the strong support to several industries including coal, steel and the financial sector in the context of privatization, or to ensure viability. Figures for 2004 show that the share of horizontal aid has increased substantially in the new Member States.

Australian budgetary assistance statistics for 2002-03 show that industry-specific measures accounted for 44 per cent of total budgetary assistance, R&D accounted for 28 per cent and general export measures accounted for 15 per cent. Tax exemptions under the Automotive Competitiveness and Investment Scheme were the single most important industry-specific budgetary assistance program.

Evidence from Latin America and the Caribbean countries show that in the late 1980s and 1990s a transition occurred from industrial policies associated with the import substitution model to industrial policies suitable for outwards-oriented economies. Measures such as EPZs, grants and fiscal incentives aimed at promoting technological modernization, and policies to promote SME development replaced traditional direct subsidies and fiscal incentives.

In sectoral terms, mining, coal, steel, forestry, fishing, shipbuilding and the automotive industries appear to be among the major recipients of subsidies.

Australian Government budgetary assistance varies markedly between sectors, with the largest proportion directed to the manufacturing sector. The motor vehicles and parts industry receives the largest share of

assistance, both in absolute terms and relative to the sector's gross value added. Other important beneficiaries of subsidies include the textiles and clothing industry, metal product manufacturing and petroleum, coal, chemicals and associated products.

Available information on state aid for EU Members does not provide an accurate picture of the final recipients of the aid. Data nevertheless show that the distribution of state aid across sectors varies considerably among Member States. Eight countries provide state aid to the coal industry which accounts for most of industry-specific aid in the EU-15, but only for one-third in the new Member States. The share of manufacturing (including processed food) in total state aid varies between 13 per cent in the case of Portugal and 98 per cent in the case of Slovakia. State aid to fisheries never exceeds 3 per cent of total state aid, as support to fisheries is mainly provided through EC structural funds. The amount of state aid to the shipbuilding sector declined by half between 1999-2001 and 2001-2003. Two of the ten new Members provide aid to the automotive sector while four provide aid to the steel sector.

Evidence suggests that in Latin America and the Caribbean, the specific sectors that benefit from loans or tax incentives include mainly primary industries and in particular forestry and mining, and cultural industries such as publishing, printing or newspapers.

Fisheries

Subsidies to fishing are large and stable in most countries engaged in subsidization, but environmental protection has tended to figure more prominently as a stated objective of fishing subsidies in recent years.

Subsidies to the fishing industry worldwide are estimated at between US\$14 billion and US\$20 billion in 1996, representing around 20 per cent to 25 per cent of world revenues. Different data sources are not directly comparable. Despite this limitation, certain conclusions may be drawn. OECD countries typically receive some US\$6 billion a year in transfers from the government, representing 20 per cent of the landed value. About 40 per cent of this total is provided by Japan, followed by the United States and the EU, representing around 15 per cent each. Among EU countries, Finland appears to provide the largest subsidies as a share of landed value. A substantial share of global fishery subsidies is accounted for by Canada, Republic of Korea, Russia, Indonesia and Chinese Taipei.

Little information is available on fisheries subsidies provided by developing countries. A recent study by UNEP reveals, however, that fishery subsidies do exist in developing countries and may also be important, as the case of Senegal.

All available data sources suggest that the level of fisheries subsidies has remained substantially unchanged over time. However, stated policy objectives do appear to have changed. These objectives include the provision of research and management services for sustainable fisheries, fleet modernization, regional development, and income support. The recent trend, especially in developed countries, is to shift the emphasis toward environmental protection. Some evidence of a move toward environmental objectives is also present in developing countries. For example, although total fishery subsidies in Cape Verde remained substantially unchanged between 1999 and 2000, there was a fall in subsidies for ice purchase and an increase in decommissioning grants.

Coal

Available evidence suggests that many but not all major coal-producing countries subsidize their industries quite heavily. In a number of cases, however, subsidies are being directed more towards adjustment and less towards merely maintaining the industry.

No comprehensive public database exists on coal subsidies. The International Energy Agency collects and publishes detailed information on coal production, consumption, trade, and prices for all its Members but it does not collect information on subsidies. Our overview suggests that many coal producing countries, developed and developing, grant subsidies to their coal industry. In a number of cases, however, the nature of

the subsidies and their objectives have changed. Moreover, many countries have reduced their subsidies in the last decade. On the other hand, available evidence suggests that a number of major coal producers, including China, the US, India and Australia, do not directly subsidize their coal industries.

