

INVESTMENT INCENTIVES

Growing use, uncertain benefits, uneven controls

An exploration of government measures to attract investment

November 2007

Prepared by:

Kenneth P. Thomas, University of Missouri-St. Louis

Prepared for:

The Global Subsidies Initiative (GSI)
of the International Institute for Sustainable Development (IISD)
Geneva, Switzerland



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Abbreviations and acronyms

ACOA	Atlantic Canada Opportunities Agency
ACORN	Association of Community Organizations for Reform Now
ACT	Australian Capital Territory
AIT	Agreement on Internal Trade (Canada)
AMD	Advanced Micro Devices
BIT	bilateral investment treaty
CAFTA	Central American Free Trade Agreement
CBA	community benefits agreement
CEO	chief executive officer
CORFO	Corporación de Fomento de la Producción (Chile)
DATAR	Délégation à l'Aménagement du Territoire et à l'Action Régionale (France)
DG	Directorate-General (European Union)
EATR	effective average tax rate
ECJ	European Court of Justice
ESR	Export Sales Relief (Ireland)
EU	European Union
FDI	foreign direct investment
FTA	free trade agreement
FTZ	free trade zone or foreign trade zone
GATT	General Agreement on Tariffs and Trade
GATS	General Agreement on Trade in Services
GDP	gross domestic product
GGE	gross grant equivalent
GNP	gross national product
IBM	International Business Machines
IIA	investment incentive agreement
IICA	Interstate Investment Cooperation Agreement (Australia)
IMF	International Monetary Fund
JETRO	Japan External Trade Organization
LLC	limited liability corporation
M&A	mergers and acquisitions
MAI	Multilateral Agreement on Investment
MNC	multinational corporation
MSF	Multi-Sectoral Framework
NAFTA	North American Free Trade Agreement
NGA	National Governors' Association (U.S.)
NIS	New Israel shekel
NSW	New South Wales
OECD	Organisation for Economic Co-operation and Development

OPIC	Overseas Private Investment Corporation
PDR	People's Democratic Republic
R&D	research and development
RIM	Research in Motion
(A)SCM	(Agreement on) Subsidies and Countervailing Measures
SEZ	Special Economic Zone
SME	small and medium-sized enterprises
SMIC	Semiconductor Manufacturing International Corporation
TIF	tax increment financing
TILMA	Trade, Investment, and Labour Mobility Agreement (Canada: British Columbia and Alberta)
TRIMS	(Agreement on) Trade-Related Investment Measures
U.K.	United Kingdom
UNCTAD	United Nations Conference on Trade and Development
UPS	United Parcel Service
U.S.	United States
WTO	World Trade Organization

Definitions

An *investment incentive* is a subsidy given to affect the location of investment. The goal may be to attract new investment or to retain an existing facility.

A *subsidy*, in turn, is money given to a firm by government. This can take many forms: cash grants, tax measures, loans at below-market interest rates, loan guarantees, capital injections, guaranteed excessive rates of profit, below-cost or free inputs including land and power, and purchasing goods from firms at inflated prices. This list is not exhaustive, but includes the type of support used in virtually all subsidies. In this work, I use the EU term “state aid” as interchangeable with “subsidy.”

It is important to keep in mind that the definition of a subsidy is necessarily incomplete. When an activity is regulated by a governmental or supranational authority, those whose actions are being regulated often attempt to find unregulated ways of doing something if the relevant regulations forbid it. Thus, Despina Schina (1987) notes that the European Union definition of state aid is probably deliberately vague, in order to prevent governments from evading a fixed definition.

In this work, “investment incentive,” “incentive,” “location aid,” “location incentive,” “investment aid,” and “investment subsidy” will all be used interchangeably.

Specificity: The extent to which a support is limited in its application to a particular recipient or group of recipients. This may be determined at the level of a firm, industry, region, or purpose.

Aid intensity: The amount of a subsidy in relation to the amount of investment or number of jobs created.

Export subsidy: A subsidy that is conditional on exports from the granting country.

Operating aid: A subsidy that supports ongoing production not tied to investment.

Poaching or piracy: The use of investment incentives to induce the relocation of an existing facility. “Poaching” is the more common term in Canada, while “piracy” is generally used in the United States. It may also be expressed as “job poaching” or “job piracy.”

1 Introduction

This report analyzes governments' use of investment incentives. These subsidies are designed to induce an investor to choose one location over another, affecting the location of an investment. They can thus be distinguished from production subsidies, which are not contingent on investment, but are instead based on normal production.

Investment incentives have been around for over 100 years. In 19th century America, cities offered money to railroads in order to have the railway pass through them (Sbragia, 1996). But it was only in the late 20th century that governments around the world began offering direct grants, tax breaks, training funds, free infrastructure and other inducements to attract corporate investment. While often thought of as a competition to attract foreign direct investment, competition is equally strong for domestic firms. The most intense competition and the largest subsidies are given to well-known multinational companies who make large investments. At the local level, incentives are often given to real-estate developers and retail projects in order to capture tax revenue that would otherwise go to another jurisdiction.

Why study investment incentives? First of all, these incentives represent very large sums of government spending and foregone revenue. The European Commission reports that, in 2005, € 8.4 billion (approximately US\$ 11.7 billion at current exchange rates) were distributed in regional aid throughout the European Union (European Union, 2006b, Table k5–4). However, regional aid is by no means the only type of subsidy used in the EU as an investment incentive, so the actual figure is surely far higher.¹ In the United States, state and local governments gave an estimated US\$ 26.4 billion in investment incentives in 1996 (Thomas, 2003). In 2002, Alan Peters and Peter Fisher estimated a total of US\$ 40 to US\$ 50 billion was distributed (cited in Peters and Fisher, 2004: 28). Comparable figures for developing countries are not available, but are surely much lower. In terms of overall subsidies, the World Trade Organization (WTO) (2006a: xxx) reports, “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.”² This would indicate that state and local incentives in the United States, US\$ 50 billion, are almost as large as total subsidies in developing countries. Since incentives are only a portion of total subsidies, it follows that incentives in developing countries are much lower. Second, investment incentives may increase economic growth. Third, they share three potential problems with all subsidies to capital: they may reduce economic efficiency; they arguably increase income inequality by transferring revenue from average taxpayers to owners of capital; and they may encourage projects that are environmentally harmful or that artificially increase the production of polluting industries. Fourth, globalization and government decentralization are pushing many sub-national governments into offering investment incentives, even in developing countries less able to afford it. Numerous examples exist in countries such as Brazil, India and China (Oman, 2000; Markusen and Nesse, 2007). Fifth, we worry about subsidies because they distort competition among firms. While this is related to the efficiency issue, it is also a question of fairness in how government policy treats different businesses. Sixth, investment incentives affect trade patterns because they affect the location of investment. Indeed, state and local incentives in Washington State figured importantly in the EU's 2004 WTO complaint against U.S. subsidies to Boeing,³ for example.

¹ In the same report, DG Competition notes that subsidies totalling € 11.3 billion were given in “A”-level assisted regions (which are the poorest in relation to the EU average, and therefore ones where the Commission would be most likely to approve the granting of incentives by a Member State) in 2005. On the other hand, not all regional aid functions as investment incentives, meaning it is impossible to determine precisely what is given by EU Member States as incentives, even though all subsidies must be reported to the Commission.

² As this figure is based on national accounts data on subsidies, which does not include tax concessions, it therefore severely underestimates U.S. subsidization, as tax measures are a much bigger component of subsidies than in other OECD countries (Thomas, 2000: 150–151).

³ See WTO. “United States – Measures affecting trade in large civil aircraft,” 2007, <www.wto.org/english/tratop_e/dispu_e/cases_e/ds317_e.htm>.

How to deal with incentives has figured prominently in the Uruguay Round of the General Agreement on Tariffs and Trade (GATT) and in the abortive negotiations for a Multilateral Agreement on Investment (MAI).

Moreover, there is substantial evidence that the use of location incentives is increasing. Building on a set of reports commissioned by the OECD Development Centre, Charles Oman (2000) documents the spread and intensification of incentive competition in all regions of the world except Africa and the Pacific. However, he notes that in Western Europe, while competition is intense, there has been no recent intensification; rather, award rates tend to be falling even though bidding wars over individual projects have by no means disappeared (2000: 70). Blomström and Kokko (2003: 4–5) point out that since WTO commitments restrict the use of trade policy, and capital markets restrict exchange rate manipulation,⁴ the use of investment subsidies is one of the few tools policy-makers have remaining at their disposal to affect domestic economic outcomes. Thomas (1997), using host-multinational corporation (MNC) pairs through time (Ford and the U.K., Chrysler and Illinois, etc.), similarly finds an intensification, as do Markusen and Nesse (2007: 4–8).

1.1 Scope of this work

The geographic scope of this work is the easiest to state: it is global, as countries all over the world distribute investment incentives of some kind.⁵ A number of examples will be provided in Chapter 2, though for the sake of brevity this report will not cover incentives in every country.

Determining when a subsidy is an investment incentive is not always straightforward. Both intent and specificity are important in deciding when a subsidy is an investment incentive. Many incentives consist of “packages” of different types of subsidies, all contingent on the company making an investment. For example, in the province of Ontario, Canada, most firms receiving incentives are awarded a C\$ 5,000 per job grant for up to three years. However, there are also monies available through the Automotive Investment Strategy Fund and the Innovation Fund that are available under some circumstances. Thus, Research and Development (R&D), training and sectoral support can all, at times, constitute an investment incentive. Even the availability of an operating incentive may be used as an item in investment-attraction packages. The Canadian province of British Columbia, for example, highlights its ongoing tax exemptions for R&D expenditures (British Columbia Ministry of Economic Development, 2006). Still, whether this constitutes a subsidy depends on its *de jure* and *de facto* specificity.

Specificity, or rather the lack of it, is the reason that this work does not deal with tax competition, particularly in the area of competition concerning rates of tax. While there are definite similarities between tax competition and subsidy competition, and a grey area between them, the lack of specificity necessitates placing tax competition outside the scope of this work. Changes in the rate of corporate income tax apply to all corporations in an economy, whereas investment incentives could be as specific as applying to a single firm, making for a much greater possibility of distorting market competition in the latter case than in the former.

To give an example of the difficulty in where to draw the line, take the case of the former Irish policy of a corporate income tax rate of 10 per cent for manufacturing (for a deeper examination, see Thomas, 2000, 94–95). Starting in the late 1950s, Ireland’s economic development strategy revolved around attracting foreign MNCs, with the main attraction being Export Sales Relief (ESR), which exempted all export profits from corporation tax (Jacobsen 1994). As part of the negotiations for Ireland’s accession to the EU in 1973, the Commission insisted that ESR be terminated because it was an export subsidy, and state aid law does not permit export subsidies on intra-Community trade. To provide a similar incentive for foreign multinationals to invest in Ireland, the Commission agreed to a 10 per cent manufacturing corporate income tax rate. Thus, the

⁴ These effects are even stronger within the European Union, which negotiates trade agreements on behalf of its Member States, and where the European Central Bank determines monetary policy for the Eurozone (2003: 3).

⁵ One indicator of their extent is the fact that Kluwer’s *Global Guide to Investment Incentives and Capital Formation* lists investment incentives in 84 countries. In 60 of these countries, cash grants or near-cash tax credits, are available.

Competition Directorate, in drawing up its original “Surveys” on state aid in the late 1980s, deemed this tax rate to be part of the “general macroeconomic framework” of the country (i.e., the basic structure of taxes, government spending and interest rates), and therefore not state aid. (By contrast, DG-Competition did consider Ireland’s 10 per cent tax rate on companies in the financial services sector to be more industry-specific and hence a state aid).

However, in 1998 the Commission reversed its position, ruling that not only was the manufacturing tax rate a state aid, it was an “operating aid” and, as such, had to be terminated. Competition Directorate policy has long deemed operating aid to be far more likely to distort competition than investment aid, and much harder to justify under the provisions of the Treaty of Rome. As a result of this pressure, Ireland increased its corporate income tax to 12.5 per cent for all corporations, not only manufacturing firms.

Whether rules affecting the tax base constitute a subsidy or a general measure depend on their specificity; however, this paper posits that it also depends on how common those rules are among a country’s trading partners. The most important example is accelerated depreciation. While accelerated depreciation for a single industry is specific enough to be deemed to be state aid in the European Union, accelerated depreciation applying to all industries, as in the United States, is more difficult to interpret. My view is that if this tax treatment were similar throughout, say, the OECD, it would not be an incentive to invest in the United States rather than other countries. However, since the U.S. rules are in fact uncommon (certainly in comparison with the EU), it does constitute an investment incentive (see Thomas, 2000: 157–158).⁶ That said, in this study, such generalized accelerated depreciation will not be examined.

The distinction between an operating subsidy and an investment subsidy is an important one for this report. Sales tax reductions for ongoing operations (but not, for example, sales tax reductions or exemptions on the purchase of capital goods), to the extent that they are a subsidy at all, are operating subsidies and outside the scope of this work.

Another important distinction to bear in mind is that which exists between economic and regional development. In this report, “economic development” refers to decentralized policies to improve the economic well-being of a given jurisdiction. “Regional development” refers to central government policies to increase the income of poorer parts of its territory. Within Europe, France and the U.K. have a long history of regional development policies, though they are hardly alone. Economic development policies are most common within federal countries like the United States, Germany, Canada, or Australia (Canada also has some regional policies, the most important of which is the Atlantic Canada Opportunities Agency or ACOA). However, in Germany, even economic development has aspects of regional development because the state aid rules of the European Union advantage the poorer *Länder* in their competition with richer ones. EU-wide regional policy began with the inauguration of the European Regional Development Fund in 1974 (Thomas, 2000: 73).

Finally, this work does not cover incentives given for outward investment. While the European Union began publishing data on state aid for foreign direct investment by small- and medium-sized enterprises in 1999 (Thomas, 2000: 88–89), there is little research on this area and more would be welcome.

1.2 Why do governments give investment incentives?

Thomas (2000, 2007a) argues that governments compete for investment using location subsidies for two reasons; their need for investment and the fact that capital is mobile.⁷ The first element requires governments

⁶ Several experts outside the United States have told this author in private correspondence that they do not consider this to be a subsidy due to the lack of specificity. Opinions in the U.S. are mixed. The estimate of U.S. subsidies in Thomas (2000) is set up in such a way that the reader can include or exclude generalized accelerated depreciation from the totals.

⁷ The literature on these issues is voluminous. Some key works include Lindblom (1977); Winters (1996); Thomas (2000); and Sinclair and Thomas (2001).

to negotiate with owners of capital over the conditions of investment; while the second creates the competitive aspect of this relationship insofar as a given investment potentially could be located in more than one jurisdiction.

In addition to these structural factors, governments face political pressure to “win” investment and thereby gain employment and tax revenue. Moreover, there is substantial press coverage emphasizing the importance of providing incentives to attract investment, some of which derives from the activity of site-location consultants such as Fantus and Site Location International, among others (LeRoy, 2005). Finally, important policy currents suggest the necessity of attracting foreign direct investment (FDI) as a key to economic development, leading to the conclusion that it is crucial to use incentives to gain FDI.

1.3 Overall findings

While it should be emphasized that there are no points on which researchers are in unanimous assent, several conclusions are widely shared. First, we do not know as much about incentives as we ought to, because the transparency of government subsidy use varies not only between democratic and non-democratic governments, but also among democratic governments themselves. Lack of transparency hinders academic and policy analysis, and it hampers popular participation in decisions over taxpayer resources. Second, while there is no smoking gun, a number of studies have reached conclusions suggestive of a strategic interaction among jurisdictions using incentives to attract investment. That is, government A’s use of location aids reduces investment going into neighbouring government B at the margin. If two governments offer incentives for a particular investment, they may well cancel out, and an investor will respond to a questionnaire that incentives did not drive its final decision. This is not the same thing as saying that if only one government offered incentives, it was no more likely to receive the investment than if both offered subsidies (Guisinger, 1985). As Chapter 2 and subsequent chapters make clear, few jurisdictions have been able to avoid offering incentives even when they have shown evidence of wanting to stay out of the incentive game.

Third, a jurisdiction “winning” an investment with incentives may not be unambiguously better-off due to hidden costs that are often ignored (such as the true likelihood the investment would have been made even absent the subsidy, administrative costs, opportunity costs of the money tied up in the incentive, inefficient allocation of investment capital, harm inflicted on existing firms that may even be located in the “winning” jurisdiction and the pressure placed on competing jurisdictions to offer incentives that will harm one’s own companies in the future). Moreover, from the point of view of a country or the world as a whole, the harms elsewhere will likely exceed the benefits to the “winning” jurisdiction. There may still be good reasons for subsidizing investors, but they are likely to be based on equity claims or on counteracting pre-existing distortions.

Fourth, investment incentives are mainly the tool of industrialized countries, though increasing numbers of developing countries have adopted incentives recently in an attempt to counter their use by the North. A few examples notwithstanding, the general trend is strongly in the direction of rich nations using subsidies to induce firms to maintain jobs in relatively higher-paying regions of the world. As Bartik (1991) points out, it would increase world welfare to move jobs from low-unemployment areas to high-unemployment areas: it appears, then, that the global use of investment incentives has exactly the opposite result.

Fifth, the environmental consequences of investment incentives are unclear and substantially under-researched. Since incentives are mainly being used to keep economic activities in the North, it is unlikely that incentives *per se* have the effect of encouraging investment in pollution haven countries, though individual exceptions are surely possible. However, the frequency with which incentives have gone to projects harming the environment is not known.

Finally, incentives cost a lot of money, though no one knows exactly how much. The cost is exacerbated by the increasing mobility of capital and by information asymmetries between governments and investors, with the latter often manipulating this asymmetry through the use of site-location consultants.

1.4 Plan of this work

Chapter 2 takes the reader on a global tour, giving examples of illustrative incentives provided by governments around the world.

Chapter 3 focuses on general theoretical issues, especially what I call “the three E’s” of efficiency, equity, and environment. Subsidies have potential drawbacks in all of these areas, and I address each in turn, as well as the related issue of tax-burden shifting. Next, I turn to the question of whether incentives actually affect the location of investments. Finally, I consider whether incentives affect the technological choices of firms, and the possible effect of this on the environment.

Chapter 4 considers several competing perspectives on investment incentives: first, the positive interpretations (based in particular on Tiebout’s well-known analysis, Tiebout, 1956) that emphasize the potential efficiency-enhancing results of incentive competition; second, the negative interpretations (often based in Prisoner’s Dilemma analysis or on the under-provision of public goods); third, the local vs. global efficiency matrix approach pioneered by Rodriguez-Pose and Arbix (2001), and subsequently used in several OECD reports.

Chapter 5 addresses the literature on investment incentives. This chapter critically reviews several literatures: game-theoretic analyses, statistical studies and case studies addressing the following questions. Do investment incentives affect economic growth? Is incentive competition good policy? Is it good policy for developing countries?

Chapter 6 puts a number of policy issues under the microscope. These include: transparency; evaluating the costs and benefits of incentives; auditing, or the lack thereof; rent-seeking; spillovers; research and development; the politics of incentives; and designing incentives to maximize benefits and minimize risks for host governments.

Chapter 7 presents three detailed case studies on incentives. The first concerns the call centre industry. It focuses in particular on the use of incentives in the spread of this industry to India, South Africa, Egypt, the Philippines and parts of the Caribbean, plus the incentives in near-shore jurisdictions like Canada, as well as some cases in the United States where the use of incentives has been credited with a decision in their favour over competing jurisdictions in India. The second case is the use of incentives for biofuel production facilities (note: *not* general subsidies to biofuels) in the United States, Canada, Europe and Asia. The third case is microchip fabrication, which pits several locations in the United States and Europe against developing countries like Malaysia and Singapore. In addition, there is a brief recounting of selected bidding wars for auto facilities in both the industrialized and developing world.

Chapter 8 discusses the numerous attempts to discipline investment incentives. First, I analyze the rules and effectiveness of the most comprehensive disciplinary effort, that of the European Union. The general outline of rules as well as the most important framework applying to investment incentives *per se*, the Multi-Sectoral Framework on Regional Aid for Inward Investment, is considered. Second, I analyze the various rules in the GATT Uruguay Round agreement that affect subsidies, including the Agreement on Subsidies and Countervailing Measures, the General Agreement on Trade in Services and the Agreement on Trade-Related Investment Measures. Third I will analyze two sub-national agreements on incentives among Canadian provinces and territories and among Australian states. Both agreements now have enough of a track record to assess whether they have been successful or not. Finally I will analyze disciplines in a very few of the many bilateral investment treaties (BITs) in force around the world, as well as the proliferation of rules on performance requirements in bilateral and regional free trade agreements.

Chapter 9 sums up what we know and, perhaps more importantly, what we still do not know and can be usefully addressed by further research.

2 Prevalence of incentives

This chapter details the prevalence of incentives around the world. It takes the reader on a global tour of investment incentives and gives examples of illustrative incentives provided by governments on all continents. Much of the discussion is based on the Kluwer publication, *Global Guide to Investment Incentives and Capital Formation*. However, even with the existence of fairly comprehensive sources on incentive programs, a great deal remains unknown about programs, but even more so on arrangements for individual firms. What is clear is that the use of location subsidies is pervasive and few countries are able to avoid their use.

For each region, an introductory discussion is followed by examples of specific incentives.

2.1 North America

The North American Free Trade Agreement (NAFTA) is characterized by the widespread use of investment incentives. Nevertheless, there is substantial variation among the three NAFTA member states. While Canada, Mexico and the United States all have federal systems, each country has a different level of centralization of incentive use. In the United States, every level of government, from the federal to the local, is free to use investment incentives, and all do. State and local governments provide substantial incentives that are usually firm-specific and subject to negotiation. All 50 states and thousands of local governments provide location subsidies. By contrast, the federal government's incentives are usually not firm-specific, and are often automatic, such as accelerated depreciation.

