IMPEDIMENTS TO INDUSTRIAL POLICY:
OVERCOMING PATH DEPENDENCY IN CANADA'S POST STAPLES TRANSITION

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Canada has historically been viewed as having a political economy based on resource exploitation and trade, a configuration referred to as a "staples" political economy (Innis 1930 and 1933; Watkins 1963; Clement and Drache 1978; Williams 1983). A staple refers to a raw, or unfinished bulk commodity product which is sold in export markets. Grain, fur, timber, fish, minerals, energy and other similar goods are staples, usually extracted and sold in external markets without significant amounts of processing.

Having had a staples economy in the past has raised several overlapping problems for industrial policy making in Canada, as it has for other countries with similar political economic structures, such as New Zealand, Sweden, Norway, Chile, Argentina, and Australia (Myles 1989; Laxer 1989). A staples economy tends to pit economic interests and activities involved in resource harvesting and exploitation against those involved in manufacturing and these types of conflicts were a hallmark of all of these countries' 19th and 20th century experience with industrial policy-making (Bliss 1982; Acheson 1972; French 1980; Mahon 1984).

In these countries, unlike many other developed countries concerned with issues such as manufacturing and technological development, the key industrial issues of the 20th century were related to resource management, often involving conflicts over existing or potential extraction and marketing activities (Morici *et al* 1982; Clarke-Jones 1987). These included attempts to secure markets for resource products through international trade treaties as well as efforts to promote continuing large-scale resource exploitation in frontier regions (Doern

1983; Doern and Toner 1985; Department of External Affairs 1983; Granatstein 1985; Gunton 1988).

While most observers would agree that historically Canada had a staples economy, there is considerable disagreement over whether this depiction continues to accurately characterizes the contemporary economy. Earlier debates in the 1960s within the 'staples school' itself centered on whether Canada had emerged as an industrial power in the wake of the wheat boom and manufacturing activities associated with the First World War (Bertram 1963; Richards 1985). Given that the manufacturing sector failed to grow relative to the rest of the economy outside of wartime, however, staples analysis re-appeared in the 1970s, with a focus on attempting to understand the reasons why this had occurred (Drache 1978; Clement and Williams 1989; Clement 1997). During this period emphasis was placed on the negative role played by factors such as foreign direct investment in promoting a staples trajectory, either intentionally by supplying increased amounts of resources to the U.S. manufacturing sector, or indirectly through the concentration of research and development activities at head office locations in the U.S. (Clarke-Jones 1987; Britton and Gilmour 1978).

Current debates focus less on the impact of a transition from primary to secondary activities and more on the causes and consequences of the growth in tertiary (or service) sector employment and production which has occurred in Canada in the post World War II era (Coffey 1996; Warton 1969). The idea that the Canadian political economy has moved beyond its previous "mature" staples condition and has now entered a new "post-staples" mode has led to a variety of debates in Canada concerning the consequences this has for the design and intent of government industrial policy-making. (Anderson *et al* 1998; Niosi 1991a and 1991b). These debate are germane not only to Canada, but also to other countries with similar political economies (Clarkson 2001).

Elements of a Post-Staples Political Economy

Mature, advanced, staple economies have the following features:

- substantial depletion of resource endowments;

- well established export markets for principle staple commodities;
- increasingly capital- and technology-intensive resource extraction processes;
- increasing competition from lower-cost staple regions;
- evolution of development from 'pure' extraction to increased refining and secondary processing of resource commodities;
- increasing diversification of the industrial structure, with manufacturing, tourism, and local administration and services;
- evolution of settlements both within and outside the metropolis;
- increasing pressure from "environmental" groups to inhibit traditional modes of resource extraction and stimulate development alternatives (Hutton 1994).