Coal has played a crucial role in the process of industrial development in numerous countries. Some governments subsidized the coal sector to promote industrial development and energy security. In some regions, however, the strategic importance of coal decreased with the diversification of energy sources and the competitiveness of the domestic coal industry was progressively eroded. Because of the historical and social importance of coal-mining activities to local economic activity and employment, governments sometimes intervened heavily to support the coal industry. Such interventions often prevented necessary adjustments from taking place.

In a number of countries, the heavy cost of subsidies induced governments to force the coal industry to embark on substantial restructuring measures, sometimes involving major cutbacks in activity. Restructuring of the coal sector has taken place in India, Mongolia, Romania, Russia, Ukraine, Japan, Republic of Korea, Turkey and several EU Member countries.

While one of the objectives of restructuring is usually to reduce subsidies, it typically involves granting some other forms of aid. Evidence for the European Union shows that while operating aid was cut by about half over the period 1994 to 2000, other types of aid increased substantially. While the social and regional function of coal aid programmes has been recognized, their cost-effectiveness has been questioned. According to the European Commission, in 2000 the annual sums paid per worker in aid to current production were appreciably higher than the average wages of the workers concerned.

Services

International sources of data on the incidence of subsidies in the services sector is practically non-existent. Available sources suggest that support is concentrated in the transport, tourism, banking, telecommunication and audiovisual sectors.

Most available services data comes from national sources, rendering cross-country comparisons difficult. One useful, if incomplete, source of international data on subsidies to services is the WTO's Trade Policy Reviews (TPR). Information contained in the TPR reports issued between 1995 and February 2004 suggests that subsidies are found in many service sectors, but mainly in transport, tourism, banking, telecommunication and audiovisual. These are the sectors on which the analysis of services subsidies focuses in this report.

While such data is not comprehensive and has significant limitations that impede drawing too many inferences, it suggests, regarding the types of measures used that developed countries tend to use with more frequency direct grants and preferential credit and guarantee arrangements, while in developing countries tax incentives, duty free inputs and free zones appear to be more common.

Transport services

Subsidies to transport services are generally aimed at ensuring universal service access, although environmental considerations and security concerns have also played a part in recent years. Stated objectives and the type of instrument used differ across modes of transport.

The case for public support to transport services is generally made in terms of the desirability of universal access. However, a number of other policy goals are also declared by governments as justification for the subsidies provided. For example, an important reason behind the subsidization of some specific modes of transport, such as subsidies to rail transport, is that of pursuing environmental goals.

EU state aid data show that aid to the transport sector represents the largest share of total EU state aid. In 2001, 46 per cent of state aid was granted to the transport sector. The largest share of state aid in the EU is granted to railways transport, including for environmental reasons. From 1998 subsidies to the air transport sector have dropped. A reversal of the downward trend in air transport subsidies has been recorded recently (2001-2003), following the special support measures taken after 11 September 2001.

Differences also emerge as to the type of subsidy used across various modes of transport. For example, in the EU while tax incentives and direct grants make up the whole amount of state aid in the case of railways, road and maritime transport subsidies, subsidies to air transport are provided in the form of equity participation.

Telecommunications

Universal service obligations figure prominently in support to telecommunications services, although the means of intervention vary among countries.

The importance of direct subsidies for universal telephone services has declined worldwide. The financing of universal service obligations is increasingly carried out in many countries through Universal Service Funds (USF). In general, these funds are financed by a tax on telecommunication operators, general tax funds or the sale of resources (such as privatization) or the sale of licences. In developing countries, USF are often financed through both government subsidies and operator levies. Among Latin American countries, Chile and El Salvador provide universal services funds almost entirely through government subsidies.

An important difference exists between developed and developing countries in the use of universal service funds. While in developing countries, USF resources focus on ensuring the affordability of the services, in developed countries universal access policy focuses on guaranteeing the availability of the service, including through developing telecommunications infrastructure.

Tourism

Subsidies to the tourism sector are widespread, particularly but not exclusively in developing countries. While subsidies are primarily development-focused in the latter countries, in developed countries they tend to be more concerned with other considerations, such as regional conditions and small and medium enterprises.

Tourism is one of the sectors most frequently targeted by services subsidies according to the information collected from TPR reports. Subsidy programmes for tourism were mentioned in 62 of the 97 Members reviewed in TPR reports between 1995 and February 2004.