In Canada, seven of the country's 10 provinces prohibit local governments from providing incentives to firms. In an eighth—Alberta—the recently commenced (1 April 2007) Trade, Investment, and Labour Mobility Agreement (TILMA) with British Columbia will, in principle, end the power of metropolitan governments to provide business subsidies. Only in Manitoba and Saskatchewan, whose combined population is just over 2 million, are local governments still empowered to provide incentives. As these municipalities have less taxing power than their U.S. counterparts (in particular, general sales taxation in Canada is at the federal and provincial levels only, though Toronto is championing a push for the federal government to distribute to cities 1 cent of the 6-cent Goods and Service Tax; see *The Economist*, 21 July 2007), the significance of local incentives is less than it would be in comparable U.S. states. Moreover, these two provinces have relatively few municipalities. Thus, the incentive game in Canada is basically played at the provincial level and is much more highly centralized than in the United States. For large incentives, such as in the automobile industry, there is often federal as well as provincial participation in the awarding of subsidies.

Mexico offers several sets of incentives. The *maquiladora* program in northern Mexico employed 1.2 million people in 2006 (Lindquist, 2006). For a long time, it provided comprehensive exemption from corporate income tax as well as value-added and other taxes (Byrne, 2002: 43–44). In 2000, the country introduced a 20 per cent R&D tax credit (Byrne, 2002: 44) while in 2006, the government extended *maquiladora* benefits to domestic exporters, suppliers of *maquiladoras* and allowed *maquiladora* manufacturers to outsource some of their production without losing benefits (Lindquist, 2006).

The U.S. federal government allows for accelerated depreciation, which in the view of many observers provides an incentive to invest in the United States rather than other countries where widely available accelerated depreciation is not available. Accelerated depreciation for machinery and equipment was estimated to have cost the U.S. Treasury US\$ 44.7 billion in Fiscal Year 2004 (GAO, 2005: Table 2, p. 34). An example of a federal incentive for a specific region is the 90 per cent corporate income tax exclusion for qualifying manufacturers in the U.S. Virgin Islands (Diamond and Diamond, 2006: Section 46.02 [B], p. 46–38).

There are many thousands of subnational incentives in the United States, but it suffices to list just a few here. North Carolina introduced the William S. Lee Quality of Jobs and Business Expansion Act in 1996.⁸ This legislation divided the state into five “tiers” of economic need, with Tier 1 being the most distressed and Tier 5 the most prosperous region. In its first three years of existence (fiscal 1997–99), an average of US\$ 30.5 million in tax credits was claimed, with another US\$ 313 million carried forward from those years. Early evaluations showed that Tier 5—with 47 per cent of the population and the least economic need—received 67 per cent of the tax credits under the Lee Act.⁹ Lee Act incentives formed part of the packages awarded to Federal Express and Dell, both of which were beneficiaries of amendments weakening the law’s job-quality requirements (Craver, 2005). By 2006, the average annual amount of Lee Act tax credits claimed had doubled to US\$ 65 million a year, with a total of over US\$ 1 billion in credits generated but not yet claimed (Hall, 2006).

In Missouri, tax increment financing (TIF) is a local government incentive available statewide that has been used for projects as diverse as upscale housing renovations in St. Louis, the corporate headquarters of H&R Block in Kansas City, and malls and other retail facilities all over the state (Missouri Department of Economic Development, 2007). In the 2004 to 2006 period, Missouri municipal governments approved an average of US \$339 million annually in TIF subsidies (calculated from Missouri Department of Economic Development, 2007).¹⁰ Tax increment financing is used in virtually every state and is highly regarded by economic development officials for its flexibility (Tomme, 2005: 218).

In Canada, Ontario plays in the big leagues of auto assembly plants, having created a C\$ 500 million “Auto Investment Strategy Fund” in 2003, which it supplements with another C\$ 500 million “Innovation Fund” for research-intensive projects. In addition, the federal government often participates in incentive packages for the auto industry (Site Selection, 2005). All the provinces have attracted call centres (see Chapter 7), primarily using job creation and training incentives, though the city of Edmonton itself provided Dell with free land and a property tax exemption for a call centre in 2004. Another important area of incentive competition is for film and television productions (with British Columbia, Ontario and Quebec the most important locations), a market shared with not only Hollywood but many U.S. states and a number of foreign countries (for the United States, see Axiom International, 2007).

2.2 Central and South America

Latin America has seen numerous attempts at regional integration, the most ambitious of which is Mercosur, the Common Market of the South. Mercosur, signed in 1991 between Argentina, Brazil, Paraguay and Uruguay, has repeatedly seen tensions between its largest and smallest members, as well as between Brazil and Argentina (in particular over the automobile industry). In 2006, Venezuela was admitted as a full member, but the likelihood is growing that its membership will not be ratified due to a dispute with Brazil (*The Economist*, 7 July 2007). In addition, the United States has a bilateral free trade agreement with Chile, and with the Dominican Republic and a number of Central American nations through a regional FTA, the Central American Free Trade Agreement (CAFTA). Throughout Latin America, investment incentives are common and, in Brazil, even legendary. The “fiscal war” among Brazilian states in the 1990s led to some of the highest per-job amounts of incentives the auto industry has ever seen (see discussion in Chapter 4 and Rodriguez-Pose and Arbix, 2001).

⁸ This summary relies heavily on Corporation for Enterprise Development, “Focus: Business incentive reform – examples of business incentive reform,” undated but approx. 2002, consulted 4 June 2007 at <www.cfed.org/focus.m?edit=0&parentid=1629&id=1642&siteid=1629#content8>.

⁹ In 2006, the North Carolina legislature reduced the number of Lee Act tiers from 5 to 3. “State legislative update,” November 2006, Site Selection Online, consulted 4 June 2007 at <www.siteselection.com/issues/2006/nov/legislative>.

¹⁰ Average values are reported due to wide annual fluctuations. The actual figures were US\$ 686.9 million in 2004, US\$ 205.7 million in 2005 and US\$ 124.2 million in 2006.

Costa Rica has used its free trade zones (FTZs) to attract companies such as Intel and Sykes, the latter being one of just the many call centre operators to set up in recent years. The zones offer a 100 per cent tax exemption for eight years, with a 50 per cent exemption for a further four years. There are no taxes on imported materials, and 100 per cent exemption from the value-added tax (CINDE, n.d.).

Panama is well known as a tax haven and a shipping flag of convenience (Murphy, 2004: 48, 83). But, it seeks also to attract foreign direct investment. The country provides tax credits of up to 20 per cent of local value-added for exported products (Diamond and Diamond, 2006: 14–26).

Chile uses incentives rather sparingly, primarily for regional development and to attract high-tech investments. For example, under D.F.L. 15, investments in specified regions can receive a 20 per cent grant for fixed assets, excluding land. Chile's economic development agency, the Corporación de Fomento de la Producción (CORFO), provides support for high-technology investment in areas such as software, call centres, and back-office operations (Chile Foreign Investment Committee, n.d.). It awards approximately US\$ 80 million annually in subsidies (CORFO, n.d.).

Brazil provides both tax credits and tax exemptions (up to 50 per cent of liability) for investments in the Amazon region and the Northeast (Diamond and Diamond, 2006: 49–20 through 49–21). Brazilian states have been very active in investment promotion via tax incentives.

2.3 Middle East

The oil kingdoms of the Middle East are generally characterized by low tax regimes for non-oil industries and generally provide few investment incentives. This is true of Bahrain, Kuwait, Oman, Saudi Arabia and the United Arab Emirates, none of which provide grants or tax credits (Diamond and Diamond, 2006: chapters 38, 40–43).

By contrast, Israel aggressively uses investment incentives to attract investment in such industries as computers and semi-conductors. Cash grants are available in most areas of the country, with higher levels given in priority areas (Diamond and Diamond, 2006: 39–17). This can range as high as 24 per cent (plus an 8 per cent increment in the Negev) for industrial projects under NIS 140 million (approximately US\$ 33 million) or hotels. Alternatively, firms can choose a 10-year tax exemption or some combination of grant and tax exemption. Well-known foreign multinationals in the country include IBM, Motorola, Siemens and Intel (Invest in Israel, 2007).

2.4 Africa

The economic, political and social difficulties of Africa are well known. A number of governments there do, nevertheless, offer investment incentives to foreign producers. Most African countries benefit from some sort of preferential trade agreement with industrialized countries, whether through ex-colonial ties, rules relating to the generalized system of preferences, or free trade agreements with the European Union.

While Egypt does not provide grants or tax credits (Diamond and Diamond, 2006: 2–21), the country has been active in trying to attract investment. Many tax holidays are available, and there are several free-trade zones, including several devoted to information technology, such as the “Smart Village” (www.smartvillage.com).

Morocco has regionally differentiated incentives, with few subsidies available in the Casablanca region (Diamond and Diamond, 2006: 6–5). Elsewhere in the country, a dizzying array of incentives is available. Grants of up to 20 per cent for capital equipment, tax credits up to 20 per cent, five- and 10-year tax holidays in the least developed areas, and a host of foreign trade zone options are all available (Diamond and Diamond, 2006: 6–16 through 6–22).

Ghana has become active in courting investors since John Kufuor became president in 2000. Ten-year tax holidays are widely available, as well as exemption from import duties on manufacturing machinery (*Africa News*, 2007).

South Africa is the largest economy in Africa and recently was tapped for possible membership in the Organisation for Economic Co-operation and Development (OECD, 2007). Its investment incentives include a 30 per cent grant for so-called Critical Infrastructure, a 15 per cent foreign investment grant and a free trade zone program (Country Finance Select, 2006). In March 2007, the government introduced location subsidies for call centres of up to approximately US\$ 8,570 per seat, with a total of US\$ 154 million budgeted through March 2011 (SouthAfrica.info, 2007). In the automobile sector, the Motor Industry Development Program provides substantial (though complicated) benefits to the industry, including a 20 per cent investment grant (Flatters, 2005).

2.5 Europe

In the 27-nation European Union, investment incentives are governed by a body of wider law on state aid (see Chapter 8). One of the consequences of this system is a level of transparency unparalleled anywhere else in the world. Maximum aid intensities are fixed for every location within the EU, and can be obtained at the European Commission's Web site, ec.europa.eu.

Of the EU members, Ireland has long been known for its aggressive recruitment of foreign companies, using a combination of low tax rates and generous grants, which could have been as high as 75 per cent of investment until 1998 (Thomas, 2000: 90–93). For the 2007 to 2010 period, the maximum grant for large companies in Ireland is 30 per cent, and that drops to 15 per cent for 2011 to 13 (European Union, 2006a). Ireland also provides a 20 per cent research tax credit (CQ, 2006).

France has long-standing expertise in regional development policy, headed by the agency DATAR (*Délégation à l'Aménagement du Territoire et à l'Action Régionale*). It offers grants in development areas of up to 15 per cent of investment costs or € 15,000 per job (Invest in France, 2007).

The United Kingdom, which received over US\$ 1 trillion in foreign direct investment flows in 2006 (U.K. Trade and Investment, 2007a), provides several incentive programs. It has a regional aid scheme (known as Regional Selective Assistance or Selective Finance for Investment, depending on the region), with grants from 10 per cent to 30 per cent of the investment, depending on the severity of the regional disadvantage (Department of Business Enterprise and Regulatory Reform, 2007: file 38645). Some of these maxima will be reduced in 2011 under EU state aid rules. The U.K. actively courts film production with a 15 per cent tax credit for film-making, or 20 per cent for films with budgets below £20 million (U.K. Trade and Investment, 2007b).

Estonia, by contrast, maintains a low tax regime without location incentives, which were abolished in 2002 (Diamond and Diamond, 2006: 16A–12). The current corporate tax rate is 22 per cent, and profits are not taxed until they are distributed (Invest in Estonia, 2007).

Outside of the European Union, Russia provides numerous investment incentives. For example, profits in the pharmaceutical industry are exempt from the federal corporate income tax. St. Petersburg allows companies to deduct capital investment from their profits for the city's share of profit taxes (Diamond and Diamond, 2006: 20–18 to 20–19).

2.6 Asia-Pacific Region

The 21st century is widely expected to be the “Pacific Century.” Japan's economic rise of the 1970s is now echoed in the rapid growth of China. Economic liberalization has come to many other countries in the region as well, including such long-protected economies as India. Incentive use is widespread, too, taking place at the provincial and local levels as well as the national level.

Australia has investment incentives available at both the federal and state levels. A grant of up to 25 per cent is available from the federal government for research and development expenses of up to A\$ 250,000. States offer numerous loan programs, reduced utility costs, etc. (Diamond and Diamond, 2006: 23–21, 23–26). Five

of Australia's six states (except Queensland) have negotiated an agreement to reduce bidding wars for investments, which we will take up in Chapter 8.

New Zealand, the location for the "Lord of the Rings" film trilogy, courts film production with a 12.5 per cent rebate on production spending of over US\$ 10.5 million. Research and development is 100 per cent tax deductible (Investment New Zealand, 2007).

Malaysia offers considerable support, especially in terms of depreciation. Among its inducements are a tax holiday for 10 years and the ability to depreciate 160 per cent of the cost of building and equipment (CQ, 2006).

China is attracting substantial investment with its low labour costs and large absolute number of skilled workers. In addition, it provides a full five-year tax holiday and another five years with only 50 per cent tax liability (CQ, 2006). Cities and regions also give incentives to investors (Markusen and Nesse, 2007: 7).

Japan's prolonged economic woes have led to some interest in increasing FDI in a country that has long been very selective about foreign investment. Regional governments do not have much taxing power, meaning they have little to abate (Pilling, 2004). However, depending on the prefecture or city, subsidies for new facilities or expansions have maximums ranging from ¥ 1 billion to ¥ 8 billion (JETRO, n.d.).

India adopted new legislation for Special Economic Zones (SEZs) in 2005, with 200 approved by March 2007. As in other countries, tax breaks, labour law and regulatory concessions were the main draw (Yee, 2007).

2.7 Conclusion

Investment incentives are not a marginal or geographically-limited phenomenon. On every continent, multiple levels of governments use location subsidies to try to promote investment. While some countries run low-tax regimes with few, if any, incentives, they are the exception rather than the rule. Thus, the global significance of a study of these investment supports is likely to be substantial. In addition to the examples given here, the case studies cover more countries and provide concrete examples of the widespread use of investment incentives.

3 General theoretical issues

This chapter addresses what could be called “the three E’s”; efficiency, equity and environment. Subsidies to capital have potential drawbacks in all of these areas, and each is addressed in turn, as well as the related issue of tax-burden shifting. Next, this paper examines the question of whether incentives actually affect the location of investment, drawing on a wide secondary literature. Finally, the chapter considers whether incentives affect the technological choices of firms, and the possible effect of this on the environment.

3.1 The three E’s

Since investment incentives are subsidies, they share with all subsidies to capital three important potential drawbacks that affect efficiency, equity and the environment. This is not to say that subsidies are always bad policy; far from it. Some policy goals can be usefully addressed with subsidies, but whether the benefits will offset those potential problems when they do occur must be addressed on a case-by-case basis.

Subsidies are considered inefficient by economists for a number of reasons. First, they can artificially increase the production of the item subsidized. Unless the subsidies are correcting a market failure, this shifts an economy’s production away from its optimal mix of goods. With investment incentives, there is reason to believe that they increase the capital intensity of a project, that is, they induce the replacement of labour with capital. Moreover, investment incentives can be inefficient by causing production to take place in a location that is not the most efficient for that good or service. At the same time, a subsidy may promote efficiency if it increases activities with positive externalities, such as R&D or training, beyond what the recipients would have done in the absence of the subsidy.¹¹

The potential equity problem with investment incentives is straightforward: the incentives are paid to owners of capital, but are paid for by average taxpayers. This makes the post-tax, post-incentive distribution of income less equal than it would have been without the subsidy. However, some investment incentives have redistributive goals, i.e., regional policies aimed at increasing standards of living in poorer parts of a country. In such cases, assessing the overall distributional impact is quite difficult. On the other hand, subsidies given primarily in richer regions, as tends to be the case for R&D support (Thomas, 2000: 220–23, shows this for the European Union), have *more* negative regional distributional consequences than average.

Environmental considerations are of two types. First, if (and to the extent that) incentives artificially increase the production of a particular good, this may lead to increases in pollution. As Pearce (2003: 14) writes, “there is a *prima facie* case for supposing that subsidies which encourage more production will be environmentally harmful.” Not all investment incentives will increase production, of course, but some certainly will. An example would be the automobile industry in North America, which has long been characterized by overcapacity, yet receives many investment incentives.¹² Naturally, this effect will be bigger if the industry receiving the subsidies is more polluting to the environment. Second, the project itself may be environmentally harmful. For example, in Missouri, a number of retail projects receiving incentives have been built in a flood plain (Thomas, 2007a). The Green Scissors Campaign in the United States has identified a number of subsidies (not necessarily investment incentives) that have gone to projects that were environmentally harmful (Friends of the Earth, 1997 and 1999).

¹¹ Of course, there are practical problems in assessing the value of the externality and what would have happened in the absence of the subsidy.

¹² Farrell, Remes and Schulz (2004) report that location subsidies in Brazil led to 40 per cent overcapacity there in the late 1990s and 80 per cent in 2002.

3.2 Investment incentives and the tax burden

Another important criticism of investment incentives arises from the inescapable fact that they must be paid for somehow. That is, whether companies receive grants or tax reductions, this revenue effect must be offset: either through tax increases on other taxpayers, borrowing, or program cuts (Thomas, 2002). This is related to the question of equity, since owners of capital tend to have higher incomes than the average taxpayer. However, the evidence for a shift in the tax burden is mixed. In the United States, the case is relatively strong: the share of corporate income taxes in total taxes has fallen at both the federal and state levels (Thomas, 2000: Table 1–1, p. 8; LeRoy, 2005: Chapter 8). LeRoy reports that the Congressional Research Service found that the effective rate corporations pay for all state and local taxes has fallen from 6.93 per cent in the 1980s to 4.99 per cent in 2002 (LeRoy, 2005: 168–69). Peter Fisher (2007: 72–73) has recently confirmed this for state tax systems: corporate income tax as a percentage of total state tax revenue, and as a percentage of gross state product, have both fallen fairly steadily over the last 30 years. While he points out that this is not entirely due to competitive pressures (72–74), he shows also that incentives have played a significant role in reducing the effective corporate income tax rate on manufacturing in 20 states: “the effective tax rate before incentives declined during this period [1990–98] by about half a percentage point [4.9 to 4.4 per cent], but the rate after incentives declined even more, by 1.3 percentage points [4.4 to 3.1 per cent]. In just eight years, in other words, there was a 39 per cent drop in the effective tax rate on new investment” (70).

Outside the United States, however, the picture is less clear. As Stewart and Webb (2006) show, the share of corporate income tax in either GDP or total tax revenue is not falling for the OECD as a whole.¹³ Bénassy-Quéré *et al.* (2005: 2, Graph 1) show in the case of the European Union that the effective average tax rate (EATR) has fallen from about 31 to 26 per cent in the EU–15 countries, while in the 10 new members of 2004, the EATR has declined from about 27 to 17 per cent. Starting with a game-theoretic model that does suggest a shift in tax burden from mobile to non-mobile actors (roughly from capital to labour), they conclude that higher levels of public spending on infrastructure and education do attract investment, but that competition for investment may lead governments to reduce spending on health care and transfer payments in order to provide services that increase productivity (2005: 44).

3.3 Investment incentives and the firm’s location decision

The purpose of investment incentives is clear; to influence the location decisions of firms. Yet whether they in fact do affect corporate decision-making is still controversial. In particular, many American critics argue that incentives (and even tax differences) are of too small a magnitude to affect location decisions. LeRoy (2005: 56) is a typical example:

Internal Revenue Service statistics show that all state and local taxes make up only 1.2 per cent of the typical company’s cost of doing business, far less than labour, materials, marketing, overhead, transportation—the business basics. And then companies get to deduct those state and local taxes when they file their federal tax returns, so Uncle Sam actually foots up to 35 per cent of the bill. The bottom line: after federal deductibility, state and local taxes make up only 0.8 per cent of the average company’s costs.

Empirical studies show mixed results.

¹³ This finding may not be as strong as it appears. As Ganghof and Genschel (2005: 13–14) point out, in the majority of OECD countries, corporate income tax rates have fallen below personal income tax rates, creating an incentive for individuals to use tax-avoidance schemes that convert personal income into corporate income (this point is also made by one of the commentaries included with the Stewart and Webb article). There is some evidence this has occurred, but whether it is enough to explain the non-fall in corporate income tax revenue is unclear. In the United States, personal tax rates remain below corporate income tax rates, leading to the increased use of schemes to convert corporate income into personal income (Subchapter “S” corporations and limited-liability companies or LLCs). Fisher (2007: 72) cites an unpublished study suggesting that this has had large effects on state and local corporate taxes.

3.3.1 Surveys of investors

Surveys of investors, for many years, tended to show that incentives had little or no effect on investment decisions. These surveys tended to take one of two forms; ranking a list of location determinants, or asking directly whether incentives affect the investor's choice in general, or affected particular location decisions. With the first type of survey, the basic determinants of economic feasibility (market size, labour cost and availability, infrastructure, etc.) unsurprisingly dominated the top spots. With the second type of survey, few respondents identified incentives (or even taxes) as significant. As Guisinger (1985: 38) writes:

On the one hand, if incentives of various countries offset one another, or even only nearly offset one another, investors will state, quite correctly, that the presence of incentives in a country does not seriously influence location decision or that it does not influence them at all. This statement does not mean, however, that the absence of incentives would not affect investment location decisions.