These characteristics are found in many countries. They were conspicuous in Canada in the post World War II period as the political economy shifted away from its original roots in an expansionary staples mode (Howlett, Netherton and Ramesh 1999). This shift was driven by a number of factors, including the results of import-substituting industrial policies on the part of successive Canadian governments, as well as other factors centered on both the failure to develop new staples and the growing international competition in existing ones (Eden and Molot 1993).

By the 1960s there were significant challenges associated with a mature staples political economy. These included severe pressures on critical resource sectors; the prospect of substantial contractions in resource industries, reflecting supply conditions, and increasing public concerns about resource depletion and environmental degradation. Beginning with Ontario and Quebec, the provinces began to undergo a shift towards a post-staples political economy in which dependence on resource extraction and distinct sets of metropolitan-hinterland relationships were replaced by a shift to services, rapid tertiarisation and significant industrial expansion in regional centres. By the 1970s and 1980s, all jurisdictions in Canada witnessed an internal 'reconfiguration' of growth and development and an external reorientation of key international relationships (Hutton, 1994).

This restructuring of Canada's political economy has been associated with changes in the movements of capital, global competition, and technological innovation in the resource sector, all of which have resulted in the "downsizing" of the resource-based workforce and extensive job loss in rural areas. The loss of existing jobs, and the inadequate creation of new ones has become increasingly problematic in many regions which face decline and depopulation. The growth of the tertiary sector, on the other hand, is largely urban-based and involves the creation of more jobs with proportionally less direct, although often significant continuing indirect, resource reliance (Osberg, Wein and Grude 1995; Hessing and Howlett 1997).

Indicators of Economic Performance

The World Economic Forum, which annually publishes *The Global Competitiveness Report,* measures competitiveness by eight factors and ranks 53 selected countries accordingly. In late 1990s, Canada ranked 4th in "openness" (import barriers, FDI, etc.), 24th in "government" (size and level of state interference, etc.), 5th in "finance" (investment and saving, financial risks, etc.), 4th in "infrastructure", 4th in "technology", 3rd in "management", 15th in "labour" (regulatory flexibility, skills and productivity, etc.), and 8th in "institutions" (legal institutions, police protection, etc.) (World Economic Forum 1997).

From the viewpoint of neo-liberalism, the global dominant ideology of our time, this ranking (except for the role of government, which supposedly should have lesser role in the economy) seems an excellent record. However, if other factors are taken into consideration, including sustained industrial and technological development, economic diversification, social security, and long-term (un)employment, there are major causes for concern with the trajectory of the Canadian political economy and its ability to adapt to changing global conditions without a more activist industrial policy.

In this stage of globalization the most important aspects of a successful transition to a post staples political economy are technology and innovation, and the development of high-tech, science-based industries. Sustained competitiveness in these industries requires the creation of new

flexible structures, clusters of small, interrelated, and highly competitive companies, and an expanding infrastructure to support their sustained expansion (Edquist 1997; Etzkowitz 1994; Freeman 1991). Nurturing and facilitating these clusters is a significant part of a modern industrial policy appropriate to a post-staples condition. However, Canadian governments have generally failed to promote their creation. The reasons why this has been the case and the consequences for Canada's move towards a post-staples political economy are examined below.

The Contemporary Canadian Political Economic Profile

National political economies tend to exhibit a different mix of economic activities based on comparative factor endowments and the manner in which industries have developed over time in the jurisdiction concerned. The ability of a country to undertake the transition from trade to technological clusters in contemporary industrial policy-making is significantly affected by past activities, political-economic structures and organizations, and policy legacies.

Historically, three major features of the Canadian economy have shaped and maintained the status of the contemporary truncated manufacturing sector. These are: the predominance of a service economy, the staple economy, and the high level of foreign direct investment (FDI) in durable consumer goods production.