In many developing countries, subsidy programmes for tourism are explicitly mentioned in relation to the nation's development strategy. Also in industrialized countries tourism subsidies are frequently intended to be a development tool, although they tend to be used for regional development in those countries. While subsidies for the development of tourism related infrastructure play a significant role in developing countries, support of the tourism industry is more likely to take the form of marketing support or support to small and medium enterprises in industrialized countries.

Financial Services

Government intervention in financial services frequently aims at keeping ailing banks afloat or at restructuring the banking sector.

Information collected from TPR reports reveals that governments from all regions provide assistance to the banking sector in order either to keep ailing banks afloat or restructure the banking sector. Support to restructuring the sector in the context of privatization has been reported frequently for Members in Eastern and Central Europe and Latin America. Support for adjusting to international standards of capital ratios or for merging banks is repeatedly put forward as a reason for intervention in countries in Europe and Asia. Asian countries appear more often among those that explicitly mention the promotion of off-shore banking as one of the objectives for subsidies to the financial sector. Support for start-up financial institutions, for investments in micro-financing and promotion of foreign direct investments is concentrated among African countries.

In terms of the subsidy instruments used, TPR reports indicate that subsidies to the financial sector in the form of equity injections appear more concentrated in Asia and Western Europe, while tax incentives are relatively more frequent among African and Caribbean countries.

Audiovisual

The main characteristic of subsidy programmes in the audiovisual sector appears to be the promotion of certain domestic content and the pursuing of cultural objectives. But, for many countries subsidies are only one of an array of policy instruments.

Subsidies are a tool commonly used in many countries in the pursuit of cultural objectives, often to encourage the production of domestic content, especially in the film and television industry. Other instruments often used include domestic content quotas, foreign equity participation or public broadcasting. Available national data on audiovisual subsidies appear to indicate that subsidies to the audiovisual sector represent a significant percentage of overall services subsidies in developed countries and that they have been increasing over time.

Subsidies and the WTO

The GATT/WTO subsidy rules have undergone significant transformation over the years, with changes generally in the direction of making the rules stricter and more precise.

Early rules on subsidies relied on notifications and consultation to ensure that subsidies did not cause serious prejudice to the interests of trading partners. Additional disciplines were then introduced for some GATT Members on export subsidies in the mid-1950s, particularly those affecting non-primary products, which were subject to a phased-in prohibition. Asymmetry in the treatment of export subsidies on agricultural and non-agricultural products has persisted to the present day. The Tokyo Round Agreement on subsidies introduced more detailed rules, particularly on nationally-applied trade remedies (countervailing duties), and also codified the prohibition on export subsidies on non-agricultural goods. The Agreement applied only to those GATT Members who signed it.

The Uruguay Round Agreement on Subsidies and Countervailing Measures was a major step forward in rule-making. A definition of subsidies was introduced, along with the concept of specificity. The new Agreement applied to all Members, with far-reaching consequences for many countries that hitherto had effectively been exempt from most subsidy disciplines.

The Uruguay Round Agreement on Subsidies and Countervailing Measures introduced a definition of subsidies that essentially rests on the notion of a financial contribution by government that confers a benefit upon the recipient. This definition avoids confusion over more broad-based notions of what might constitute a subsidy and recognizes the reality that other trade rules exist in the WTO that could be argued to have a “subsidy-like” effect (e.g. import tariffs). The concept of specificity is also crucial in definitional terms, since particular forms of specificity (export contingency and contingency on use of domestic goods) attract the strictest discipline (prohibition), while non-specific subsidies fall outside the scope of the WTO subsidy rules. Specificity in the general sense is deemed to exist where access to the subsidy is explicitly limited to a particular set of beneficiaries. Subsidies in respect of which access is based on objective criteria and neutral conditions, which are strictly respected, are defined as non-specific. Government support for general infrastructure, for example, is excluded from the WTO definition of subsidies.

The approach in the legal texts towards “specificity” reflects the expectation that subsidies carry the potential to be more trade distorting the more specific they are. Indeed, in economic terms the more closely targeted a subsidy towards its intended beneficiaries, the more concentrated its relative price effect will tend to be. In many circumstances, this could be taken to imply a higher probability that the subsidy is distorting. A subsidy to a single industry, for example, rather than to many industries could impart a narrow advantage. The more broadly based subsidy recipients are defined, then, the more “spread out” and shallower will be the likely subsidy impact.