Based on this Prisoners' Dilemma analysis of how the market for investment works, Guisinger and his team posed the question differently (1985: 39): "would a foreign investment project have located in a particular country if that country had eliminated its incentives and disincentives while other countries maintained incentive policies at existing levels?" They interviewed corporate officials regarding 74 investment projects by over 30 multinationals in four industries (autos, petrochemicals, food processing and computers) and found that in two-thirds of them, incentives "were the decisive factor—that is, in the absence of incentives, a foreign investment would not have been made, or it would have been located in another country" (1985: 48). Moreover, even if we eliminate investments oriented toward the domestic market of the host country, where the incentives tended to be tariff protection, we find that of the remaining 38 projects, 15 (39 per cent) were driven by location subsidies, 1 (3 per cent) by tariff protection, 6 (16 per cent) by what Guisinger calls implicit incentives driven by government or strategic considerations, and 16 (42 per cent) by factors unrelated to incentives (Guisinger, 1985: 48–49).

While more recent surveys have not posed the questions in this way (which is unfortunate, in the author's opinion), respondents have nonetheless been increasingly more likely to accord a significant role to incentives in their investment decisions (Markusen and Nesse, 2007:10).¹⁴ Concluding that this is the reality, they consider that increasing capital mobility has played some role in this, but even more important to this interplay has been the rise of site-location consultants and the devolution of government in the United States and elsewhere (11–14). This is consistent with the findings of Thomas (1992), that MNCs were learning how to best exploit their mobility, for example through highly public bidding wars, before the rise of site consultants; the use of location consultants disseminated this knowledge further. Blomström and Kokko (2003:4–5) also note that opinions have recently shifted on the importance of incentives on the location of investment: that more studies are finding them significant; and more business executives are willing to say they matter.

3.3.2 Quantitative investment studies

Quantitative investment studies tend to show that incentives do affect the location of investment. As Moran (1999: 100) writes: "grants, tax holidays, and reduced tax rates do, in short, play a role in multinational corporate choice among locations for investment." Pre-2000 literature reviews (summarized in Thomas, 2000: 24) generally reach this conclusion, with some arguing that more recent studies in their reviews are more likely to reach this result. For further discussion of these studies, see Chapter 5.

The author's view is that incentives do affect investment location. LeRoy (2005: 57) is correct that a site-location decision-maker will, in the final stages, only be talking to locations that are inherently profitable. However, all the other finalists are inherently profitable locations as well. Something needs to differentiate

¹⁴ In addition, De Mooij and Ederveen (2005: 25, Table 4.2, full specification; 26–27) conclude from a meta-analysis of 31 different studies with 427 estimated elasticities of the responsiveness of FDI to taxes, that more recent studies are slightly more likely to find a larger effect of taxes than older studies.

them. Not only this, but the processes of globalization mean that over time, there is an increasing number of locations that are inherently profitable for any given investment (Thomas, 2000: 28–29). Moreover, while 1.2 or 0.8 per cent of costs may not sound like much, this is money that is directly going to the bottom line and, therefore, represents a much greater percentage of profits. For example, Advanced Micro Devices (AMD), which received a US\$ 1.2 billion subsidy from the state of New York in 2006, finished 2006 with US\$ 5.6 billion in sales and a net loss of US\$ 166 million. From 2002 through 2006, the most it made was US\$ 165 million in 2005 (AMD, 2007: 51). While this is an extreme case, it is not an unprecedented level of subsidization for microchip fabrication (see Chapter 7). As Moran (1991: 24) notes, it is hard not to believe that the certain receipt of incentives that can total hundreds of millions of dollars does not affect location decisions. Finally, as Markusen and Nesse (2007) note, companies have learned that the selection process itself generates rents, and act accordingly.

3.4 Investment incentives and technological choice

While the evidence is thin, there is some reason to believe that incentives have an impact on the technological choices of investors. At the very least, it is possible to identify cases in which the availability of incentives has led investments to be more capital-intensive than they would have been otherwise. For example, Thomas (1997) pointed out that subsidies falling as a percentage of investment but rising in terms of cost per job showed that for assembly plants, the automobile industry had reached the point where it was substituting capital for labour. That is, a given amount of dollars was attracting more capital and gaining fewer jobs. This undermines the argument that incentives are “creating” jobs. It should be noted that this is a different situation from that of a government targeting high value-added jobs by trying to attract pharmaceutical, biotech, microchip and other high-tech firms.

3.5 Conclusion

Investment incentives have potential efficiency, equity, and environmental drawbacks that need to be weighed against any expected benefit they may create. For example, a regional aid may induce an inefficient location but have positive distributional consequences. There can be no blanket answer on whether this is a “good” policy or not.

In terms of tax burdens, there is some evidence, especially in the United States, that they are helping shift the tax burden from mobile to less-mobile taxpayers. However, this is not a universal finding.

There is no consensus on the critical issue of whether incentives actually affect the location of investment. Surveys of investors in the 1970s and 1980s found that incentives were not important determinants of location decisions. Recent econometric studies tend to find a slightly larger impact of taxes than older studies. Thinking of the investment location process as a Prisoners’ Dilemma, or as a rent-generating activity, should incline us to see incentives as important, but there is no smoking gun.

Finally, there is some reason to think that location subsidies may affect technological choices, in particular inclining some investment to be more capital-intensive than it might otherwise have been.

4 General perspectives on assessing investment incentives

This chapter considers several competing perspectives on investment incentives: first, the positive interpretations (based in particular on Tiebout's well-known analysis) that emphasize the potential efficiency-enhancing results of incentive competition; second, the negative interpretations (often based in Prisoner's Dilemma analysis or on the under-provision of public goods) that emphasize how the individually rational use of incentives can lead to collectively sub-optimal outcomes; third, the local vs. global efficiency matrix approach pioneered by Rodriguez-Pose and Arbix (2001), and subsequently used in several OECD reports that emphasize a weighting of gains and losses throughout a large jurisdiction.

4.1 The market for investment

Stephen Guisinger (1985) proposed the notion of a "market for investment" and divided this market into three types based on the location to be served. Investment incentives differ according to market type. Domestic-market oriented investment tends to garner the fewest incentives as the location choice is constrained to that market. Food processing is an industry that tends to fall into this category. By contrast, common-market oriented investment requires the existence of a free trade area among jurisdictions, such that the entire common market can be served from a single location. Guisinger states that such investments tend to create intense bidding wars due to the company's ability to locate in any of the jurisdictions. While his main focus is on the European Union, it can be argued that these dynamics also hold within large federal states such as the United States and Brazil. The automobile industry is an example of one where production and consumption tend to be located within the same regional market. Finally, some investment is oriented to the entire world market, as is the case, for example, for many branches of the computer industry. Certain types of computer investments may find competition coming from countries as geographically diverse as Ireland, Germany, Israel, Singapore and the United States. Again, we find that the competition among governments to obtain these investments is often intense.

4.2 Positive interpretations of incentives

There are three main ways in which it can be argued that investment incentives are beneficial. First, analysis in the Tiebout tradition suggests that there are efficiency gains available from aligning taxes and benefits. Second, some analysts argue that location incentives make it possible for investments to be made where the social benefit of the investment exceeds the private benefit of the investment, usually due to the possibility of positive externalities. Finally, strategic trade theory advises governments to use subsidies to capture rents for their country under certain restrictive conditions.

4.2.1 Efficient pricing of government services

In the mid-1950s, Tiebout (1956) argued that the fragmentation of local governments made it possible to achieve market-style outcomes for individuals in terms of their preferred package of public goods and taxes. The key to this was household mobility; with many local governments offering varying patterns of municipal services and taxation, families would move to the suburb (or central city) that most closely approximated their preferred mix. Instead of needing a political mechanism to determine voters' preferences for public goods and taxes, mobility would make it possible for people to reveal their preferences directly through their decisions on where to live. When transposed into debates on investment incentives (or even globalization; see Rogowski, 2000), Tiebout's theory has served as a basis for arguing that the presence of competition does not necessarily imply a "race to the bottom." Moreover, this competition assures efficiency.

Translated into the issue of location incentives, firms replace households, but governments (not just local, but also national) still compete to attract them to their location. In this vision, governments use incentives (and perhaps competition over corporate tax rates, which is outside the purview of this report) to offer companies a particular tax price for the services they provide. With subsidies, this price could even be negative (Fisher, 2002: 8–9). In Tiebout-inspired models, companies migrate to locations that give them their preferred combination of services and taxes.

Black and Hoyt (1989) follow this logic to conclude that competing for investment can be efficient when it moves governments to provide public services at marginal cost, rather than average cost. However, this depends on the assumption that firms and governments know the relevant investment costs at all locations—information that firms guard jealously (Thomas, 2000: 5). Moreover, in cases where the tax price is negative, it has obviously been reduced below the marginal cost of providing the services it receives. Finally, this model only addresses efficiency issues arising from the use of incentives, not equity questions.¹⁵

Bartik (1991) introduces a different sense of efficiency: in the market for investment, the jurisdictions with the greatest need (such as high unemployment) will offer the largest location subsidies. Thomas (2000) (for the European Union) and Fisher and Peters (1998) (for the United States) find that there are many instances when poorer areas are outbid for investment by richer locations. Fisher and Peters (1998: 26) conclude that: “...the antecedent conditions for Bartik’s argument that incentives may have net national benefits is not true: The spatial patterns of taxes and incentives in America is not likely to promote the redistribution of jobs from places of low unemployment to places of high unemployment.” As Fisher puts it (2007: 70): “incentive programs...are viewed as essential policy in good times and bad, in poor states and rich states.” As long as prosperous jurisdictions stay in the incentive game, less affluent areas will not catch up. The greater financial resources in the former mean they are able to offer higher incentives, and can bid on more projects than poorer areas.

4.2.2 Externalities and the social value of private investment

Dreyhaupt (2006) provides a recent example of an analysis suggesting that investment incentives can increase efficiency. The key to his analysis is that many investments have positive externalities or spillovers, making the social rate of return on the investment higher than the private rate of return on investment. There is a subset of these potential investments where the private rate of return is negative but the social rate of return is positive.¹⁶ In this situation, incentives will increase a country’s welfare by ensuring that all socially-valuable investment projects take place. However, with open competition among countries, it is possible that incentives may equal or exceed the difference between the social and private rate of return, meaning that companies appropriate the entire extra benefit and none accrues to government (2006: 146). Thus, capping incentives at the level needed to make the investment a break-even one is the ideal solution, something Dreyhaupt considers approximates what European Union state aid policy does (see Chapter 8 on disciplines for discussion of this policy). However, he admits that it is difficult in practice to determine the social value of a private investment, making overbidding more of a risk than it would be in a perfect-information situation (2006: 149).

However, this is not the only problem with the practical applicability of the model. For the incentive-granting situation to be efficient, there needs to be “a sufficiently high number of investment projects with positive externalities that take place regardless of subsidies” (2006: 146, n456). In other words, projects producing positive private returns need to be undertaken without subsidies. Otherwise, such subsidies eat into the

¹⁵ Ann Markusen raised this critique of Tiebout in 1974. See Markusen and Nesse (2007: 16–17).

¹⁶ It would seem that the cut-off point is not necessarily zero. For instance, it is hard to imagine that an investor would proceed if she expected to make less than the risk-free return of Treasury bonds. However, whether the critical point is zero, the Treasury bond rate, or even some multiple of the Treasury bond rate, there would, under the spillover assumption, still be projects where the private rate of return is lower than the cut-off point, while the social rate of return is higher.

externalities presumably available. In reality, there are countless investments occurring where the project would have been profitable without incentives (see LeRoy, 2005 for numerous examples). Investment incentives are marked by pervasive rent-seeking, and Dreyhaupt essentially assumes it away. As Blomström and Kokko (2003: 17) point out, discretionary benefits make rent-seeking a risk. This does not negate Dreyhaupt's point that restrictions on incentives can limit the scope for rent-seeking, but it means that his overall claim that incentives can be efficiency-enhancing is unproven in anything like real-world conditions.¹⁷ Moreover, like most Tiebout-inspired models, this approach only addresses efficiency, not equity.

4.2.3 Strategic trade theory

Strategic trade theory counsels policy-makers facing a specific set of circumstances; increasing returns to scale and imperfect competition (Krugman 1994: 2). In particular, this theory has been used to justify subsidies in the international airliner field, i.e., Boeing vs. Airbus. Most of the adherents to this theory admit that there may be very few industries where these dynamics hold and it is very difficult in practice to identify cases where they are relevant. In any event, strategic trade theory is not oriented toward achieving global efficiency, but for the advantages available to particular nations, so it is not a sort of universal justification for incentives comparable to Tiebout or externalities-oriented arguments.

4.3 Negative views of location subsidies

Many scholars are critical of the use of investment incentives. There are three main arguments adduced against them: they force governments to provide undesirably low levels of public services; local governments provide subsidies to companies that would invest somewhere in the larger jurisdiction anyway (for instance, U.S. states subsidizing automobile plants that would have located somewhere in the country, regardless of incentives); and governments could cooperate with each other to reduce the use of incentives, but find it difficult to do so because of their competition for investment (a Prisoners' Dilemma-based argument).¹⁸

4.3.1 Reduced tax base to fund government programs

One possible consequence of the high and growing use of investment incentives, spending money on grants in the current period or mortgaging future tax revenues through abatements and other tax-based incentives, is that a government will have insufficient funds for important programs, including ones that contribute to economic development such as education or infrastructure.¹⁹ Multiple sources quote Wallace Oates' classic textbook, *Fiscal Federalism* (Charlton, 2003: 14 for this version): "the result of tax competition may well be a tendency toward less than efficient levels of...local services. In an attempt to keep taxes low to attract business investment, local officials may hold spending below [optimal] levels." As Robert Lynch points out (2004: vii): "...there is little evidence that state and local tax cuts—when paid for by reducing public services—can promote economic development and employment growth." From this perspective, then, not only can revenue reductions mean a declining quality of life as governments cut programs, but incentives may not even have their desired effect.

¹⁷ Moreover, Blomström and Kokko (2003: 19) point out that the existence of externalities does not automatically mean a particular host can absorb them: local firms must be capable of learning from foreign MNCs. On the other hand, it is possible that there is more scope for positive externalities in countries that historically have had little exposure to global competition, for example many developing nations. In such countries, Dreyhaupt's argument may have greater validity, although I would not underestimate the importance of rent-seeking by firms even in that case.

¹⁸ In addition, some critics argue that incentives are pure waste because they do not affect location decisions, an issue discussed in Chapter 2.

¹⁹ LeRoy (2005: 201–205) assesses problems with both of these for the U.S. case.

4.3.2 Irrationality of sub-national incentives

Thomas (2000) argues that from a national point of view, state or local incentives are often irrational in the sense that the investment will be made somewhere in the country. The case of Japanese and German auto factories in the United States, beginning in the 1980s, is one example. For the Japanese especially, investment in the United States was an important strategy to head off protectionist pressures there. Had the United States been able to negotiate directly with foreign multinational corporations, it could have leveraged the advantage of a large domestic market (see Thomas, 1997 for a review of the extensive literature on bargaining between states and MNCs, and further analysis of the Japanese investments in the United States). However, due to the fact that foreign firms could negotiate with 50 state governments, it was possible for them to extract investment incentives it would not have received from the federal government. Such irrationality is only compounded when the investment concerns not new jobs,²⁰ but simply a shift in existing ones. As Thomas writes of proposed incentives for Trans World Airlines (TWA) to relocate its corporate headquarters while it was in bankruptcy (2000: 33): “thus, subnational governments prepared three sets of investment incentives to reward TWA for creating *no* new jobs in the United States.” This view of national-level irrationality leads directly to Prisoners’ Dilemma approaches, which are considered next.

4.3.3 Prisoners’ Dilemma

Prisoners’ Dilemma analyses of incentives posit that there is a conflict between the individual incentives of local governments and what is collectively best for governments as a whole. One consequence, as Oman (2000: 78) argues, is that this logic makes bidding wars a “permanent danger.” Guisinger (1985: 38–39) was the first to analyze location subsidies as a Prisoners’ Dilemma, although there is at least one precursor in Cooper’s analysis of economic interdependence (1972: 168–71). Guisinger wrote (1985: 38):

In the market for foreign investment, a prisoner’s dilemma arises among countries when one country’s increase in incentives is matched by increased incentives by a competitor. A point will be reached when the incentive levels stabilize and no country will be better off: unchanged relative incentives will produce the same market share as before. Indeed, both countries may be worse off because income is transferred to firms with no gain in market share. Only if incentives stimulate an increase in the total supply of investment to compensate for the loss of revenue can incentive matching increase the welfare of host countries.

Head, Ries, and Swenson (1999) find empirical and simulation support for Guisinger’s view. Their results show that U.S. states competing for Japanese investment tend to match each other’s incentives, leading to little aggregate effect on the location of investment. Moreover, they found (1999: 213) that the unilateral removal of foreign trade zones (FTZs) would cost 50 to 75 per cent of a state’s investment, whereas multilateral removal would have little effect. Note that while this result shows a Prisoners’ Dilemma dynamic among firms that had already decided to locate in the United States, it does not tell us whether or not the use of FTZs brings more investment to the country overall.

Thomas (1997, 2000) extends this framework by arguing that rising capital mobility increases the number of locations that are capable of competing for a given project; following well-known analyses of collective action (Olson 1965; Hardin 1982), this implies that it will be ever-more difficult to achieve cooperation among competitors. With large numbers of governments involved, the most likely way to achieve cooperation among them is through the enforcement of an agreement by a higher body. This is his interpretation (2000) of the European Union’s state aid regime (analyzed in Chapter 8 of this report).

²⁰ It should be noted, however, that new investment may simply displace existing investment. As was mentioned in Chapter 2, the North American automobile industry has long been plagued by overcapacity. Between 1979 and 1991, 20 new truck and auto assembly plants opened in the United States and Canada combined—and 20 closed (Rubenstein, 1992: 3, Table 1.1).

Guisinger's quote alerts us to two possible limitations of a Prisoners' Dilemma analysis. First, the "no subsidies" and "all subsidize" distributions of investment may be different, a point taken up in Chapter 5. Second, it is possible that investors take into account the fact that subsidies will be available for their projects, and increase their investments accordingly. Guisinger states that it depends on the elasticity of investment in response to incentives. Research within the United States suggests that it is relatively low, in the range of -0.2 to -0.3 (Fisher, 2007: 66), although these estimates may not hold outside the United States. Further bearing on this question, Oman (2000: 77–8, 115) argues that increased FDI flows lead to increased use of incentives, rather than the other way around, which implies that the use of incentives does not increase the total value of investment.

A third problem with the Prisoners' Dilemma approach is that it may be too coarse to encompass the complexity of the political process (Markusen and Nesse, 2007: 19–20). Markusen and Nesse argue that the model "cannot easily encompass institutional changes in interests, power, and actors, including the rise and behaviour of site consultants" (19). In their analysis of tax competition, Basinger and Hallerberg (2004) suggest that institutional and electoral factors mitigate the pressure to reduce corporate income tax rates. Note that the Prisoners' Dilemma does not disappear; tax cuts abroad still create pressure for a country to cut its own taxes, but whether a country does reduce taxes will be mediated by a host of other factors.²¹

4.4 The local vs. global efficiency matrix

Andres Rodriguez-Pose and Glauco Arbix (2001) suggest an innovative model for understanding the impact of investment incentives based on the effect of subsidized investment on local and global (meaning "national" in the context of their analysis of the Brazilian auto industry) efficiency. Following Cheshire and Gordon (1998), they suggest that the results of competition among local governments can have combinations of effects that fit into the following 2-x-2 matrix:

		Global Level	
		Inefficient	Efficient
Local Level	Efficient	Zero Sum	Growth Enhancing
	Inefficient	Pure Waste	

They leave the fourth quadrant empty, an issue to which we will return shortly. They term a competitive policy that is both locally and globally efficient as "growth enhancing." In other words, increased economic welfare at the local level is not offset by negative externalities (such as exporting unemployment) in other parts of the country. By contrast, if the improvements in efficiency at the local level cause losses elsewhere in the country, they are considered zero-sum. Worse still, it is possible that competitive policies such as incentives could be so expensive as to offset all the local gains, *and* in addition, could have negative impacts elsewhere in the country. This outcome of "pure waste" is how they characterize the so-called "fiscal wars" among Brazilian states over automobile production in the late 1990s (2001: 137). Rodriguez-Pose and Arbix argue that the legacy of authoritarianism in Brazil has left its states with little experience in bargaining with foreign companies. This inexperience, combined with the mobility of the car firms themselves, led to excessive incentives that produced

²¹ Harding and Javorcik (2007: 21) find that investment incentives given by other countries in a region reduce a country's receipt of FDI. This further confirms the existence of strategic interaction.

bankruptcy in seven of Brazil's states (hence the local inefficiency) and tremendous job losses in the São Paulo heartland of the industry (the global inefficiency).

Two studies by the Organisation for Economic Co-operation and Development (Charlton, 2003; Christiansen, Oman and Charlton, 2003) have extended this approach. In particular, they fill in the fourth quadrant, terming it the “winners’ curse” (Charlton, 2003: 12). How can a scenario of local inefficiency but global efficiency occur? Charlton argues that it can occur when a local jurisdiction overbids for an investment (local inefficiency) but it happens to be the location at which the facility will operate most efficiently (global efficiency). Another, perhaps more plausible, way to envision it is in terms of an incentive that shifts an existing facility from a low-unemployment area to a high-unemployment area (recall that Rodriguez-Pose and Arbix treat the global gain as a mixture of gains locally with possible offsetting losses elsewhere in the global jurisdiction). Bartik (1991) argues that this represents an efficiency gain because the jobs are worth more to those in the higher unemployment location.

In either case, however, it is difficult to see how there could be an inefficiency for the local jurisdiction and efficiency for the larger jurisdiction, given that the larger jurisdiction also contains the losing jurisdiction. Let N represent the social value of the investment at the new location, O its value at the old location, with both N and O strictly positive, and G the difference between the two, such that $N-O=G$. Under Bartik's formulation, G will be positive when unemployment is higher at new than it is at old. For incentives under these circumstances to be *locally* inefficient at the new location, they would have to exceed the social value, N . But since $N>G$, this implies that subsidies are globally inefficient as well.

In Christian, Oman and Charlton (2003), more care is taken to weigh the benefits of incentives against their costs. Reanalyzing the case of Brazil, they suggest that while the relocation of some automotive production from São Paulo to poorer areas of the country²² increased national efficiency, the high costs in state subsidies (up to US\$ 340,000 per job) “could be taken to indicate that subsidies have been paid in excess of the additional efficiency gains from reallocating plants within Brazil (hence a case can be made for inefficiency at the national level)” (2003: 18). They leave open the possibility, however, that in some of the recipient states the efficiency gains outweighed the incentive costs. Adding weight to the view that there was indeed national inefficiency, Farrell, Remes, and Schulz (2004) report that, by 2002, Brazil had 80 per cent overcapacity in the auto industry and that costs were inflated by 20 per cent due to the low capacity utilization.

4.5 Conclusion

All of these perspectives contribute to our understanding of investment incentives. While strict Tiebout models may be vitiated by the realities of bargaining with asymmetric information, theories based on the possibility of externalities highlight an important potential gain from using location aid. Prisoners' Dilemma approaches provide an important focus on the possibility of cooperation between governments in reducing the cost of achieving potential efficiency gains. Finally, the local/global matrix explicitly balances the gains at one location versus losses elsewhere.

²² And not all of the new investment was in poorer states (Rodriguez-Pose and Arbix, 2001: 142, Figure 2).

5 The Literature on Investment Incentives

This chapter critically reviews several groups of literature including game-theoretic analyses, statistical studies, and case studies addressing the following questions. Do investment incentives affect investment or economic growth? Is incentives competition good policy? Is it good policy for developing countries?

Several factors should be kept in mind when analyzing these studies. First, most of them consider only efficiency, not the equity or environmental aspects of investment attraction. Second, many of them lump together incentive competition with tax competition. To some extent this can be justified by the idea that a subsidy is simply a negative tax, but the identity can break down in the sense that many of the studies treat all investors as facing the same tax rate (even if it is negative), when the whole point of an incentive is to treat potential investors differently. As is apparent from studying the European Union, using automatic location subsidies is more expensive than taking a discretionary approach to incentives, and the tendency for two decades or more in the EU has been to move toward increasing discretion (Thomas, 2000: 11). More recent work on the greater cost of automatic incentives can be found in Fisher (2007: 67) and Bartik (2007: 107–108).

Studies examined extensively in other chapters are not duplicated here.

5.1 Game-theoretic analyses

One strength of game-theoretic analysis of incentives is that it can model subsidies directly, rather than simply measure taxes. While subsidies can in principle be thought of as negative taxes, in practice a statistical analysis will always show taxes as positive, though different between various countries or regions. While game-theoretic analyses can highlight some important regularities, statistical analysis cannot capture the specificity inherent in incentives.

Prisoners' Dilemma analysis has been considered in Chapter 4. Although not strictly required, Prisoners' Dilemma tends to assume that the players are undifferentiated, their payoffs are symmetric, or both. Thus, a number of analysts have worked to modify these assumptions.

Barros and Cabral (2000) consider a subsidy game between two unequal countries seeking the same investment. Country A is larger, while Country B has higher unemployment. One implication of the latter assumption is consistent with Bartik (1991) in terms of meaning that total efficiency is higher if the firm locates in Country B rather than Country A. On the other hand, locating in Country A means there are lower transportation costs due to its assumed geographic centrality. Without subsidies, the firm will locate in Country A for this reason. However, if location incentives are allowed, the company's choice is determined by the relative importance of the employment gains in Country B compared with the difference in size of the two countries. In equilibrium, two outcomes are possible. If the employment gains are large relative to the difference in size, Country B gives a subsidy and receives the investment. If the employment gains are relatively small, Country A gives an incentive and the firm invests there. Country A must give an incentive in this case because Country B is offering incentives as well. Country B is better off with subsidies allowed even if it does not get the investment, because the subsidy means higher production by the company and lower prices for consumers. Country A, by contrast, is always worse when subsidies are allowed, because it either has to give subsidies or lose the investment. This conflict in interest implies that a first-best solution exists; it would correspond to a small subsidy by B when employment gains are relatively high, or a zero subsidy by A when employment gains are relatively low. However, the first-best solution is worse for the losing country (because a subsidy would have lowered the prices it had to pay for the good produced), so it is probably not attainable without side payments.

The lessons of this analysis are several. First, with asymmetric countries, the possibility of offering incentives increases welfare. Second, the use of incentives does affect the location of investment (Blomström and Kokko, 2003: 9). Third, cooperation between the two countries can lead to higher welfare than unbridled competition, but is difficult to achieve in the absence of side payments. Interestingly, the first-best solution corresponds well

to the European Union's policy on regional aid; low incentives in poorer regions and zero incentives in richer regions.²³ Finally, the difficulty in achieving the first-best outcome highlights why subsidy competition is so entrenched in the real world.

At the same time, there are limitations to this analysis. First, they assume that the firm being attracted will be a monopolist, but this is hardly ever the case. Thus, they assume away the possibility of FDI displacing existing investment (the U.S.-Canadian auto industry is a good case in point).²⁴ Second, Barros and Cabral implicitly assume that Country B will be able to offer a higher subsidy than Country A, but there are good empirical reasons to believe this is not always, and maybe not even usually, the case (Thomas, 2000: 6).

Bjorvaten and Eckel (2006) study a more complicated version of this model. Their paper includes a competitor to the multinational, which is located in the larger Country A. In this model, the multinational is subject to two conflicting forces: in Country A, the market size is larger; but in Country B, it has no competitor. When these two factors are in close balance, both countries offer location subsidies. When the two factors dictate that one country or the other has a big inherent advantage, there will be less competition and, indeed, the winning country will be able to tax the multinational rather than subsidize it. As they point out (2006: 1902, n12), "...strong location advantages increase the bargaining power of potential host countries and may lead to taxation rather than subsidies..." This is consistent with the findings of the literature on bargaining between multinationals and host countries in international relations (Thomas, 1997). What is important is their finding that this remains true even with a competing location. Whether the two countries together are better off with or without policy competition depends crucially on trade costs between the two, where low levels of trade costs mean intense competition, and they are worse off in the absence of side payments. With high trade costs, Country B has a big advantage and total welfare can be higher without side payments.

Albornoz and Corcos (2007) consider the interesting situation of incentives to an existing firm considering relocation within a regional trade area, a situation that has arisen within NAFTA, the European Union, and Mercosur, among others. In this case, a total ban on subsidies may be more efficient than allowing subsidy competition, in contrast to the above two studies. However, coordinated incentives may have higher regional welfare still. This is particularly the case with a MNC from outside the region, and they suggest this implies that in such instances, a ban on subsidies will be a better policy than allowing them, if it is not possible to coordinate them optimally.

What lessons can we draw from these studies? Many of the results are sensitive to the assumptions built into the models. In particular, the assumption that the poorer region can outbid the richer region is questionable, although in the European Union, the availability of Structural Funds that can co-finance investment incentives in the poorer regions (such as the Volkswagen plant in Portugal) makes this assumption more realistic. As noted above, the EU may be reasonably close to Barros and Cabral's "first-best" situation. As a whole, these results do argue for using regional policy rather than allowing uncoordinated bidding by rich areas as well as poor areas, but not necessarily for a total ban on incentives. They also reinforce the view that moving away from the status quo of subsidy competition is difficult to achieve.

5.2 Statistical analysis of the effects of incentives and taxes on investment

This literature is so large that it is difficult to summarize it all within the constraints of a short report. Fortunately, a recent paper (De Mooij and Ederveen, 2005) provides not only a literature review, but a meta-analysis, of 31 widely known studies on the issue of how taxes affect investment (more precisely, the responsiveness of investment to changes in taxation, i.e., the elasticity). Since these studies made 427 estimates

²³ Inexplicably, Barros and Cabral (2000: 365) see it as a goal of the EU to eliminate investment incentives entirely.

²⁴ However, in developing countries, it may be more plausible that the MNC will be a monopolist, as Albornoz and Corcos (2007: 20) note.

of this elasticity under a variety of circumstances, the authors were able to analyze the results in terms of major characteristics of the articles, such as the type of investment, how taxes were measured, and so forth.

De Mooij and Ederveen, following Devereux and Griffith (2002), classify empirical studies into four broad categories: time series; cross-sectional; discrete choice; and panel. They perform a regression in which the dependent variable is the semi-elasticity of investment to taxation (that is, the response to a 1 percentage point change in the taxation variable, rather than a 1 per cent change as is the basis for calculating elasticities), for which in some cases they had to calculate from the data of various studies, and the independent variables are various characteristics of the articles analyzed. The semi-elasticities vary widely, and de Mooij and Ederveen start out by excluding extreme values (over two standard deviations from the mean for each of the four categories; 2005: 19). Not all of the studies analyzed found statistically-significant semi-elasticities; by category, 44 of 105 time series (42 per cent), 48 of 77 cross-sectional (62 per cent), 55 of 136 discrete choice (40 per cent), and 71 of 109 panel (65 per cent) semi-elasticities were statistically significant for the dataset with extreme values removed. Overall, 51 per cent of the semi-elasticities were significant. The median semi-elasticities were -2.75 for time series, -4.24 for cross-section, -2.80 for discrete choice and -2.41 for panel, with an overall median value of -2.91 (2005: 19, Table 4.1). In other words, for a 1 percentage point increase in the tax rate, foreign direct investment fell by 2.91 per cent.

Besides looking at the type of study, de Mooij and Ederveen consider a number of other variables: whether the FDI data controls for investment in plant and equipment and investments related to mergers and acquisitions (M&A) separately; how the studies measure their tax variable;²⁵ whether the home country uses an income tax system based on exemptions for overseas income, or taxes total worldwide income with credits for taxes paid abroad; whether certain variables such as agglomeration were controlled for; the median year for the study's data, to determine if higher levels of capital mobility characterize the later studies; and whether the study focused solely on intra-EU FDI flows. These were analyzed via dummy variables compared with a benchmark of: a) time series analysis using b) all types of FDI with c) national statutory tax rates, and d) no controls.

What does the meta-analysis show? The results (2005: 25, Table 4.2) show that the type of study done has a substantial impact on the results of the study (adjusted R-squared of 0.48—all reported statistics are for the full specification unless otherwise noted). The most striking finding is that, compared with time series studies, cross-sectional studies of asset allocation by U.S. multinationals show semi-elasticities that are an absolute value of 11.21 points higher (in the negative direction). Considering that the median semi-elasticity of cross-sectional studies is -4.24, and the mean -7.16, this is a very large effect. By contrast, and despite having the second-largest median semi-elasticity, discrete choice studies actually showed lower effects than the baseline, by 3.08 points. The effects of panel data were not statistically different.

Studies which focus on plant and equipment FDI rather than total FDI, which is often dominated by mergers and acquisitions (M&A),²⁶ show systematically greater effects of tax differences, with semi-elasticities 3.60 points higher. By contrast, studies focusing solely on mergers and acquisitions were 5.92 points lower; indeed, these studies often showed that higher taxes in the host country led to more FDI via M&A. It appears clear that lumping these two types of FDI into aggregate data is misleading. This finding is especially relevant for the study of investment incentives, since location subsidies are given for such physical investments, not for

²⁵ National statutory tax rate, state statutory tax rate (for U.S. studies), marginal effective tax rate, average effective tax rate, or average tax rates computed from micro- or macro-data (2005: 21–22). All of these measures have their strengths and weaknesses; see especially OECD (2000).

²⁶ See van den Berghe 2001: 3–4.

mergers.²⁷ If we think of incentives as negative taxes, this meta-analysis gives some support to the view that they do affect the location of investment.²⁸

The type of tax data used also has a significant effect on the results in the studies analyzed. As compared with using country statutory tax rates, the use of state statutory rates, or marginal or average effective tax rates, increased the estimated semi-elasticities from between 1 and 2.5 points, while using either micro- or macro-average tax rates had no effect.

Studies that controlled for tax exemption vs. tax credit source countries were not significantly different, but studies with more recent data had a significant but tiny (0.13) increase in estimated effect, while studies using intra-EU data had a lower estimate by 1.60 points (the opposite of that expected by the authors: 24), while studies with controls for openness or agglomeration had estimated semi-elasticities that were 2.43 and 1.11 points lower, respectively (2005: 25, Table 4.2).

These results are rather bewildering for the making of policy. De Mooij and Ederveen find that only half of the estimated semi-elasticities were statistically significant, and the various results are heavily dependent on the methodology used (cross-sectional studies having hugely higher estimates). For their part, Devereux and Griffith (2002: 98) conclude their survey of this literature quite tentatively, saying: "...there is some evidence that taxes affect firms' location and investment decisions, although we do not have a very good idea about the size of this effect."

5.3 Case studies

Numerous case studies of incentives have been conducted. This section gives just a small sampling of them.

Greenbaum and Bondonio (2004) conducted a comparative study of U.S. Empowerment Zones and EU Objective 2 regions. They examined three successive rounds of area designation in both programs to determine if they maintained a focus on the poorest areas they were designed to serve. In both cases, regression analyses predicting area designation performed much better in the first round than in subsequent rounds, from which they conclude that the programs lost some of their focus on the poorest areas (2004: 21–22).

Bondonio and Greenbaum (2006) examine the incentives given to small- and medium-sized enterprises in the Objective 2 regions of northern Italy. Using a difference-in-difference methodology, they find a positive and significant effect of the incentives on employment in the relevant areas, at a cost of between € 15,900 and € 29,400 per job. While higher than the per-job estimates reached with different methodologies, they were lower than the cost of enterprise zones in the U.K. or the U.S. (2006: 29–30). However, the biggest gains came in the areas that had seen the least decline, suggesting that these programs might not be as successful in promoting development in poorer areas (2006: 30).

Ayele (2006) examines the effect of incentives on small business start-ups in Ethiopia. In common with many other places, the government's location subsidies were ineffective in inducing firms to locate in the areas most needing investment, and the benefits were concentrated in just a few industries. The author argues that the incentives in that case were relatively ineffective and he cautions other developing countries in their use.

International Monetary Fund (IMF) economist Kevin Fletcher (2002) has analyzed tax incentives in Southeast Asia, specifically Cambodia, the Lao People's Democratic Republic (PDR), and Vietnam. He found that they

²⁷ Recently, however, Piscitello and Rabbioso (2005) have suggested that it may sometimes make sense to offer subsidies to foreign MNCs for acquiring domestic firms. One key point is that the acquired firm is already linked to other domestic firms.

²⁸ However, both Bartik (2007) and Fisher (2007) suggest that the elasticities (not the semi-elasticities) are small, in the range of -0.2 to -0.3. They conclude that cutting taxes or awarding incentives in the face of this inelastic demand means that total tax revenue will fall despite increased investment. It is unclear if these elasticities hold outside the United States.

were frequently expensive,²⁹ with no evidence that they increased investment, especially compared with “simple, uniform regimes with low to moderate rates of taxation,” and he recommended accelerated depreciation over tax holidays (2002: 16). Moreover, he cites similar results in related studies for Mexico, Pakistan, Indonesia, Brazil and Malaysia (2002: 11–12).

Aldaba (2003) notes the creation in the Philippines of ever more generous incentive programs, primarily in export processing zones. She argues that despite having programs similar to those of Thailand, Indonesia and Malaysia, the Philippines lags behind in attracting foreign investment. She concludes that countries with “weak fundamentals” cannot make up for that with investment incentives (24–25).

5.4 Further considerations for developing countries

Moran, Graham and Blomström (2005: 382) report the disturbing trend that there has been increasing competition between developing and industrialized countries for particular investments. They cite findings that MNCs’ responsiveness to taxes and incentives has increased the most for manufacturing investment in developing countries. In their view, developed nations led the increase in incentives and “developing countries [were] drawn into this competition for FDI” (382). They argue for an agreement that limits incentives in developed countries and permits greater investment subsidies in developing countries.

Whether incentives promote growth in developing countries is a difficult question. If FDI increases growth, and incentives increase FDI, the answer must be yes. While some analysis (e.g., Carkovic and Levine, 2005) finds that foreign direct investment *per se* does not promote growth, Blonigen and Wang (2005), studying developed and developing countries separately, show that FDI increases growth in developing nations but not industrialized countries. These results are perhaps reconciled by Moran (2005), who argues that foreign direct investment only increases growth in developing countries when coupled with open trade policies; that is, FDI for protected national markets does not promote, and may even hinder, growth. Mutti (2003: 68) shows that U.S. MNCs are particularly sensitive to taxes in developing countries when considering export-oriented projects, adding to the discussion above suggesting that incentives do matter. However, it is unclear if the strategic aspects will drive up incentives enough to dissipate the gains, a problem Moran (2005: 309) acknowledges.

5.5 Conclusion

The literature on investment incentives is rich and deep. Some of the most important themes that emerge from it are the potential for enhancing efficiency if investment is channelled to areas of greater poverty or higher unemployment, the possibility that optimal incentive regulation can promote greater welfare, and the difficulty in achieving cooperation for such regulatory goals. Moreover, overbidding for investment is a constant danger, perhaps particularly so in developing countries. Even in industrialized countries, uncontrolled auctions can break out when there are many jurisdictions with similar characteristics competing for an individual investment. Part of the reason for this is the tendency for geographically targeted programs to become less focused over time. Finally, while incentives do appear to have some effect on the location of investment, they may not be very useful if a jurisdiction does not already have supportive political and economic fundamentals in place. Furthermore, the Prisoners’ Dilemma-style interactions of bidding for projects may reduce or even eliminate any gains that come from attracting investment.

²⁹ In the case of Vietnam, the cost was about 0.7 per cent of GDP (2002: 13).

6 Policy issues under the microscope

This chapter highlights some of the main policy issues that arise in connection with investment incentives, except for disciplines, which are considered in Chapter 8. In particular, we focus on: the need for transparency; the difficulties in evaluating the costs and benefits of incentives; the common lack of *ex post* auditing of incentive programs; clawbacks; the problem of rent-seeking; spillovers and incentives for research and development; the role of site-location consultants in obtaining incentives; the design of incentive programs; the politics of investment incentives; and how best to promote benefits from an investment receiving incentives.

6.1 Transparency, evaluation and auditing

Transparency is both a political issue and a research issue. The ability to know what has been given to a particular company cannot be taken for granted. Negotiations over incentives are often conducted in secret; indeed, a government may not know the identity of the company, dealing only with a site-location consultant instead. Governments that are competing for a specific investment, whether they obtained the investment or not, frequently wish to obscure from their competitors what they offered or were willing to offer. As we will see in the case studies of Chapter 7, information on the offers of non-winning governments is very sparse. Moreover, as LeRoy (2005) points out, secret negotiations make democratic accountability close to impossible. For the researcher dealing with incentives globally, the amount of information varies widely, and is close to non-existent for non-democratic governments. Even in the European Union, which ranks tops in transparency due to Treaty requirements that all state aid must be notified in advance to the European Commission, not all aid is classified in a way that it can be identified as an investment incentive. While most regional aid is used for incentives, not all is; similarly, some but not all subsidies for research and development may be functioning as an investment aid, and a small amount of aid for energy and the environment also consists of investment incentives, such as for biofuel production facilities.

It is important to point out that evaluating incentives in terms of costs and benefits is fraught with difficulties. The cost of incentives, especially in the aggregate, is often hidden from outside observers. Even where the terms of an incentive are not hidden, it can still be problematic to evaluate costs. One has to decide whether to count the cost to government or the benefit to the recipient. Fisher and Peters (1998: 3) point out that this important distinction is sometimes even ignored in economic development literature.

For example, suppose that a state government expands an airport as part of an incentive package for a manufacturing operation. Clearly the firm is not the only beneficiary of the incentive, so the benefit to the recipient is some fraction of the cost. On the other hand, the government would not have undertaken the airport expansion at that time, absent the intended private investment, and had to pay the full cost of the expansion. A second difficulty is that the costs often extend many years into the future; for example, a tax abatement. In this case, the costs need to be measured in terms of present value, a point rarely appreciated by the press and occasionally absent even in academic discussion. The OECD (1995) has published a list of the interest rates it uses as discount rates for each of its member countries.

A special point to note is what might be called the illusion of costlessness. Many economic development and elected officials believe that offering incentives is costless because incentives are only awarded if you receive the investment. This is not correct for a number of reasons (UNCTAD, 2003: 124). First, if the investment would have been made without receiving incentives, the government will have directly given away grants or mortgaged future tax revenues. Second, there are opportunity costs to be considered; there might have been a better use of government money than attracting a business. Third, there are administrative costs. Fourth, if the incentive creates inefficiency (for example, by inducing a firm to operate in an inefficient location), there is an economic cost to be paid even if there is not a visible financial cost to government. Fifth, as noted in the

introduction, discriminating among different firms or types of firms may introduce distortive effects. Sixth, tax breaks may lead to abusive transfer pricing.³⁰

In addition, even in cases when incentives do determine the location of an investment, offering incentives contributes to a strategic structure that creates losses for all parties as other jurisdictions offer incentives to offset those given in your jurisdiction (the “arms race” metaphor). Your jurisdiction’s subsidies create competition for existing firms, which reduces their production or sales, or forces them out of business as a consequence. Depending on the size of the jurisdiction, these firms could be local or located elsewhere. Other jurisdictions will give subsidies, and this will harm existing firms in your jurisdiction or even their own. Retail facilities and North American auto assembly plants have both experienced this dynamic.