On the other hand, the preceding discussions in this Report have shown that governments may wish to target subsidies as precisely as possible in order to correct for given market failures while avoiding undesired side-effects. At the first glance, there appears to be a conflict. Yet, the concepts of “targeting” and “specificity” are not identical. Subsidy programmes can be targeted while basing eligibility on objective criteria and neutral conditions. Such programmes would not be considered specific. Also specific subsidy programmes can only be challenged under WTO law if they cause adverse effects to the interests of other Members.

With the “Single Undertaking” of the Uruguay Round, many developing countries faced new subsidy disciplines, making the special and differential treatment (S&D) provisions of the new Agreement on Subsidies and Countervailing Measures of particular importance. The S&D provisions of the Agreement allow certain developing countries to apply export subsidies to non-agricultural goods subject to transition rules, specify higher nullification, impairment and injury standards for multilateral actions against subsidized developing country exports, and include special thresholds for subsidy levels and trade levels below which countervailing duty actions cannot be taken in respect of developing Members’ exports. Developing countries are also exempted from anti-subsidy actions in respect of debt forgiveness, subsidies to cover social costs and liability transfer when these are associated with privatization. The Agreement also contains a provision for extension of the transition period for the elimination by developing Members of their export subsidies. In 2001, Members adopted a set of special producers for use of this extension provision by certain developing Members, in respect of certain of their export subsidy programmes, with a view to providing these Members with more security and stability particularly in respect of their investment incentives. Twenty Members have taken advantage of these procedures to prolong their right to use certain export subsidies. Most of these measures relate to export processing zones (EPZs).

The Uruguay Round Agreement on Subsidies and Countervailing Measures also introduced clarifications in regard to anti-subsidy remedies.

Two kinds of remedies are envisaged against specific subsidies – a unilateral and a multilateral one. The unilateral remedy consists in the application of countervailing duty. Countervailing duties may be imposed on a subsidized product up to the estimated amount of the subsidy, provided the subsidization causes or threatens material injury to an established domestic industry or materially retards the establishment of a domestic industry. Changes to the rules in the Uruguay Round Agreement were mostly of a procedural nature, relating to such matters as the elaboration of the requirements of an investigation, the calculation of the value of subsidy margins, the existence or threat of injury, and the establishment of causal links between subsidization and its effects on domestic industries. The multilateral remedy involves dispute settlement.

The design of the countervailing duty remedy seeks to balance national consumer and producer interests. More generally, the existence of subsidy remedies is likely to restrain subsidy practices.

From the consumer’s perspective a countervailing duty, like an anti-dumping duty, raises import prices and represents a cost. For producers, countervailing duties offer an additional margin to raise domestic prices. The standard argument to justify such a countervailing duty would turn on the presence of an externality or market failure. Strategic considerations may also enter the picture if a foreign competitor is being aided by a government to sell below cost in order to eliminate competition from production in the importing country. It should be noted that if a subsidy is countervailed in the importing country, this is equivalent to the subsidy-granting country making an unrequited financial transfer to a foreign government. In general, the potentially inhibiting effect of anti-subsidy remedies can mean more or less welfare in both exporting and importing countries, and the welfare effects may or may not go in opposite directions for the exporting and importing countries.

The Agreement on Agriculture specifies different rules for subsidies on agricultural exports.

The subsidy provisions in agriculture differ from those applying to non-agricultural products in two important ways. First, the Agreement on Agriculture envisages reduction commitments on both domestic support measures and export subsidies. These commitments are conceptually comparable to the commitments traditionally made in negotiating rounds on import tariffs and have no counterpart in the non-agricultural sector, nor for that matter in the services area. Second, the reduction commitments on export subsidies underlie the reality that unlike subsidies on manufactures, the original efforts at disciplining agriculture protection did not contemplate the possibility of eliminating export subsidies. At the Sixth WTO Ministerial Meeting held in Hong Kong in December 2005, however, Members agreed to eliminate export subsidies in agriculture by 2013. This will have the effect of establishing parity in the treatment of export subsidies on manufactures and agricultural products.

The Agreement also has a range of S&D provisions, involving lesser liberalization commitments and higher *de minimis* thresholds. Least-developed countries are exempted from making any trade liberalization commitments. Developing countries have been anxious to ensure that a situation of high dependency on agriculture is not complicated in any way by liberalization commitments and have therefore been emphasizing the desire for flexibilities in commitments.

The General Agreement on Trade in Services (GATS) adopts a different approach to subsidies.