Assessing the benefits of incentives is even more of an art form. Many governments compare an expected future increase in tax revenue with tax foregone, which again raises the issue of calculating their present value.³¹ The biggest difficulties include determining what would likely have happened in the absence of the incentive and how much of the economic activity was really due to the incentive. While site-location consultants and many government economic development officials will attribute all employment connected with a new investment to the incentive (as well as a multiplier effect, itself subject to controversy), recent studies suggest this leads to exaggerated claims.

Gabe and Kraybill (2002) find in a sample of 366 companies making expansions in Ohio from 1993 to 1995 that firms receiving incentives substantially overestimated the number of jobs they would create, while firms not given incentives made more accurate estimates. Indeed, they find that companies receiving subsidies created 10.5 *fewer* jobs than they would have otherwise. Luger and Bae (2005), analyzing North Carolina’s regionally differentiated Lee Act (see Chapter 2), find that only one out of every 30 jobs claimed by subsidy recipients as being due to the incentives were actually induced by the incentives; that is, only 3.6 per cent of the announced jobs “otherwise would not have occurred” (2005: 23). This changed the program’s cost per job induced from about US\$ 5,000 to US\$ 147,463! Similarly, Peter Fisher argues that for a fairly typical incentive package creating a 30 per cent tax cut, only 9 per cent of the claimed jobs will actually be induced by the incentive (2007: 67).

A recent study (Mejia, Nordstrom and Schweke, 2007) compares the economic models used in North Carolina and Virginia to determine how much to offer in incentives to a prospective investor. While this might seem like an arcane technical subject, the authors show that they led to such divergent estimates of the value of a Dell computer-manufacturing facility that Virginia offered US\$ 37 million for it—while North Carolina received the investment with an offer of US\$ 242 million! Moreover, North Carolina estimated that 8,086 jobs would be created or induced by the Dell investment, while Virginia’s estimate was 4,113 (Mejia *et al.*, 2007: 1). They argue that North Carolina’s model was flawed by using projected sales instead of job creation to estimate the economic impact, and in the case of Dell, the state Department of Commerce made things worse by accepting Dell’s sales estimate rather than deriving its own.

Beyond the technical problems that may be present in cost-benefit analysis, it may be argued that any such analysis that stops at the jurisdictional border is beside the point (Thomas, 2000: 10): it does not consider the effects on neighbouring jurisdictions (see footnotes 20 and 21 above as well as the discussion of the local vs. global efficiency matrix) and it does not consider the counter-factual of obtaining an investment without incentives.

As LeRoy (2005) has emphasized, many investment incentives are given without any *post hoc* evaluation of their results. Did companies hire as many people as they said? What were the wages paid? If legislation requires that

³⁰ A point emphasized by Blomström and Kokko (2003), who argue that tax holidays are not as “innocuous” as they seem, because they create incentives for firms not only to engage in abusive transfer pricing, but also to repeatedly establish subsidiaries as existing tax holidays expire (2003: 17).

³¹ In the infamous case of a 1993 incentive for Intel Corp. in Rio Rancho, New Mexico, the state’s department of economic development did not know how to do a present value calculation (Thomas 2000: 194, n92)!

this information be reported for all company-specific deals, it is possible in principle to carry out such evaluation. In the case of automatic incentives, such as tax-credit programs, there are no individual agreements to enforce on companies, as can be done with clawbacks of granted subsidies.³² However, as LeRoy points out, if firms are required to disclose the tax credits they receive, it becomes possible to determine the overall job performance of firms awarded these subsidies.

6.2 Spillovers and R&D

Blomström and Kokko (2003) review the evidence on spillovers, which we saw is an important potential reason for using incentives. They conclude that spillovers do exist but are not automatic, and probably require a minimum level of technological and workforce sophistication among domestic firms for spillovers to occur (2003: 16). They note, however, that it is difficult to calibrate subsidies to the spillovers that will result from any given investment, creating the danger that governments may pay too much and actually reduce national welfare, a situation that is more likely when there is a multitude of governments bidding for FDI (2003: 17). Thus, in their view, incentives should be part of a comprehensive industrial policy that may include incentives to domestic companies to make them better able to absorb spillovers (2003: 21).

Turning to an area in which the spillover argument is especially apropos, research and development subsidies (some of which take the form of investment incentives) seem to be increasing. In the European Union, it was the third largest horizontal aid in 2005 at € 5.7 billion (European Union, 2006b, Table k5–4). Many Canadian provincial officials have come to favour it as a relatively non-specific subsidy that is less likely than other types of support to attract countervailing duty complaints from the United States (interviews, spring 2007). Numerous U.S. states have tax incentives for R&D. Its popularity notwithstanding, it is likely that R&D aid exacerbates regional inequality, as Thomas (2000: 220–23) reported: richer countries within the EU devoted more of their state aid to R&D than did the Cohesion Countries; if we compare industrialized and developing countries, the disparity is undoubtedly wider.

6.3 The politics of incentives

In many democratic countries, a politics of investment incentives has emerged. Large numbers of critics have entered the political process to end or limit subsidies. Thomas (2000) documents some early examples in the United States and Canada. He points out also that the existence of multiple critiques of incentives means that there has been scope for unusual alliances bridging the usual left/right divides. In Israel, a large subsidy given to Intel Corporation led law-makers to cut the maximum subsidy from 38 per cent to 20 per cent of the cost of the investment (24 per cent for small investments). That first US\$ 600 million incentive was to have been cut as well, but Intel threatened to leave if the original agreement was not honoured, which successfully obtained the subsidy but left a bad taste in a lot of people's mouths (Sher, 1999; Toronto Star, 2000). Israel refused to provide even 20 per cent in 2000 (Lyons, 2000), and lost a bidding war to Ireland over a subsequent chip plant (O'Connor, 2000).

One question that arises when incentives are politicized is whether it makes economic sense for an individual government to unilaterally cease offering investment subsidies. If there is a strategic element to incentive competition, the answer is probably “no.” The most desirable locations with the most bargaining power might be able to avoid providing incentives, but other jurisdictions would find it more difficult to do so.

³² Clawbacks seem to be more routinely used in Europe than in the United States. However, LeRoy (2005) finds that there are an increasing number of U.S. jurisdictions where they are used.

6.4 Rent-seeking, information asymmetry, and site-location consultants

The possibility of firm-specific benefits creates the possibility of rent-seeking behaviour by firms (Blomström and Kokko, 2003: 17), which is exacerbated by the secrecy with which most subsidies are negotiated.³³ Markusen and Nesse (2007: 11) note that many firms did not initially see the potential for extracting rents in their site selection and relocation processes. While they attribute the rise of site-selection consultants as key to this process, and location consultants are now a key factor exacerbating it, Bartik (2007) makes a convincing argument that the underlying declines in transportation and communications costs (i.e., an increase in the mobility of capital) were more critical than the rise of site-location consultants. Moreover, some companies were learning to take advantage of their increasing mobility without using consultants.

The role of site location consultants in the investment process is a matter of some controversy. LeRoy (2005: 68–91) gives one of the best accounts of their rising influence in the United States. Markusen and Nesse (2007: 22) argue that these consultants help create information asymmetries between firms and governments, and actively discourage governments from cooperating with each other (for example, through advocating secrecy). All of this facilitates rent-seeking on the part of firms. Thus, LeRoy (2005: 192–93) argues that site location consultants should be registered and regulated as lobbyists.

6.5 Practical issues of incentive design

An important question in designing incentive policies is whether subsidies should be given up front or over a period of time. Bartik (2007: 118) points out that incentives have more effect on business decision-making if they are paid sooner rather than later, in part because firms use large discount rates when factoring-in future benefits. By contrast, Blomström and Kokko (2003: 19) argue against up-front incentives, suggesting that governments would be better off paying subsidies for R&D, education and training as they actually occur. Weber and Santacroce (2007) contend that paying for performance reduces rent-seeking and obviates the need to use clawbacks when commitments by investors are not fulfilled.

How can a government that has already decided to give incentives gain the most benefit from them? Weber and Santacroce (2007) suggest that the first key point is that a government must draw up an explicit contract with a company receiving subsidies (3–4). While this recommendation is based on the history of U.S. court cases in which unclear agreements were not held to bind companies to their commitments, this would appear to be good advice in any legal environment. Second, governments must be able to draw up reliable estimates of the costs and benefits of the incentives (6–7) which, as noted above, is a difficult exercise to say the least. Third, the contracts must specify explicit goals and performance requirements that the investor must satisfy (11–15). This includes such factors as the number of employees that must be hired to receive the subsidy, the wages and benefits that must be paid, etc. Note that these particular requirements do not violate the WTO's Agreement on Trade-Related Investment Measures (TRIMs), as it only bans export and domestic-content requirements (see Chapter 8).

The contract should also ban relocation of a facility for a specified period of time as well as specify the date by which the company should have fulfilled its performance requirements (18–20). Fourth, monitoring and disclosure requirements must be built into the subsidy agreement. Fifth, penalties for breach of contract should be substantial, including clawbacks of incentives awarded. Even better is for incentives to be back-loaded whenever possible—that is, subsidies should only be paid when a firm reaches its performance goals.

³³ This also creates the possibility of paying bribes in order to receive incentives.

6.6 Conclusion

The policy challenges of using investment incentives are many. They are frequently not transparent, hindering democratic participation and accountability. Determining either the costs or benefits of incentives is difficult at best. But elected officials and economic developers should not fall victim to the illusion that incentives are costless. The possibility of rent-seeking behaviour by firms is very real. Transparency, *post-hoc* evaluation, and incentive design can all help reduce this danger. Up-front subsidies may have more of an incentive effect, but are more vulnerable to rent-seeking by investors. Spillovers are a potential justification for the use of incentives, but it is important to realize that not all investments have spillovers, and not all countries can take advantage of them even when they do exist. Bidding wars can offset or negate any spillover that is captured. Finally, it is worth noting that in many countries, the use of location subsidies has become more politicized. Demands for greater transparency and accountability of subsidy use have occurred across the political spectrum.

7 Case studies

This chapter will present three detailed case studies of incentives. The first concerns the call centre industry. It will focus in particular on the use of incentives in the spread of this industry to India, South Africa, the Philippines, parts of the Caribbean and Canada, as well as some cases in the United States where the use of incentives have been credited with a decision in their favour over competing jurisdictions in India. The second case examines the use of incentives to biofuel production facilities (note: *not* general subsidies to biofuels) in a number of countries throughout the world. The third case is microchip fabrication, which pits several locations in the United States and Europe against developing countries like Singapore, and soon, India. In addition, there will be a brief recounting of selected bidding wars for auto facilities in both the industrialized and developing world. In all of these cases, there is no way to be exhaustive; instead, limitations of space and information availability play a role.

7.1 Call centres

Call centres, also known as customer support centres or customer contact centres, are part of a quintessential service industry. In a typical call centre, workers are connected to phone lines and computers to perform sales or service functions. They can range in size from a handful of people to several thousand, but a more typical range is from several hundred to 1,000. They can be characterized primarily by ownership and directionality. With respect to ownership, call centres can be in-house, such that centre workers provide service for that company's products and are employees of that company. Alternatively, there are a number of companies that provide call centres for firms on a contract basis, in which case the centre employees are not employed by the firm whose products they are selling or servicing, but by the independent firm. Some of the major companies involved with this are EDS Contact Center Outsourcing Services, Convergys, West, and Sitel.

Call centres can be outbound (calling customers or potential customers) or inbound (receiving calls).³⁴ These differences are significant for labour relations (Good and McFarland, 2004), but are not very important for investment incentives, and will not be considered further here. Finally, there are gradations in the level of service that a call centre might provide; higher-end services are, naturally, more attractive to governments and likely to obtain larger incentives. An example would be the Research in Motion technical support centre in Halifax, where the jobs are expected to pay about C\$ 45,000 per year (Moreira, 2005).

Labour represents a large percentage of the cost of a call centre, meaning that call centres generally are not located in high-wage regions, but tend rather to be concentrated in rural or high unemployment areas of industrialized nations, or in developing countries. In addition, call centres tend to employ staff on a part-time rather than full-time basis, pay below-average (but above minimum) wages, and have a largely female workforce (Good and McFarland, 2004). Whatever the location, however, governments have commonly used location incentives to attract call centres. Even in India, where workers might only earn US\$ 1 per hour (Good and McFarland, 2004), state governments have deemed it necessary to use inducements to land these facilities.

7.1.1 North America

In North America, there have been numerous instances of bidding wars and poaching (offering subsidies to a firm to relocate an existing facility). Some U.S. companies have sought out "near-shore" locations such as Canada or onshore location due to dissatisfaction with offshore facilities. Customers in the United States, for example, have often complained about the accents of call centre personnel or otherwise had unsatisfactory

³⁴ Note that the contact method need not be restricted to telephone. Contacts may be made by email, text message, Web chat, etc. Moreover, some companies have moved to have more of their employees work from home (Fleischer, 2007).

customer service experiences, leading to the shift in some firms' location strategies (Finlayson, 2004). Dell is one example of a company that expanded its use of North American call centres for this reason. Indeed, in 2004 and 2005, Dell opened a string of call centres in both the United States and Canada, prompting bidding wars among a number of cities.

In July 2004, Dell announced that it would locate a call centre in Edmonton, Alberta. Edmonton triumphed over Calgary, Winnipeg and three cities in the United States.³⁵ It put together an incentive package worth about C\$ 6 million, including US\$ 1-per-year land and a property tax reduction for five years (Goff, 2005). According to Kent McMullin, Calgary did not offer incentives, while Winnipeg did. He believes it was possible to land this deal without offering incentives, citing Edmonton's success in attracting Ford, GE Credit, Neiman-Marcus, and Convergys without incentives (interview, 21 March 2007). While the original announcement called for a 500-person centre, the company decided by year-end to expand it to 750. By early 2007, it employed 1,300, according to McMullin. Alberta opted out of the subsidies game at the provincial level in 1995 with the Business Financial Assistance Limitations Act (the only exception was for film production),³⁶ choosing instead to focus on a low-tax strategy that is widely advertised as the "Alberta Advantage" (Thomas, 2000: 181; Alberta government Web site). The lower tax rate does make it easier to resist the incentive wars, and the province's low unemployment rate due to the oil sands boom further strengthens its municipalities' bargaining power with potential investors.³⁷

In October 2004, Dell chose Oklahoma City from 125 cities in the central and eastern United States for a major customer service centre, weeding out nearby Norman, Oklahoma after establishing a temporary facility in Oklahoma City that July. The city provided 68 acres of free land five minutes from downtown. The facility, expected to eventually employ up to 3,000 workers, was located in a federal empowerment zone and was eligible for a 5 per cent rebate on payroll taxes, US\$ 950,000 in training grants and financing through tax-free bonds (Mecoy, 2004; Streuli, 2004).

In August 2005, Dell announced a new 500-seat call centre in the Ottawa suburb of Kanata, which beat out Kingston and Kitchener-Waterloo, also in Ontario.³⁸ Provincial law prohibits local governments from giving incentives (Reese, 1993), so incentive negotiations generally focus on the eligibility of companies for provincial programs. Most commonly, a firm will qualify for a C\$ 5,000 training grant annually for three years for every employee hired (see Fisher, 2007: 78 and Thomas, 2000: 269 on the point that "automatic" incentives are far more expensive than discretionary ones). In fact, that is what Dell received for its Ottawa call centre (Mayeda, 2005). As with other locations to be discussed, Ottawa may well have benefited from relatively low wages, which resulted from its own version of the dot-com crash in the early part of this decade. According to one document from the Ottawa Centre for Research and Innovation, call centre workers there made about C\$ 4,000 to C\$ 5,000 less than in Kitchener-Waterloo or Toronto, and a whopping C\$ 16,000 less than in Dallas or Atlanta (Denley, 2005).

Beyond Dell, a major North American bidding war took place in 2005 over the aforementioned Research in Motion (makers of the Blackberry) technical support centre. In this case, two U.S. and two Canadian finalist cities were competing head-to-head, before the intervention of Nova Scotia premier John Hamm, who flew to Waterloo to meet with company chairman and co-CEO Jim Balsillie. According to one report, the company had already decided to go to the United States, but reconsidered after Hamm's visit (Tutton, 2005). Another province in which cities cannot give incentives, Nova Scotia put together a C\$ 19 million package of training

³⁵ Kent McMullin of the Edmonton Economic Development Corporation stated he did not know the identity of the U.S. cities (Interview, Edmonton, 21 March 2007).

³⁶ Dan Chugg, Alberta Film Commissioner (Interview, Edmonton, 19 March 2007).

³⁷ Further, note that local governments are now banned from providing incentives by the Alberta-British Columbia Trade, Investment and Labour Mobility Agreement (TILMA).

³⁸ An economic development official in another province suggested that Nashville had also been in the running for this call centre.

and wage support. The company was reportedly also to be considered for support by the federal government's regional aid program for the Maritime provinces, the Atlantic Canada Opportunities Agency (ACOA). Tutton writes: "Carmi Levy, a research analyst with Info-Tech Research Group in London, Ont[ario], said government money was likely key to the deal, but the major factor was Ontario's tight labour market. 'Waterloo and Ottawa are talent markets that have been tapped dry by the major technology vendors in Canada and the United States,' he said. 'For now RIM has Halifax mostly to itself.'"

In some other cases, locations in the United States have managed to defeat locations in India, receiving location subsidies from state and local governments in the process. For example, Headway Corporate Resources, in the process of moving its headquarters from New York City to Raleigh, North Carolina, visited three cities in India before deciding to locate its call centre in rural Tarboro, North Carolina. Headway received US\$ 2.6 million in tax incentives (Rives, 2005). Systems Technology Group received US\$ 4.8 million in state tax credits and another US\$ 45,000 in local assistance, for a US\$ 2.2 million, 356-job expansion in Troy, Michigan. It, too, decided on the U.S. location after considering India (Gallagher, 2005).

7.1.2 Outside North America

Outside of North America, the call centre industry is also growing rapidly, usually fuelled in part with investment incentives. India, of course, is a popular destination for call centres and other back-office operations. In addition to low wages and large numbers of educated English-speaking workers, the country offers both investment incentives and tax treaties that create tax avoidance³⁹ opportunities. National legislation created "Special Economic Zones" (SEZ) in 2005 that allow 100 per cent deductions of profits from export activity (Krishna, 2007). State governments in India provide their own incentives, as for instance in the state of Bihar (Indo-Asian News Service, 2006). The Chennai government offers automatic capital grants for investments under 300 crore rupees [3 billion rupees, or about US\$ 75 million], and special packages for larger investments (Business Line, 2005).

Until recently, South Africa experienced rapid growth in call centres despite a lack of tax breaks, which some industry analysts blamed for inhibiting further growth (Business Day, 2006). This included in-house operations from firms such as Lufthansa and Fujitsu, and contract operators such as the United Kingdom's AvantiCall. However, by 2006, South Africa had only 6,000 call centre jobs, and the government began using tax breaks to further expand its presence in the call centre industry. U.K. insurer Budget received a tax break of about US\$ 1.8 million for hiring 211 unemployed workers. Altogether, the government committed about US\$ 140 million to the program (Thornton, 2006).

The Philippines had only 2,400 call centre workers in 2000 but, by various estimates, from 112,000 to 260,000 by the end of 2006 (Villadiego, 2006; Vitug, 2006; Khanna, 2006). Considered a priority area for inward investment, call centres can receive a minimum of four years free of income tax, while companies locating in economic zones (ecozones) can follow this up with a permanent 5 per cent tax rate on gross income, with other incentives available as well (Mondaq, 2004). Dell is one of many foreign companies to benefit from this, in the Pasay City Mall of Asia ecozone (Flores, 2006). The country is also investing US\$ 9.6 million in English speech courses for "near hires" who have insufficient command of the spoken language (Vitug, 2006).

In the Caribbean, Jamaica and the Dominican Republic are the leading call-centre destinations. Jamaica's call centre growth has been in the "free zones" in the Montego Bay area, where tax and other incentives are available (Hemlock, 2005). Among them are perpetual zero tax on income and profits, exemption from import duties and free repatriation of profits. The biggest operator was e-SGI, which employed 2,600 at the end of 2006 (Jamaica Trade and Invest, 2007). In the Dominican Republic, which recently surpassed Jamaica in the number employed, many call centres locate in the Santo Domingo Cyberpark.

³⁹ "Tax avoidance" refers to tax planning activities that reduce tax legally. "Tax evasion" is the term for illegal activities to reduce tax.

7.1.3 Conclusion

The call centre industry illustrates several important themes. Most obviously, investment incentives are widespread throughout the world, both in industrialized and developing countries. Nations that had avoided the use of incentives, such as South Africa, came under political pressure to offer them, and often succumbed. Finally, it is difficult to determine the value of individual deals when they include open-ended benefits such as permanent tax-free status.

7.2 Biofuels production facilities

7.2.1 North America

Koplow (2006) has examined the subsidies to biofuels in the United States, which include mandates to use biofuels as well as direct subsidies at the federal and state level for fuels such as ethanol and biodiesel. Here we consider only support for individual biofuel production facilities. As Koplow (2006: 32–34) notes, state and local governments in the United States have rushed to provide new incentives for these plants, as well as providing location subsidies under existing economic development laws. The same is true in countries around the world.

Biofuels plants do not generate large numbers of jobs. A US\$ 80 million plant might only have 80 employees. Nevertheless, there have been a number of instances where bidding wars broke out among competing jurisdictions, in part because they also increase demand for local agricultural products such as corn or canola. This shift has a dark side; it drives up the prices of food for consumers in poorer countries.

In 2005, Scott Petroleum looked at potential sites in Mississippi and Arkansas for a 10-million gallon per year biodiesel plant. Said site selection coordinator Darrell Forman: “we want to find a site that matches what we need. We’re also looking at what is available as far as tax incentives and gauge the interests of a city” (Associated Press, 2005). The facility eventually went to Greenville, but no information was available on whether the city had provided incentives (Gillette, 2006).

In January 2006, Bangor, Michigan, and Fremont, Indiana, competed for a US\$ 7.5 million facility from Michigan Biodiesel LLC. Bangor got the plant with a package of tax abatements and the creation of a Renaissance Zone. Zone status allowed it to exempt the plant from virtually all state and local taxes (Smith, 2006).

In March 2006, the town of Claypool and the state of Indiana gave US\$ 7 million to Louis Dreyfus Agricultural Industries LLC to build the world’s largest biodiesel plant at a cost of US\$ 135 million. When completed, the facility was expected to employ 85 people (Smith and Glenn, 2006). One Louis Dreyfus official: “said the company looked for a long time and picked Indiana for several reasons, including the abundance of soybeans, competitive truck and rail access to feed markets, and support from state officials” (Groppe, 2006), suggesting a competitive dynamic was at work in this site-selection process.

In July 2006, a bidding war broke out across the 49th parallel as five local governments in North Dakota, Manitoba and Saskatchewan were named as finalists for a James Richardson, Inc., canola crusher (Lyons, 2006). In September, the company announced that the C\$ 100 million plant would be built in Yorkton, Saskatchewan. According to Saskatchewan’s regional economic development minister, the company received training grants and road upgrades (Broadcast News, 2006). Canola oil can be used for biodiesel.

7.2.2 Outside North America

In the Czech Republic, the government awarded “significant” subsidies to PLP for a US\$ 57.6 million biofuel plant in Trmice in 2006. Not revealed, however, was either the exact amount of the award, or the possible existence of competitor locations (*Central Europe Energy Weekly*, 18 August 2006).

Also in 2006, the Swedish firm Sekab announced that it would build four ethanol plants in Hungary at a cost of € 343 million. According to *Central Europe Energy Weekly* (8 July 2006), “Sekab plans to apply for state subsidies for its project, dubbed EnviroParks, but declined to specify a forint amount, noting only that EU rules allow subsidies of up to 40 per cent of project costs.”

In Germany, Ethanex announced that it was teaming up with a group of governments (the city of Berlin, five *Länder* and the federal government) to build ethanol plants in the country. Based on European Union mandates to use biofuels, the company planned to build a series of plants in Germany, accessing investment incentives of up to 50 per cent for the facilities (*Kansas City Business Journal*, 2006).

In Egypt, Sokhna Biodiesel Company planned a US\$ 17.5 million biodiesel facility in the North West Suez Economic Zone. This plant was also oriented to the European market based on the EU fuel mandates (The Middle East, 2006). Foreign trade zones in Egypt are exempt from corporate income tax and enjoy a host of other benefits (Diamond and Diamond, 2006: 2–25).

Brunei’s first methanol plant was announced in February 2006. The Brunei Darussalam Methanol Consortium unveiled plans for an 850,000 tonne per year facility to be built in the Sungai Liang Industrial Park. Its agreement with the government required the consortium to source 80 per cent of its needs from domestic small- and medium-sized enterprises (SMEs) and to set up a technology centre, in return for unspecified incentives (Othman, 2006). While methanol is not a biofuel, it is a key ingredient of biodiesel.

In Laos, too, government incentives were available for ethanol production. Khon Kaen Sugar of Thailand established a joint venture for a sugar plantation and ethanol facility. While the sugar was mainly destined for the European Union, the ethanol would be primarily exported to Thailand. Final details of the project were still to be negotiated (Jaiimsin, 2006).

Biofuel production facilities are springing up rapidly throughout the world. Due to the agricultural inputs needed, many of these are located in quite small communities. As a result, incentives are also spreading to small municipalities where they may have never been used before.

7.3 Microchip fabrication

Microchip fabrication is a highly capital-intensive process that is essential to the high-tech economy. Facilities are expensive, and governments are willing to grant similarly large incentives. Long dominated by U.S.-based Intel, the industry is seeing heavy investment by two Chinese companies, Grace Semiconductor Manufacturing Corporation and Semiconductor Manufacturing International Corporation (SMIC). Boosted with heavy government subsidies, they have ramped up production rapidly (Site Selection, 2004).

One common feature in semiconductor site location decisions is a preference for clustering. New plants are often built adjacent to old ones, and when companies do pick a greenfield site, they usually obtain extra land to allow for future clustering. For example, in 1993 Intel examined locations in six U.S. states for a US\$ 2 billion fabrication plant, all of which were adjacent to existing facilities (Thomas, 2000: 174). In fact, “Intel, which makes chips in the United States, Ireland and Israel, hasn’t built a fab [fabrication plant] at an entirely new site in 15 years” (Clark, 2007). In 2007, this came to an end.

Though these facilities define the cutting edge of technology, they are not without their drawbacks. In particular, they use enormous amounts of water and can be quite polluting; Intel has three locations that qualified for so-called Superfund cleanup in California (SouthWest Organizing Project, 1995: 13, 73–78). The use of numerous toxic chemicals in the fabrication process has an environmental impact that is multiplied by the rapid technical obsolescence of chips (Mazurek, 2002: 193).

In 2000, International Business Machines (IBM) received substantial incentives from New York, with about US\$ 475 million in a variety of tax breaks and US\$ 28.75 million in loans and grants from the state for its facility in East Fishkill (Site Selection, 2000).

Also in 2000, Intel awarded a new US\$ 2 billion fabrication plant to Leixlip, Ireland, which had competed against Israel, New Mexico, Arizona and Oregon. For this facility, it received about US\$ 105 million in state aid (Lyons, 2000; O'Connor, 2000).

In 2003, Advanced Micro Devices (AMD) decided to build a new plant in Dresden, Saxony, in the former East Germany. Dresden is located in an "A-level" assisted region for state-aid purposes and an "Objective 1" region for EU regional funds, and therefore able to offer large incentives with EU co-funding (Marsh, 2007). This US\$ 2.4 billion factory received US\$ 1.5 billion in aid, but as most of it was in the form of a loan guarantee, the gross grant equivalent (GGE) was deemed to be only 22.67 per cent of the cost of the investment, or about US\$ 544 million (Landler, 2003; European Union, 2004a). Both East Fishkill, New York and Austin, Texas, the latter of which had substantial investment from AMD already, bid on this project.

In 2004, Intel and Ireland agreed to a € 1.6 billion fabrication plant at Leixlip, again beating out Israel, the United States and unnamed greenfield sites (Smyth, 2004). However, the European Commission refused to allow Ireland to award a € 170 million aid package, and the investment went forward without the aid. A comparison with the Dresden AMD package is instructive. Both were examined under the Multi-Sectoral Framework (see Chapter 8). Even though the aid intensity in Germany was twice as high as in Ireland, it was approved while the Irish support was rejected. Two factors were key. First, Ireland's award was to Intel, the dominant producer in the industry, with 74 per cent of the world semiconductor market (O'Brien, 2006). By contrast, Germany's award was to the distant #2 producer, AMD. Second, the level of economic need was much greater in Dresden than in Leixlip. Indeed, Leixlip, near Dublin, was already slated for a 2006 end in eligibility for regional aid (Staunton, 2005). However, Intel hinted that it would have to reconsider further investment in Ireland in the wake of this decision, despite having sufficient space on its Leixlip site for two additional fabrication plants (*Irish Times*, 3 March 2005; Smyth, 4 March 2005).

In 2006, AMD announced a new microchip fabrication facility for Malta, New York, about 25 miles north of the state capital, Albany. The US\$ 3.2 billion plant received a total of US\$ 1.2 billion in incentives from the state and federal government (*Site Selection*, 10 July 2006). AMD also considered sites in Dresden, Germany, and in Asia.

Meanwhile, New York was also attempting to land a semiconductor plant from Samsung, the Korean electronics giant. Unverified rumours put the offer at over US\$ 500 million (entirely plausible, since it gave more than twice as much to AMD), but in April 2006, Samsung announced it would build the new facility adjacent to its existing one in Austin, Texas. Incentives in Texas were "only" US\$ 233.4 million (*Site Selection*, 4 May 2006).

AMD did not leave Dresden empty-handed, however. It decided on a US\$ 2.5 billion expansion of its two plants there, expected to create 420 jobs. The company was again slated to receive aid there, but the amount was uncertain (O'Brien, 2006).

In late 2005, Intel announced that it would build a US\$ 3.5 billion fabrication plant in Kiryat Gat, Israel, in return for US\$ 525 million in aid (15 per cent of the investment) for the facility from the Israeli government. The facility was slated to employ 2,000 (Devi, 2005). The company also agreed to invest another US\$ 900 million in an adjacent existing fabrication plant. The grant was essential in securing the plant's location in Israel, according to the company:

Intel Israel general manager Alex Kornhauser told the Finance Committee that work on the plant would begin within a few days and that the promise of state aid had helped Intel decide to build the plant in Israel rather than elsewhere. Alex Kornhauser explained to the committee members that one of the proposals Intel was considering building a new factory in India, but because the government wouldn't provide a grant the management decided not to build a plant there, the Finance Committee said in a press release (Grayeff, 2005).

One interesting aspect of Israel's project analysis is that it requires that subsidized projects must generate 23.5 per cent of their profits in tax revenue (Kennemer, 2005).

Singapore has been an attractive destination for chip manufacturing as well. For example, in 2006, Intel and Micron announced a joint venture to build 30mm chips at a price of US\$ 3 billion (S\$ 4.7 billion). While the incentives for the plant were not announced, one report pointed out the hot competition for iPods and other products using the chips, and noted: “an equally competitive race among countries like Singapore to host their factories has also been ignited. Industry sources in the United States said Singapore’s attractive tax incentives and the strong base of companies supporting the semi-conductor industry gave it an edge over Europe for the plant” (Ng, 2006b). This was a competitive situation, but it was not clear what other locations were considered (Ng, 2006a). In another case, Singapore beat out Portland, Oregon, when Siltronic declined to expand a facility in Portland in favour of building a new one in Singapore. Industry analysts were quoted as saying that Singapore’s tax incentives for the US\$ 1 billion project “far exceeded” Oregon’s (Rogoway, 2006).

In 2007, Intel announced that it would build a US\$ 2.5 billion fabrication facility in Dalian, China. While the company would not release the details of its investment subsidies there, Intel CEO Paul Otellini said it would be the company’s “most cost-effective” plant due to Chinese incentives. “Intel has argued that it costs Dollars 1bn more to build, equip, and operate a chip fab in the US than in countries with more generous tax and other incentive policies,” writes Dickie (2007). However, due to U.S. technology restrictions, Intel cannot build its most technologically advanced chips at the Dalian plant.

More countries want to get onto the fabrication bandwagon. India, which still imports all its chips from abroad, is set to offer incentives that could be worth up to 35 per cent of an investment (Velloor, 2007).

The semiconductor industry is one where companies demand incentives and will not invest without them. This does not mean there is no room for negotiations, especially beyond the first factory at a given location, but the recent rise of Asian locations is going to strengthen the bargaining power of the companies in the coming years.

7.4 Automobiles

Investment incentives are a way of life in the automobile industry. Thomas (1997) examines the increase of location subsidies, first in terms of subsidy as a percentage of investment and later in terms of dollars per job, for the industry in the United States, United Kingdom and Canada over the period 1960 to 1994. The cost of subsidies in North America increased over this period for pairs of companies and host governments, while in the United Kingdom an initial increase was followed by a decrease (this finding led to the exploration of EU state aid policy in Thomas, 2000). A trend was also seen toward greater capital intensity, as aid began to fall in terms of incentives as a percentage of investment but continued to rise in terms of dollars per job. The case of the Brazilian automotive “fiscal war” of the 1990s has been recounted in Rodriguez-Pose and Arbix (2000) and re-analyzed in Christiansen, Oman and Charlton (2003). Venkatesan and Varma (1998) discuss early incentives in the auto industry in India, which is elaborated in Oman (2000).

Central and Eastern Europe saw a series of location tournaments in the first part of this decade. Attracted by low labour costs and the prospect of eventual accession to the European Union, many of the multinational automobile manufacturers invested during this period. According to Hájek (2007), automakers locating in the Czech Republic have received investment incentives since 1998, which increased with the 2000 Act on Investment Incentives. For instance, in 2006 Hyundai received a package of grants, reduced-cost land, and tax breaks totalling € 194.49 million on a € 1.148 billion plant in Moravia-Silesia, Czech Republic (European Union, 2007a). Previously, however, the Czech Republic lost out to Slovakia for a Kia plant, despite “offering the South Korean company 200 hectares of prime industrial land for 7 euros” (Bilefsky, 2004). Also among the finalists were Poland, but no western European sites (Mackintosh, 2004). Both Poland and Slovakia had offered parent company Hyundai “tax relief, free land and new infrastructure” for the € 1.1 billion facility (Ward, 2004). In 2002, Poland had lost to the Czech Republic for a Toyota/Peugeot joint venture worth € 1.5 billion (Ward, 2004). The Czech Republic offered incentives, while Poland had not. Poland had, however, managed to attract US\$ 20 billion worth of foreign investment since 1989, but was in the process of revising its laws to create investment incentive programs (Reed, 2002). Among other projects receiving incentives in Slovakia were the Getrag Ford transmission plant in Košice, where the company received € 53.5 million for the

€ 345 million facility (European Union, 2006c). This represented a reduction from the € 77 million in aid initially agreed to by the Slovak government in December 2004, because it exceeded the region's 15 per cent aid limit (Agence France Presse, 2004).

In 2005, Korean tire maker Hankook considered sites in Poland, Slovakia, the Czech Republic and Hungary before finally choosing the latter (Balogova, 2005b; Czech News Agency, 2005). Initially, the company had agreed to build its plant in Slovakia (Balogova, 2005a), but the coalition government's Cabinet decided against the Economy Ministry's 21 per cent offer or a later proposed 19 per cent offer. Moreover, incentives at that level would have run afoul of the Multi-Sectoral Framework (see Chapter 8), which limited the aid it could receive there to 15 per cent (Economist Intelligence Unit, 2005). When it became clear that the European Commission would not approve the 21 per cent aid Hankook was seeking,⁴⁰ the firm reopened discussions with Hungary. Its decision sent the plant to Dunaújváros, where the rules of the Multi-Sectoral Framework allowed an aid intensity of 21.82 per cent. The Commission approved aid from Hungary of € 92.6 million on an investment of € 424.9 million, just under the limit (European Union, 2006d).

In 2007, Hyundai and Caoa Montadora S.A. opened a factory in Anápolis, in the Brazilian state of Goiás, with tax breaks from the state government and waived duties on imported Hyundais given by the federal government (Newton, 2007).

7.5 Conclusion

There are several lessons we can draw from these case studies. First, in some industries (automobiles and semiconductors from among our cases), companies simply will not invest without subsidies. Both are capital intensive, especially semiconductor fabrication, which has on occasion received incentives of US\$ 1 million per job, compared with the usual maximum in the auto industry of between US\$ 100,000 and US\$ 200,000. Second, locations without a history in a particular industry usually pay the most (consider the extraordinary US\$ 340,000 per job reported by Rodriguez-Pose and Arbix 2001 for a Mercedes-Benz factory, or even Alabama's US\$ 100,000+ awards to several auto companies). These huge subsidies then put pressure on existing locations to offer greater incentives in order to receive new investments.

Third, the largest subsidy does not always win, although that will be the usual case when locations are closely balanced. Sometimes it is even possible to receive an investment in a competitive situation without incentives, as Edmonton's experience in the call centre sector illustrates. However, for this to be the case, a government must accurately estimate its cost advantage over competing locations. Yet, as Jones and Bachelor (1993: 14) argue, information asymmetries between firm and host make this difficult. In the European Union, companies negotiating to receive regional aid must document their cost disadvantages relative to other potential feasible sites.⁴¹

Fourth, contra Bartik (1991), the places with the most economic need are not always able to give the largest incentives. In many instances, poorer regions can only give aid in the form of tax holidays, rather than the cash grants available in richer jurisdictions. In the European Union, this is not so much the case, because the less affluent Member States can use money received through the EU's Structural Funds in order to supply cash grants to investors. Moreover, with its state aid rules, the European Union allows higher aid intensity in poorer areas and can enforce that on Member States, as the example of Hankook makes clear. The routine use of the

⁴⁰ Slovak Economy Minister Maro S. Havran told The Slovak Spectator: "we offered what we could. If Brussels says it must be less, we will have to lower it.... If Brussels says it will be 15 per cent, it will be 15 per cent" (Balogova, 2005a).

⁴¹ In the case of aid for Ford's Bridgend engine plant, the Commission rejected the U.K. government's attempt to make a comparison between costs in Wales and in Cleveland, Ohio, saying that it was doubtful it made sense to produce engines for the European market in the United States (European Union, 2002). No aid was granted, as the U.K. withdrew the aid in light of the Commission's opposition.

Multi-Sectoral Framework has enabled the EU to reduce grants in multiple cases, including to zero in the most recent Intel case from Ireland. Despite the presence of state aid rules, the European Union has seen above-average performance in attracting foreign direct investment, whether compared with the world average or that of industrialized countries only (Dreyhaupt, 2006: 152–153).

The next chapter considers the European Union's state aid rules in detail, along with other disciplines that exist for investment incentives.

8 Disciplines

This chapter discusses the numerous attempts to discipline investment incentives. As discussed earlier, a number of studies, such as that of Head, Ries and Swenson (1999) and Albornoz and Corcos (2007), offer theoretical justification for multilateral control of incentives. Here we consider several real-life attempts in that direction. First, this chapter analyzes the rules and effectiveness of the most comprehensive disciplinary effort, that of the European Union. The general outline of rules as well as the most important framework applying to investment incentives *per se*, the Multi-Sectoral Framework on Regional Aid for Large Investment Projects, are considered. The various rules in the GATT Uruguay Round agreements that affect subsidies, including the Agreement on Subsidies and Countervailing Measures, the General Agreement on Trade in Services (GATS), and the Agreement on Trade-Related Investment Measures, are then explained. Third will be two sub-national agreements on incentives among Canadian provinces and territories, and among Australian states. Both now have enough of a track record to assess whether they have been successful or not. Fourth, we will examine the history of voluntary agreements in the United States. The chapter finishes with an analysis of the disciplines that exist in a small number of the many bilateral investment treaties (BITs) and investment incentive agreements (IIAs) in force around the world, as well as in bilateral or regional free trade agreements.

8.1 European Union state aid control

“State aid” is the term the European Union uses to refer to subsidies. Thus, state aid law applies to far more than investment incentives, but to all types of selective government support to business, even state-owned firms. Of particular interest for this report are the rules on regional aid, most notably the formerly stand-alone Multi-Sectoral Framework on Regional Aid for Large Investment Projects (“Multi-Sectoral Framework” or MSF). EU state aid rules begin from the presumption that subsidies should not be used by Member States unless they contribute to a goal of the European Union as a whole (not just that of a Member State) and do so in a way that is least distorting of trade within the EU. In other words, there must be a *quid pro quo* (the French term for this principle is *contrepartie*; it is sometimes translated into English as “compensatory justification” or, more literally, “counterpart”); if a government gives subsidies to a company, it must contribute to the goals of the EU. Contributing to the development of backward areas, restructuring of firms in difficulty, research and development, controlling pollution and employment support can all potentially serve this function.

A second critical element of state-aid control is oversight: all subsidies must be notified to the European Commission in advance, and may not be implemented until they are approved by the Commission, which can prohibit or modify them if they are in violation of EU law.⁴² The jurisprudence of the European Court of Justice (ECJ) has upheld the Commission in requiring the repayment of aid incompatible with Articles 87–89 of the Treaty of Rome (the European Union’s founding document) that has been given without respecting the notification rules (see Thomas, 2000: 115–121; 233–238).

The regional aid rules are central to state aid control because they designate a maximum aid intensity for every location within the European Union (Thomas, 2000: 89). The key idea is that poorer areas of the EU can give larger subsidies than richer ones; indeed, the most well-off regions cannot give regional aid at all.⁴³ Governments can only give support to firms in proportion to the disadvantage of the region (Thomas, 2000: 57). Eligible areas are determined primarily by the region’s GDP per capita in relation to that of the EU

⁴² As Sinnaeve (2007: 93–94) notes, the notification requirement has been relaxed by which it is possible to notify an aid program, after which individual applications of the program do not need to be notified in advance, but must still be reported on *ex post*, and through block exemptions (for example, to small- and medium-sized enterprises or SMEs), where notification is not required provided the aid fulfills all the requirements of the exemption regulation.