The General Agreement on Trade in Services (GATS) has adopted a very different approach to subsidy disciplines than that found on the goods side. Subsidies, like other measures affecting trade in services, are subject to the obligations of the Agreement, notably national treatment (Article XVII) and most-favoured nation treatment (Article II). While it does not prevent the granting of subsidies, the national treatment obligation disciplines the use of discriminatory subsidies in sectors where commitments are taken and where no relevant limitations are scheduled. As such, it arguably can impose some restraint on the ability of governments to subsidize. In practice, however, many Members have inscribed national treatment limitations in their schedules of specific commitments allowing them to use discriminatory subsidies in certain or all sectors.

Article XV of the GATS contains a negotiating mandate on subsidies, with a view to developing the necessary disciplines to avoid trade distortive effects that subsidies may, in certain circumstances, have on trade in services. The mandate specifies that Members shall address the appropriateness of countervailing procedures, that the role of subsidies in relation to development programmes of developing countries shall be recognized, and that the need for flexibility, particularly for developing country Members, shall be taken into account. These negotiations, which are ongoing in the Working Party on GATS Rules, have not progressed significantly since they began 1995. In addition, concerns have mounted over the widespread disregard of the obligation contained in Article XV calling on Members to exchange information on services subsidies. The Hong Kong Ministerial Declaration (Annex C, paragraph 4(c)) calls on Members to intensify their efforts to expedite and fulfil the information exchange required for the purpose of the negotiations under Article XV of the GATS.

Complex issues underlie the question whether developing countries should, under certain conditions, be permitted to continue to apply subsidies to manufactured exports.

Export subsidies on non-agricultural goods are prohibited by the Agreement on Subsidies and Countervailing Measures, but S&D provisions allow specified developing countries meeting certain economic criteria, including a maximum per capita income threshold, to continue to use such subsidies until they no longer meet these criteria. Other developing countries continue to press for this right. Standard analysis based on perfect competition assumptions concludes that export subsidies only confer costs on the subsidizing country. But if the perfect market assumption is relaxed and the possibility of dynamic externalities is allowed (e.g. an infant industry with higher private than social learning-by-doing costs), then the case for a welfare-increasing production subsidy which for implementation purposes is conditioned on export performance criteria may be constructed. An "infant marketing" case can also be made. On the other hand, such subsidies can be significantly distorting, thus contributing little or nothing to development. In addition, subsidies may attract nullifying remedial action by trading partners which turns financial outlays into wasted resources. Subsidy competition among countries may also occur.

Although the literature supports the idea that export promotion strategies have advantages over import substitution policies, a good deal of empirical literature suggests that export subsidies have not been a common element in stories of successful economic diversification and industrialization in developing countries. On the contrary, subsidy outlays have been wasted and the policy has carried additional economic costs such as rent-seeking domestically and rent transfers to powerful companies that bid up benefits in exchange for location decisions. On the other hand, a strand of empirical literature points to some success in the case of export processing zones (EPZs), which seemingly have contributed in some cases to job creation, income generation and positive spillovers to the domestic economy (such as the transfer of entrepreneurial skills).

The design of EPZs tends to reflect a combination of policy instruments, not all of which are equally trade-distorting. Nor are all of these instruments necessarily subsidies, or export subsidies, in the WTO sense of these terms. The provision of adequate infrastructure, reliable institutions and minimal bureaucratic red tape in EPZs have the characteristics of so-called functional policies that are generally considered as market friendly interventions in the literature. Duty and tariff reductions for companies based in EPZs share characteristics of so-called "permissive policies", i.e. policies aimed at removing distortions created by policies that deter exporting or more generally the development of new activities. Ideally developing countries would want to employ these particular functional and permissive policies in the entire economy, but it may in practice be difficult to do so at a particular level of development. Some observers, therefore, consider EPZs to be useful stepping stones towards a fully open and integrated economy. Other policies applied in EPZs are instead likely to introduce new distortions. This is, for instance, likely to be the case for tax exemptions or direct financial transfers to companies located in the zones. Such policies have often been used to attract FDI, with very mixed results.

It has also been argued in the literature that the existence of EPZs may create a protectionist bias in the long-run, as companies based in an EPZ have no incentive to lobby for further liberalization. In order to determine the degree of S&D warranted in this area, it would therefore be useful to consider whether EPZs are a step towards further economy-wide reforms or whether they reduce the need to liberalize the rest of the economy. Efforts to make subsidy practices WTO-consistent will tend to minimize trade distortions. Export subsidization in the context of EPZs or by other means should be undertaken against very strong cautions about the dangers of destructive subsidization. Governments need to confront the real risk that they might espouse subsidy policies that contribute nothing to development, waste resources, and compromise development opportunities.