⁴³ They may be able to give SME aid or R&D support; however, this will be closely scrutinized by the Commission.

average⁴⁴ or national average,⁴⁵ but actual maps are negotiated between the Commission and each Member State. As Wishlade (1997: 22–23) relates, drawing up these maps has at times been highly contentious. Regional aid is the most likely form to be used for attracting mobile investment and, with that in mind, the Commission adopted the Multi-Sectoral Framework on 16 December 1997. The “MSF 1998” was replaced with the “MSF 2002,” while beginning in 2007, the MSF rules are no longer separate, but a part of the main guidelines on regional aid. These provisions now apply to projects with over € 50 million in eligible expenditures (fixed investment plus first two years’ wage costs), with the effect of reducing the aid maximum to 50 per cent of the normal maximum for expenditures between € 50 and € 100 million, and 34 per cent of the normal maximum for expenditures above € 100 million.⁴⁶ Thus, in a region where the normal aid maximum was 30 per cent of eligible expenditures, an investment of € 200 million could receive up to € 32.5 million (= [50x 0.3] + [50x 0.15] + [100x 0.1]). Investments receiving more aid than the maximum allowable for a € 100 million investment must be individually notified to the Commission; in this example, a project receiving more than € 22.5 million in aid would need to be notified individually. In addition, the Commission’s decision also takes into account the competitive situation of the industry in question (demerits for a dominant producer) and employment. Thus, the Commission in 2005 informally indicated to the Irish government that it would not approve a proposed € 170 million aid to Intel for a € 1.6 billion chip fabrication plant at Leixlip, and the Irish authorities withdrew the aid notification. Though Intel went through with the investment, Ireland feared the decision would make it less competitive in the future for such major investments, a view encouraged by Intel’s chairman, Craig Barrett (Smyth, 3 March 2005; Staunton, 2005; Staunton, 2006; Shoemith, 2006).⁴⁷

Also important to an understanding of the state aid rules are the rules on aid for environmental purposes. The EU first introduced such rules in 1974 (European Union, 2005a: 27), staking out a policy generally supportive of using subsidies to promote energy conservation and the environment. Prior to the 2001 Guidelines on State Aid for Environmental Protection, such support was “of limited importance,” comprising only 1.85 per cent of state aid to manufacturing and services in 1996 to 1998 (European Union, 2004b). Beginning in 1999, however, the subsidies given in this category rose steadily, mostly in the form of tax exemptions rather than grants (European Union, 2005a: 37, Table 12). In 2005, aid for environmental protection and energy saving was the highest category of all aid at € 12.6 billion, making up 33.5 per cent of horizontal aid, which in turn was 84 per cent of all aid to manufacturing and services in 2005 (European Union, 2006b: Tables k5–2 and k5–4).

Much of this aid is in the form of partial exemption from new energy taxes. Introduced to provide incentives for reduced use of fossil fuels, such “ecotaxes” also raised fears that they would make European industry uncompetitive internationally. As a result, many of the taxes included provisions to exempt manufacturers and other large-scale users from part of the new tax. For example, effective 1 April 1999, Germany introduced an ecotax with both a general rate reduction for businesses and a rebate for manufacturing (this discussion is based on European Union, 2007c). These reductions were considered state aid, with the amounts for 2005 being € 1.85 billion for the rate reduction and € 1.9 billion for the rebate. As the Commission noted in its decision, even after these provisions, German manufacturers had to pay rates that were above the minimums

⁴⁴ With the influx of new Member States in 2005 and 2007, a number of areas, comprising about 3.6 per cent of EU population, were no longer below 75 per cent of the EU average, but are being given transitional status until 2010 (European Union, 2007b).

⁴⁵ Regions that are disadvantaged in relation to national averages but not relative to EU averages are termed “C”-level regions, and lower aid intensities are allowed than in “A”-level regions.

⁴⁶ For investments under € 50 million, the normal aid maximum applies, and the case need not be individually notified in advance if it is given under the terms of an approved aid scheme (whereas an *ad hoc* aid of € 45 million would need to be notified in advance).

⁴⁷ However, the Commission did approve of Ireland granting € 48.25 million in aid to Centocor several months after its denial of the Intel aid, a case that had the Irish worried again. In this case, however, the area where the investment was located was an area eligible for regional aid (Beesley, 2006).

set in the EU's 2003 Energy Tax Directive, which led the Commission to approve the proposed aid. Since Germany, by far the biggest absolute user of environmental aid in 2005, spent € 7.1 billion for this purpose (European Union, 2006b, Table k5–4), it can be seen that these two measures alone accounted for more than half of that. As the Commission admits, “only a relatively small proportion comprises aid to make investments that reach higher environmental standards than community standards or to undertake further investment to reduce pollution or for the development of renewable energy sources” (European Union, 2005a: 39). The vast majority is exemption from ecotaxes to make them politically palatable.

As discussed in Chapter 7, some aid for environmental purposes in the EU consists of investment incentives for biofuel production facilities. Under the 2001 Guidelines for State Aid to Environmental Protection, capital grants of up to 40 per cent are permitted for investment in energy savings (European Union, 2004b). While information is available on some specific projects, aggregate amounts of incentives are harder to determine. Kutas, Lindberg and Steenblik (2007: 54–56) report that Germany spent € 1.75 billion on all investment aid to bioenergy, while in other Member States for which a total amount can be estimated, it is at most in the tens of millions of euros.

The European Union has seen a general downward trend of state aid (European Union, 2006e: 9–10), fulfilling an agreement made at the Stockholm European Council in 2001. This is one indication of the success of state aid control. In addition, the Commission recently received a big boost in its use of aid repayment orders. The European Court of Justice ruled in October 2006 that appeals of repayment decisions to national courts could not be allowed to suspend the repayment action; only actual rulings from Community Courts (the Court of First Instance or the ECJ itself) could halt immediate repayment (Willemot and Fort, 2007). This is an important development because such appeals to national courts had long been used to drag out the repayment process (in Germany, for over eight years in some cases).⁴⁸ As Willemot and Fort note, allowing illegal aid to be unrepaid maintains the existence of unfair competitive situations. This decision greatly strengthens the Commission's hand in dealing with recalcitrant Member States.

An examination of the top incentive awards in the United States and European Union shows that the EU has managed to keep award levels well below those in the United States. While incentive awards for auto facilities in the U.S. have been as large as US\$ 410 million (Thomas, 2007b), about € 289 million at current exchange rates, the largest award in the European Union has been the € 194.49 million awarded to Hyundai (see Chapter 7 above); second was Hankook's € 92.61 million (Wishlade, 2008: Figure 18); and third was € 69.4 million for AutoEuropa in Portugal (Wishlade, 2008: Figure 17). Wishlade (2008: Figure 22) shows more generally that the largest awards in the United States are substantially larger than those in the European Union.⁴⁹

Recent developments in EU state aid control stem from the State Aid Action Plan for 2005 to 2009 (European Union, 2005b). In this document, the Commission announces its goal of “less and better targeted state aid,” simplified procedures and greater responsibility on Member States for carrying out the rules and the concomitant requirement for them to respect the rules. In particular, the action plan includes the incorporation of the Multi-Sectoral Framework within the regional aid guidelines, a proposal for a General Block Exemption Regulation, which is now pending before the Council of Ministers, and a discussion of how to ensure compliance by Member States, including the possibility of seeking financial penalties as provided under Article 228 of the European Community Treaty.

One attractive element of the EU state aid regime is that the notification requirement ensures wide availability of information on subsidies in the European Union. Moreover, the Commission (more precisely, the Directorate-General for Competition) publishes a tremendous amount of data, all of which are available on its

⁴⁸ See Thomas (2000: 236–237) and Tucker (1998).

⁴⁹ Note, however, that reported awards in the United States are on a nominal, rather than present-value, basis, whereas reported awards in the EU are present value. This reduces the true gap to some extent.

Web site at ec.europa.eu/comm/competition/index_en.html.⁵⁰ Particularly notable were the “Surveys” on state aid, beginning in 1989, which made public a database on state aid going back to 1981. The Surveys have now been superseded by the online state aid “Scoreboard.”

8.2 World Trade Organization subsidy rules

The World Trade Organization has three agreements that touch on investment incentives, the Agreement on Subsidies and Countervailing Measures (SCM), the General Agreement on Trade in Services (GATS), and the Agreement on Trade-Related Investment Measures (TRIMS), all adopted as part of the Uruguay Round negotiations. In terms of disciplining incentives, the Agreement on SCM is the most important. This agreement also requires the notification of subsidies, which is important in its own right.

8.2.1 Agreement on Subsidies and Countervailing Measures

Like EU state aid rules, the Agreement on Subsidies and Countervailing Measures applies to all subsidies, not just location incentives. While previous GATT rounds had contained subsidy provisions, the ASCM defined a subsidy for the first time, and provided that a subsidy had to be specific to be considered actionable (export subsidies are automatically considered specific). One intriguing aspect of this agreement was its classification of subsidies according to a traffic light scheme: red-light, or prohibited, subsidies; yellow-light actionable subsidies; and green-light non-actionable subsidies. The support measures that could potentially fall into the green-light category largely followed European Union practice on subsidies that could be considered compatible with the Treaty of Rome—that is, regional aid, R&D aid, and aid for meeting new environmental requirements.

Despite pushing for generous allowances for research and development support, the Clinton administration was generally hostile to the idea of green-lighting certain aid, and the designation expired in 1999, although this was due more to objections from developing countries (Thomas, 2000: 261–262). Now, all subsidies can be classified as either prohibited (the former “red-light,” i.e., based on exports or domestic content) or actionable (all other subsidies, provided they are specific).

Also expiring in 1999 were provisions establishing criteria for a rebuttable presumption of serious prejudice. In Article 6.1, one factor which could lead to a presumption of serious prejudice was *ad valorem* subsidization of 5 per cent. This linked to Annex IV, which set forth the method of calculation and, in a provision relevant to investment incentives, stated that for companies in a start-up situation, a subsidy of 15 per cent of the investment would also satisfy the presumption (WTO, Agreement on Subsidies and Countervailing Measures). When Article 6.1 and Annex IV expired in 1999, there was no longer any guidance specifically for location subsidies, hence incentives are to be incorporated into an overall calculation of subsidy levels.

Investment incentives have long been a part of WTO jurisprudence on subsidies. In the 1996 case of Italian pasta (termed “Certain Pasta from Italy” in the U.S. countervailing duty case), the United States found that a number of Italian pasta-makers had received subsidies from the Italian government, regional governments, the European Regional Development Fund and the European Social Fund (Department of Commerce, 2007). While some of the alleged subsidies were for export, several were investment aids.⁵¹ More recently, the European Communities have argued that state and local investment incentives to Boeing in the state of Washington (the result of a 20-state bidding war, as recounted in LeRoy, 2005: 87–88), valued at US\$ 3.2

⁵⁰ Although many DG-Competition state aid documents are available in multiple languages, English is its main working language.

⁵¹ Italy and the European Communities raised the defense that these subsidies were “*de facto* green,” that is, they would have qualified for non-actionable status—as regional aid—had they been able to be notified in advance (they existed prior to the SCM agreement). While the U.S. did not accept this position, both Canada and New Zealand did (Thomas, 2000: 262).

billion over 20 years, constituted a violation of subsidy rules (WTO, 2007). The case is still pending at the time of writing.

Article 27 of the Agreement establishes “special and differential” rules for developing countries. As Mutti (2003: 83–85) points out, an important consequence of this is that it enables poorer countries to maintain export processing zones, which would otherwise run afoul of the prohibition on export subsidies. The list of nations qualifying for this exemption includes all of those designated by the United Nations as “least developed” plus 20 nations with a GNP per capita under US\$ 1,000 at current exchange rates, of which the largest were India and Indonesia (WTO, Agreement on Subsidies and Countervailing Measures, Annex VII).

8.2.2 General Agreement on Trade in Services

The General Agreement on Trade in Services (GATS) may have an eventual effect on investment incentives. Unlike the TRIMS agreement (below), which applies to trade in goods, the GATS applies to the provision of services across borders in any of four “modes” of supply: 1) remote; 2) consumer presence in supplying country (especially tourism); 3) commercial presence (a bank); or 4) personal presence of a supplier in the purchasing country (a consultant, for instance).⁵² Investment incentives could easily occur for any of the first three modes: A call centre could be either mode 1 or 3, depending on whether it served foreign or domestic customers (and obviously, it could be both), while hotels and other tourism-related investments have certainly received subsidies as well. Article XV of the GATS provided for future negotiations on the status on subsidies to services; however, there have been no agreements to date on this contentious issue (Global Subsidies Initiative, n.d.). Should such negotiations ever come to fruition, the “eventual” effect on incentives might finally arrive.

8.2.3 Agreement on Trade-Related Investment Measures

The Agreement on Trade-Related Investment Measures (TRIMS) forbids governments granting incentives from making them conditional on domestic content or trade-balancing rules, and prohibits foreign-exchange balancing rules, restricting the import of inputs, or restricting the recipient’s exports (Agreement on Trade Related Investment Measures, Annex). Indeed, TRIMS is not a regulation of incentives so much as it is a regulation of performance requirements on any investment; however, it is important to highlight that such measures cannot be imposed even when the investor receives a subsidy.

8.2.4 Subsidy notification

The Agreement on SCM includes the provision that all members must notify their subsidies to the WTO Secretariat. Unlike the situation in the European Union, this entails *ex post* notification as opposed to *ex ante* notification. In principle, these submissions should cover all subsidies given within a country, at all levels of government, and include the amounts spent on such support. If adhered to, this would be a valuable transparency exercise. However, by November 2006, a number of large countries had not submitted their 2005 “new and full” notifications, including India, Mexico, South Africa and the United States (WTO, 2006b).⁵³

Three important differences stand out between the EU state aid regime and WTO subsidy rules. First, the European Commission can act on its own initiative against subsidies it believes may be incompatible with the Treaty. It can act before a harm has even taken place if a proposed aid is properly notified. By contrast, World

⁵² These examples are taken from the WTO Web site summary of the GATS, consulted 18 September 2007 at <www.wto.org/english/docs_e/legal_e/ursum_e.htm#mAgreement>.

⁵³ The Global Subsidies Initiative, publisher of this report, maintains a database of new and full notifications at <www.globalsubsidies.org/private/modules/knowledgebox/external/index.php>.

Trade Organization subsidy disputes (and countervailing duty measures at the national level) are complaint-driven. Second, because of the notification requirement, subsidy discipline in the European Union is *ex ante* (except in the important case of non-notified aid), whereas WTO control is always *ex post*. Third, aid repayment is a common remedy for illegal subsidies in the EU, whereas it has only been used once in the WTO (in a 2000 complaint by the United States against Australia; see Thomas, 2000: 260), but is now being advocated by the United States in its complaint against Airbus (Alden, 2005).

It is also important to note that not all investment subsidies have trade effects. If a local government provides an incentive to Wal-Mart⁵⁴ or other retailer, this will be irrelevant to trade and thus fall outside of the terms of reference for the Agreement on Subsidies and Countervailing Measures. However, if and when subsidies disciplines are inaugurated under the General Agreement on Trade in Services, such incentives could be regulated under the GATS.

8.3 Sub-national agreements on incentives

Canada and Australia are two federal states where competition for investment at the sub-national level has at times been severe. In both instances, the pressures have led to attempts to control incentives.

8.3.1 Canada

In Canada, the subsidized relocation of investment, or poaching (usually called “piracy” in the United States) was a major problem in the 1990s (DeMont, 1994). It was in this context that the Code of Conduct on Incentives was agreed to in July 1994 as part of the Agreement on Internal Trade (AIT), whose parties include the federal government, all 10 provinces and two of the country’s three territories.⁵⁵ The Code (Annex 607.3) explicitly prohibited relocation subsidies in Article 3, Prohibited Incentives (Internal Trade Secretariat, 1994):

No Party shall provide an incentive that is contingent, in law or in fact, and would directly result in an enterprise, located in the territory of any Party, relocating an existing operation into its territory.

Moreover, under Article 4, Avoidance of Certain Incentives, the governments agreed to make “best efforts” to avoid bidding wars; however, unlike Article 3, this was not legally binding.

Thomas (2000: 177) argued that banning poaching could be seen as a useful way of breaking down the Prisoners’ Dilemma of investment competition into smaller steps, as suggested by Axelrod (1984: 131–132):

Of all location subsidies, however, the problems inherent in relocation incentives are most evident because no new jobs are created by such moves. By tackling a small but significant and clearly egregious part of the overall problem, U.S. states might be able to similarly launch themselves into greater cooperation in avoiding investment subsidies.

The Code has now been in existence for 12 years. Has it been a success? Its first test was anything but encouraging. In 1995, United Parcel Service (UPS) relocated 870 jobs from British Columbia, Manitoba and Ontario to New Brunswick, receiving C\$ 11 million in training grants in the process (Thomas, 2000: 178; Brown, 2006: 62–63). British Columbia filed a complaint in September 1996 under the AIT. After charge and counter-charge between the two provinces, the dispute was never resolved. The procedure has never been used since.

⁵⁴ According to Good Jobs First, Wal-Mart has received at least US\$ 1.2 billion in subsidies from U.S. state and local governments since 1980, including US\$ 200 million in the last three years alone (Mattera and Purinton, 2004; Good Jobs First, 2007a).

⁵⁵ Nunavut, which did not exist when the agreement was signed in 1994, is not a party, but is negotiating for accession to the agreement.

However, this does not mean that the use of relocation incentives has disappeared. In 2005, Clarke Inc., a trucking company, moved its headquarters from Concord, Ontario, to Halifax, Nova Scotia, for which it received C\$ 1.9 million in payroll rebates (Nova Scotia Business, Inc., n.d.; Richer, 2005; Thomas, 2007b), a deal that is even posted on the province's investment attraction Web site. Quebec has offered incentives to small high-tech companies in the Ottawa area to move across the river to Gatineau (Tuck, 1999). Ontario offered Sobeys incentives to relocate its headquarters from Nova Scotia, causing the latter to give a retention subsidy (interviews). Nonetheless, it must be noted that these occurrences were quite small compared with the UPS relocation of 1995. Clarke only moved 95 jobs, and the individual Quebec deals are smaller still. Moreover, it appears that Ontario takes a benign view of poaching; as one interviewee put it: "they see themselves as playing on a much larger stage." Thus, the loss of 95 jobs to Nova Scotia is not too significant.

Canada has further factors cutting down the competition for investment. As mentioned in Chapter 2, in eight of Canada's 10 provinces, local governments are prohibited from giving incentives (Reese, 1993; Thomas, 2000; interviews). The two still allowing municipal incentives have just over 2 million in population and few major cities. Thus, compared with the United States, where thousands of municipal governments join the 50 state governments in competing for projects, the cooperation problem faced in Canada is far more tractable.

Canadian provinces do seem to use incentives far less than U.S. state and local governments. The prohibition of municipal subsidies in most provinces means that the retail sector is rarely subsidized.⁵⁶ In industries where the two compete directly, Canada appears to benefit from its universal health insurance system and can pay less in incentives. In the auto industry, for example, in 2005 Ontario landed a Toyota assembly plant with a package worth US\$ 100 million at the exchange rate prevailing at the time, or 15.5 per cent of the cost of the investment. Meanwhile, new assembly plants in the United States from 1999 to 2006 were receiving packages worth from US\$ 133 million (16.6 per cent) for Toyota in Texas to US\$ 410 million (34.1 per cent) for Kia in Georgia (Thomas, 2007b; see also Chapter 6).

In call centres, subsidies may be more comparable: provinces tend to pay more in training grants, but states and cities give away a lot of free land, the value of which is difficult to determine. At the same time, competitive pressures are clearly at work. While Ontario's Conservative Party governments of the 1990s and early 2000s had cut subsidies to the auto industry, the province received no new assembly facilities, and several were closed, in the period from 1995 to 2003 (Keenan, 2003; Woodcock, 2006). As a result, the Liberal government elected in 2003 established a C\$ 500 million Auto Investment Strategy Fund, which funded the new Toyota plant, reinvestments by the Big Three (General Motors, Ford and Chrysler), and new parts facilities by Honda and Linamar (Site Selection, 12 June 2006). However, if we look at the overall pattern of incentives, they are falling in Canada while they are probably still rising in the United States.⁵⁷

One possible exception is support for research and development, which is generous in Canada. For example, the British Columbia government provides 100 per cent deductibility of both current and capital R&D costs, and a 10 per cent tax credit added on top of a federal 20 per cent tax credit (BC Ministry of Economic Development, 2006). Quebec provides a tax credit of 17.5 per cent (Larson, 2006). Whether any of this qualifies as a subsidy depends on the *de jure* or *de facto* specificity of each particular program.

The most recent development in Canada has been the Trade, Investment and Labour Mobility Agreement (TILMA) between Alberta and British Columbia. This pact was negotiated under Article 1800 of the Agreement on Internal Trade, which allows the parties to reach additional agreements that need not apply to all of them. The agreement, which came into force on 1 April 2007, bans business subsidies in the two provinces under its Article 12. These provisions apply to all levels of government (interview).

⁵⁶ Saskatchewan is an exception, since municipalities are not prohibited from giving incentives. Even Wal-Mart has received support there (Klein, 2006).

⁵⁷ While it is difficult to make an exact estimate of spending by state governments, Aydin (2007) shows that the number of incentive programs at the state level continues to increase, though not as rapidly as in the 1980s.

It is unclear whether the fall in incentives and the reduction in poaching are actually due to the Code of Conduct. One provincial official involved with internal trade did not think so; instead, changes in governments brought in leaders less inclined to offer subsidies. Even in relatively interventionist Quebec, incentives have fallen over the last several years. The same has been true in New Brunswick (interviews).

8.3.2 Australia

In Australia, bidding wars and poaching were also considered to be a problem for the states and territories. An Industry Commission report in 1996 criticized state incentives and recommended that they be cut back or abolished entirely. The Industry Commission's successor, the Productivity Commission, published further estimates of state incentive spending in 2002 (Productivity Commission, 2004). Following this, five of the country's six states (New South Wales, Victoria, Tasmania, South Australia and Western Australia), plus the Northern Territory and the Australian Capital Territory (ACT), reached an agreement in 2003 to end bidding wars among them. In addition, the parties provide annual reports to each other on their investment attraction. Queensland was the only state that refused to go along. Stimulated in part by an A\$ 100 million subsidy to Fox News in Sydney (Markusen and Nesse, 2007: 5), the signatories banned relocation incentives and pledged not to use subsidies for investments that were clearly coming to Australia (State of Victoria, 2003). According to Victorian Treasurer John Brumby, the "Interstate Investment Co-operation Agreement" (IICA) built on an information exchange program with New South Wales. He said:

Victoria has already exchanged information with NSW on 30 projects, and companies have been caught out overstating the incentives offered by the potential "rival" location. It's estimated that this action alone has already saved taxpayers around A\$ 20 million.

The three-year agreement was renewed for another five years in 2006 (State of Victoria, 2006). A year later, Brumby said the signatories had saved: "tens of millions of dollars" as a result of the agreement and that "...some jurisdictions [were] noticing a decrease in the number of companies seeking incentives to relocate from one State or Territory to another" (State of Victoria, 2007). The agreement remains largely informal, with no monitoring or enforcement mechanisms, a weakness criticized by the Productivity Commission in 2005 (Insight Economics, 2006: 24). Further, the fact that Queensland has not signed is considered a problem by the IICA's parties, with some going so far as to say "that unless there is a uniform agreement they will start to undertake 'poaching' activities in a certain jurisdiction," (Insight Economics, 2006: 25), presumably Queensland.

As with Canada, the annual report is not publicly available, reducing the transparency of incentives offered by the states and territories.

8.3.3 The United States

3. In the United States, there are three main aspects of disciplines on incentives. The first is controls on federal subsidies used by sub-national governments. Second, there have been formal relations among states, including two regional no-raiding agreements, plus the work of the National Governors Association (NGA). Third, the most significant force for reform in the United States has been private non-governmental organizations (NGOs).

Two main federal issues have been important: industrial revenue bonds (IRB), which the federal government subsidizes through their tax deductibility; and campaigns for no-raiding provisions in the main federal subsidy programs available to state and local governments.

Industrial revenue bonds are tax-exempt bonds issued by local governments to fund a wide variety of projects. Since the dividends from these bonds are exempt from federal tax, issuers can pay a lower interest rate than would be the case with a taxable bond. Until 1986, there were few restrictions on them; they were very popular with local governments because the entire cost was borne by the federal government through their tax deductibility. In the 1986 tax reform, caps were put on the amount of bonds that could be issued and restrictions placed on their use (Thomas, 2000: 164).

As Greg LeRoy (1999) has said: “behind every reform, there lies a horror story: a company that failed to deliver or a company that got subsidies but then did something to offend the public.” This is true for all of the cases examined here. For example, in May 1994, Briggs and Stratton accepted subsidies from cities in Missouri and Kentucky to relocate lawnmower production from Milwaukee, Wisconsin. In both Missouri and Kentucky, the local governments used their federal Community Development Block Grant subsidies from the federal government. Moreover, in both instances, the workers losing their jobs were unionized, while the new locations were non-union. Wisconsin’s Congressional delegation spearheaded the reform of CDBG: it was successful as early as July 1994 in getting the U.S. House of Representatives to place no-raiding requirements into the legislation, but a filibuster threat in the Senate by Missouri Senator Kit Bond prevented its passage. The ban was finally adopted in November 1998 (Thomas, 2000: 166). Similar stories lie behind the anti-piracy provisions that were eventually placed into the Urban Development Action Grant, Economic Development Administration, Small Business Administration and Workforce Investment Act programs (Thomas, 2000: 165).

State governments have entered into two voluntary no-raiding agreements. In the 1980s, the Council of Great Lakes Governors approved an anti-piracy pact, but it collapsed even before it came into effect. A 1991 agreement among New York, New Jersey and Connecticut met the same fate a few days after it started (Schweke, Rist and Dabson, 1994: 70). New York City has been a particular target of nearby jurisdictions, and has been subject to local companies threatening to move out of the city in order to receive retention subsidies (LeRoy, 2005: 38–43).

The National Governors Association (NGA) has played an important political role in the United States. State governors are quite aware of the dangers of bidding wars for investment. However, the NGA has consistently argued that there should be no federal intervention to stop incentives, and that states should refrain from bidding wars because avoiding them is good policy (Kayne and Shonka, 1994: 25–26). However, the track record of state behaviour in using relocation subsidies and taking part in bidding wars makes this view implausible (Thomas, 2000: 168).

The main impetus for enacting disciplines in the United States has come from civil society organizations. Washington-based Good Jobs First has built itself into the nation’s clearinghouse for NGOs involved in subsidy reform, and has expanded to offices in New York and Chicago. Its Web site, www.goodjobsfirst.org, should be consulted by any researcher interested in the state of play of U.S. subsidy reform.

One of the main demands of state-level organizations has been transparency. As noted already, many incentive deals are shrouded in secrecy, making it impossible to monitor their operation. Beginning with Minnesota in 1995, some 10 states now have firm-level disclosure of subsidy deals. The Minnesota law requires that all state and local government subsidies must be reported, that the granting authority set job and wage standards for those subsidies, and requires them to use clawbacks if the job goals have not been met within two years. Along with Minnesota, Maine and Illinois have the most comprehensive reporting requirements, and Illinois even posts its reports on the Web (Good Jobs First, n.d.).

A second major issue has been the Living Wage movement. According to the ACORN Living Wage Resource Center (n.d.), 140 cities have enacted ordinances that require subsidy recipients and city contractors to pay wages above a threshold often related to the U.S. poverty line. ACORN (Association of Community Organizations for Reform Now) has been directly involved in 15 of these campaigns, including St. Louis, St. Paul and Detroit. The goal of this requirement has been to extract benefits from the investments made, rather than directly controlling the offering of subsidies.

Building on the idea of extracting concrete commitments from investors are Community Benefit Agreements.

According to Good Jobs First (n.d.):

The community benefits movement is founded on the premise that economic development should create tangible improvements for local residents, particularly those in low-income neighbourhoods. Community benefits agreements (CBAs) are legally enforceable contracts, signed by community groups and by a developer, which spell out a set of community benefits that the developer has committed to provide as part of a development project.

Typical provisions include “first source” hiring (i.e., neighbourhood residents), training funds, job quality provisions (wages, benefits), affordable housing if there is displacement, and environmental commitments, to name a few. CBAs have been negotiated in Los Angeles, Denver and Milwaukee (Good Jobs First, n.d.).

Reflecting the environmental critique of subsidies is the Green Scissors campaign. This campaign brings together organizations from both the left and right. The core groups are Friends of the Earth, Taxpayers for Common Sense, and the U.S. Public Interest Research Group (USPIRG). Beginning in 1993, the groups released their first report titled “The Green Solution to Red Ink,” which was later changed to “Green Scissors Report.” The reports have targeted projects such as the TPX fusion reactor and Advanced Neutron Source project, both of which had substantial waste disposal problems (Thomas, 2000: 169–170). According to the group’s Web site, it “has helped save taxpayers more than US\$ 26 billion” (Green Scissors, n.d.).

The Commerce Clause of the United States Constitution prohibits states from interfering with interstate commerce. In December 1999, a group of citizens in Ohio and Michigan challenged tax credit programs that partially funded the retention of a Jeep factory in Toledo, Ohio (*Cuno v. Daimler-Chrysler*). While the District Court ruled in favour of Ohio and Daimler-Chrysler, the 6th U.S. Circuit Court of Appeals ruled that the state tax credits (but not local property tax abatements) did violate the Commerce Clause. However, in 2006, the U.S. Supreme Court ruled that the plaintiffs lacked the standing to bring the case and dismissed it, sending the plaintiffs back to square one. Prior to the Supreme Court decision, U.S. Senator George Voinovich had introduced legislation to effectively overturn the ruling had the Supreme Court upheld the Appeals Court decision; he stated after the decision that he still intended to pursue it to stop such cases from being filed again (Koff, 2006).⁵⁸

8.4 Bilateral investment treaties and investment incentive agreements

Bilateral investment treaties (BITs) are agreements for the protection of investors in a particular host country. They are typically negotiated when firms in the investing country perceive political risk (such as expropriation or currency inconvertibility) to be a problem in the host nation. BITs commonly prohibit expropriation without proper compensation (as well as lesser adverse actions toward the investor), and provide that disputes will be subject to international arbitration rather than host country courts. The attraction for developing countries is that by agreeing to BITs they will become more likely to receive investment from their treaty partners (an issue beyond the scope of this report). Beginning in 1959 (Elkins, Guzman and Simmons 2004: 37), there are now over 2,200 bilateral investment treaties in effect (Houde and Yannaca-Small, 2004: 3). BITs rarely (never?) address the disciplining of investment incentives, because their purpose is to protect the investor rather than place limits on benefits that the investor might receive from a host government. As Houde and Yannaca-Small (2004: 7) put it: “...investment incentives are not usually an issue covered by BITs, even when they include provisions on the making of an investment...”

In the United States, investment incentive agreements (IIAs) are entered into by the Overseas Private Investment Corporation (OPIC) with host governments. As Sheppard *et al.* (2005) point out, these differ from BITs by the fact that they are designed to protect OPIC rather than the investor. There are over 150 IIAs between the United States and foreign governments. “In general terms, these agreements provide for operation of OPIC’s programs in foreign countries, recognition of OPIC’s rights as transferee, assignee, and subrogee, and international arbitration between governments if disputes arise that cannot be settled by negotiation.” The “investment incentive” in IIAs is the permission for OPIC to operate in the country, offering benefits to the investor such as political risk insurance, loans, or equity investment. An important example is the investment incentive agreement between India and the United States (Indian Embassy, 1997). This IIA was invoked when OPIC sought arbitration in 2004 over a claimed expropriation of the Dabhol power plant, which was owned

⁵⁸ Disclosure: This author was one of the signers of an *amicus curiae* brief in favour of plaintiffs when the case was before the U.S. Supreme Court.

by Enron, Bechtel and General Electric (Sheppard et al., 2005). Again, this is not a discipline on incentives in the sense of preventing or regulating the host government's ability to offer inducements to an investor, but rather a protection against political risk.

8.5 Free Trade Agreements (FTAs)

The long-standing failure of the Doha Round trade negotiations has shifted the emphasis of many countries to the use of bilateral and regional free trade agreements to advance their trade and investment agendas. Typically, these FTAs have imposed stronger disciplines on performance requirements than the TRIMS agreement. The 2004 Australia-United States Free Trade Agreement (Department of Foreign Affairs and Trade, n.d.) goes beyond the TRIMS agreement by additionally banning export requirements, requirements or preferences for host country purchases, conditioning domestic sales on export performance, technology-transfer requirements and requirements that the investment be the exclusive supplier of its products to any market (Chapter 11.9, paragraph 1). However, the investment chapter at the same time explicitly permits governments providing investment incentives to enforce "compliance with a requirement to locate production, supply a service, train or employ workers, construct or expand particular facilities, or carry out research and development, in its territory" (Chapter 11.9, paragraph 3a). In addition, several of the "TRIMS Plus" bans mentioned above are not enumerated in paragraph 2 (performance requirements that cannot be combined with subsidies), i.e., export requirements, technology-transfer requirements and exclusive supply arrangements.

8.6 Conclusion

The European Union's state aid rules address subsidies comprehensively, but only in the last 10 years has the EU set up a framework specific to large mobile investment projects. The Commission's rules and procedures provide transparency and enforce a preference for poorer jurisdictions via the differential aid maxima allowed in the various regions. The Multi-Sectoral Framework, now incorporated into the Regional Aid Guidelines, sharply reduces the amount of aid available to large corporations, no matter what the aid maximum is for the location. The MSF's rules directly target investment incentives, and have been used to stop the award of location subsidies to Intel in Ireland. The Commission has substantial monitoring and enforcement capacity, which the European Court of Justice has consistently upheld, most recently with its ruling that appeals to national courts cannot suspend repayment orders for illegally granted subsidies.

Why has the European Union regime been such a success? Sinnaeve (2007: 97–98) emphasizes that the existence of an independent monitoring and enforcement authority is crucial. She believes that attempts to achieve subsidy control without an independent entity are unlikely to have much effect. This is certainly consistent with what some scholars such as Lipson (1984: 7) have said regarding factors that increase the likelihood of international cooperation (see also Thomas, 2000: 250–253).

Less comprehensive agreements in Canada and Australia have had a measure of success. In both cases, the use of relocation subsidies seems to be less of a problem than before the pacts, but whether this is because of the incentives agreements is less clear. In Canada, while the provinces make reports on their location incentives to the Secretariat on Internal Trade, this information is not publicly available. However, reasonable proxies do suggest declining use of subsidies (Brown, 2006), and this author's interviews in the spring of 2007 reveal a general sense that incentives are less of a problem, in part because several provinces have reduced their use. However, incentives for R&D are widespread and often generous, due to the happy combination (for economic developers) of spinoff potential and the reduced countervail risk of that type of subsidy. Australia's newer interstate agreement was renewed in 2006, but one state, Queensland, still refuses to join. Both of these agreements merit further study.

In the United States, the presence of thousands of local governments in the incentive game, in addition to the 50 states, creates a collective action problem that at times seems intractable. However, even interstate agreements with only a few parties have failed, suggesting it is not simply a problem of numbers. The failure of the Commerce Clause challenge to Ohio's tax credit programs is further grounds for pessimism. Still, citizen

pressure is slowly providing more transparency on incentives and also mandating the types of commitments governments must obtain from investing companies.

World Trade Organization subsidy rules are not crafted with a specific focus on investment incentives and are consequently a blunt tool for dealing with them. The European Union's challenge to state and local incentives to Boeing may create a useful precedent. The notification requirements would be useful if they were followed by the major nations; however, the United States is almost two years overdue for its 2005 "new and full" notification, and its 2003 notification does not report sub-national expenditure data (World Trade Organization, 2003). Similarly, India is almost four years overdue for its notification, reports only its export processing zone legislation with no expenditure data, and provides no information on sub-national incentives (World Trade Organization, 2001). While the Agreement on Subsidies and Countervailing Measures has little effect on the granting of incentives, the Agreement on Trade-Related Investment Measures has virtually none, and the General Agreement on Trade in Services does not yet have subsidy rules.

Bilateral investment treaties, even when they do address investment incentives, have little disciplinary effect in the sense of restricting or regulating when such subsidies can be given. Instead, consistent with their purpose of investor protection, a few do guarantee that promised investment incentives must be paid, and leave their non-payment open to international arbitration claims as a potential breach of the investor guarantees in the treaty. Recent bilateral and regional free trade agreements are creating a patchwork expansion of the TRIMS disciplines on performance requirements, but do not restrict whether governments can provide subsidies in the first place.

9 Conclusion

This chapter sums up what we know and, more importantly, what we still do not know and can be usefully addressed by further research.

9.1 What we know

Investment incentives can be expensive. Awards of more than US\$ 1 million per job have now been documented in a number of cases in the United States, in such industries as semi-conductors, steel and a banking data centre. Awards in the US\$ 100,000 to US\$ 200,000 per job range have been common for the automobile industry in the United States, and even higher amounts have been recorded in India and Brazil. Total spending by governments is harder to pin down, but various estimates have put the cost at 0.7 per cent of Vietnam's GDP (Fletcher, 2002), while state and local governments alone are estimated to have spent 0.5 per cent of U.S. GDP (cited in Peters and Fisher, 2004).

Location subsidies are widespread. They are used on every continent, in most countries, and often at multiple levels of government. They take a variety of forms, including grants, tax credits and exemptions, subsidized loans, tax holidays, free land and infrastructure, reduced price inputs such as power and so on. This plethora of instruments reduces transparency substantially.

Poor regions cannot consistently outbid rich regions for FDI, despite their greater need for it. This has been shown for the United States by Fisher and Peters (1998: 26) and for the European Union by the Commission of the European Communities (1990: 8–2; 1991: 8) and Yuill *et al.* (1994: 100–102). The main reason is that richer countries are much better able to give cash grants, while poorer regions must rely much more on tax holidays and other tax advantages whose multi-year spread degrades their present value. Obvious exceptions are poor regions of rich countries (eastern Germany, the Italian Mezzogiorno; see Thomas, 2000: 270), or poorer countries within the European Union, which now have access to Structural Funds that can be used for cash grants to inward investors.

There is a tendency for programs targeted to poorer areas to lose their focus over time, whether the programs form part of a centralized regional policy or a decentralized economic development policy. Greenbaum and Bondonio have shown this in their work on European Union Objective 2 regions and enterprise zones in the United States, and the successive weakenings of the Lee Act in North Carolina were noted in Chapter 2.

Most incentive competitions remain regional. Whether it is the auto industry, steel, biofuels, or (almost all the time) call centres, a potential investor is rarely looking at multiple regions for a given investment. Consider the European Commission's rejection of a cost comparison between Wales and Ohio, cited in Chapter 7; this illustrates perfectly the understanding that locating an engine plant for the European market in the United States made no sense. By contrast, the luxury car market is worldwide, and Ford was able to extract much higher than usual aid for its Jaguar unit in 1996 when it threatened to move production to the United States, where half of the vehicles were sold (Thomas, 1997: 133–134). The industry most likely to see global incentive competition is the computer industry, especially silicon fabrication.

The rise in capital mobility in the last 30 to 40 years, combined with the substantial information asymmetries of negotiations over incentives, means that the site-location process itself generates rents for a firm. The numerous instances in which firms have admitted that the site was chosen before incentive negotiations (or even a sham auction) began provide strong evidence for this (LeRoy, 2005 enumerates many examples). Companies have become more sophisticated in their understanding of this fact, and the rise of site-location consultants has helped speed the diffusion of this knowledge, but the underlying factor is that increasing capital mobility has made more sites economically viable for any given investment. As Thomas (1992, 1997) argued, this implies an increasing bargaining power for companies *vis-à-vis* host governments. The international relations literature provides us with important concepts for understanding this process. Consider Markusen and Nesse's (2007) focus on the importance of site-location consultants and devolution: these have clear

analogues in bargaining power theory, MNC learning and greater difficulty of government cooperation, respectively (Thomas, 1997: 9–18, especially Table 1.1). Indeed, I would argue that any theory of investment incentives that does not include both corporate rent-seeking and bargaining power is incomplete.

Controlling investment incentives is difficult. Even agreements to prevent subsidizing the relocation of existing businesses have failed in two instances in the United States. Whether approached through Prisoners' Dilemma analysis or more complicated games, control does appear to be desirable theoretically. The best example of feasibility is the European Union, which benefits from favourable institutional rules and an independent monitoring and enforcement body. The latter sets it off from other jurisdictions, such as Australia and Canada, which have agreements among states or provinces to head off poaching and bidding wars, but no independent monitoring or enforcement. In principle, Canada has an independent body, the Secretariat for Internal Trade, but in practice (since the United Parcel Service case) it has played no role in disputes over incentives. In both Canada and Australia, consultations do occur between governments over subsidies that are of concern, as well as requests for information about bids, in order to overcome information asymmetries between states and investors. The National Governors Association in the United States has affirmed that state governments have the right to make such requests, but the extent to which they do is not known.

9.2 What we don't know

Overall incentive spending is not widely known for most areas, even the European Union, which could improve transparency in this area by having Member States indicate which individual state aids are being used as incentives. This is an area sorely in need of further research. The United States and Canada both need research that aggregates total spending, but have a head start based on widespread press reporting of the costs of individual projects.

Furthermore, we especially do not have a good idea about overall spending, or even the cost of individual incentives, in developing countries. This is not likely to change soon, due to the numerous obstacles to transparency: some countries are non-democratic; some do not have sufficient administrative capability; their subsidy tools, particularly tax holidays, are not transparent; and there is little press coverage of any but the largest projects.

From a theoretical point of view, it is not proven that incentives affect the location of investment. While I believe they do, one useful approach to this question would be to replicate the Guisinger and Associates (1985) question: would this investment have been made without incentives, if all other countries were still offering incentives? Surveying firms that had publicly said they would have made their investment without incentives would be especially illuminating.

Whether investment incentives are, in general, a good policy, or a good policy for developing countries, is by no means clear. Compared with what? This is a critical question, and it is not always clear what the other feasible alternatives are from the many studies done. Incentives vs. no incentives vs. no incentives + low taxes vs. low taxes vs. coordinated incentives? Any of these may be feasible in a particular situation. Perhaps the thing we can say with the most certainty is that countries that are not already good locations for investment ("weak fundamentals," in Aldaba's (2003) words) cannot become good locations just by using investment subsidies.

The no-raiding agreements of both Australia and Canada appear to have had a measure of success, especially compared with decentralized cooperation attempts in the United States, yet the reasons for their apparent usefulness are unclear. Compared with the European Union, and despite Sinnaeve's (2007) recommendation that an independent body was key to control efforts, neither agreement has a central monitoring body (or, in Canada's case, it has not been relevant since 1995). Further investigation of these agreements is thus called for, in particular because they could be more politically feasible than full-blown incentive regulation (Thomas, 2000: 268).

The rise of site-location consultants has had a profound effect on bargaining between companies and governments, as theorists as varied as Thomas (2000), LeRoy (2005) and Markusen and Nesse (2007) have

emphasized. From a theoretical point of view, they can be considered as analogous to credit-rating agencies in the world bond market (as analyzed in Sinclair 1994, 2005): they have specialized knowledge, they provide information to investors and help coordinate their behaviour (Thomas, 2000: 211). Further comparative work of these two phenomena may prove illuminating in both economic development and international political economy.

As can be seen, while investment incentives are important throughout the world, there is much still to be known about them. Hopefully, this report will help stimulate such research.

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The GSI starts from the premise that full transparency and public accountability for the stated aims of public expenditure must be the cornerstones of any subsidy program. In cooperation with a growing international network of research and media partners, the GSI is endeavouring to lay bare just what good or harm public subsidies are doing; to encourage public debate and awareness of the options that are available; and to help provide policy-makers with the tools they need to secure sustainable outcomes for our societies and our planet.

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