The Manufacturing Sector

The Canadian manufacturing sector constitutes 17.8 percent of the total value of production. Of the $727.5 billion of the GDP (at factor cost) in 1998, only $128 billion was related to the manufacturing sector. Within the manufacturing sector, the largest sub-division in 1998, according to the North American Industrial Classification System (NAICS), relates to the transportation equipment industries (with $22.3 billion in constant 1992 prices). This subdivision, and the electrical and electronic products industries ($10.9 billion), are mostly established through foreign direct investment for the production of durable consumer goods for the

Canadian market and exports. The food industries (with $14.5 billion) formed the second largest subdivision, followed by the resource-based industries of chemical and chemical products industries (with $10.8 billion).

Categorizing manufacturing industries on the basis of the major factors influencing investment decisions provides a clearer profile of the country's manufacturing structure. It is particularly useful to grouping manufacturing industries into four categories - LI, labour intensive industries (food, textile, clothing, leather, etc.), MI, machine intensive industries (fabricated metals, transport...), NRI, natural resource-based industries (plastics, wood, paper, primary metal...), and TI, technology-intensive industries (electronics, precision machines...).[1] Based on this classification NRI industries form the largest category of Canadian manufacturing, with $41 billion (or 32 percent) of the overall manufacturing sector, followed by MI industries, with $35.4 billion (or 27.6 percent), and LI industries with $30.4 billion, (23.7 percent). The TI industries form the smallest group in the manufacturing sector with $18 billion (or 14 percent).

This profile highlights Canada's continuing staples roots and its slow development into a post-staples political economy. A closer look at this profile, however, suggests that there are reasons to be concerned that a shift in Canada's trajectory will be difficult to achieve without an activist industrial policy.

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1 This is a classification used by MITI and Japanese Statistics Bureau, and adapted by Charles J. McMillan (1984). Here, with some modification, we have grouped different divisions and sub-divisions of NAICS under the four categories. We have classified the 57 sub-divisions of industries into the four groups on the basis of the predominant factor in each sub-division. For example, industries such as food, textile, and footwear are classified under labour-intensive; industries such as wood products, pulp and paper, chemicals, petroleum, rubber and plastics, and iron and steels, and non-ferrous metals, are classified under natural resource-intensive; industries such as metal products, agricultural machinery, shipbuilding, railroad and motor vehicles, under machinery- or scale intensive; and industries such as engines and turbines, electrical machinery, computing machinery, and aircraft under technology-intensive industries. Each of these has the other factors, for example, textile has technology intensive aspects, and aircraft has labour-intensive operations. The data are calculated from OECD (1995, pp. 28, 127 and 228), based on each un-deflated national currency.

FDI and Canadian Industry

FDI has historically been a dominant factor in Canadian economic history. With the increasing role of multinationals in the international economy,[2] Canada continues to be greatly affected by the patterns of foreign MNC investment. Although Canada itself has significant involvement in international investment, compared to other G7 countries, it has the lowest position. Outside the G7, it has less involvement than smaller countries such as the Netherlands and Switzerland (UNCTAD 1997). In 1980, the outward stock of Canadian FDI was over $22.5 billion, less than half of the inward stock of over $54.1 billion. By 1996, the difference between the inward and outward stock had declined, with $111.2 billion outward stock and $129.1 billion inward stock. While outward FDI has increased, the outflow of capital continues to lag behind the inflow of inward FDI.

Canada has the highest level of foreign ownership in the developed world, a fact which has always been a major issue and a source of social conflict and political tension. Earlier efforts to deal with FDI led to the creation of the Foreign Investment Review Agency (FIRA) in 1973 (Canada 1972; Rugman 1977). The Mulroney Conservative Government dismantled FIRA and created Investment Canada in 1986. The removal of obstacles and reviews, along with the signing of the North American Free Trade Agreement (NAFTA), had an immediate impact on levels of FDI and foreign ownership in Canada. At the time of the negotiation of the Canada-US free-trade agreement in 1988, foreign-owned companies accounted for 26.9% of Canadian manufacturing capacity. By 1997 this figure had risen to 31.5%. The largest share is that of US, followed by

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2 At the present stage of globalization, international production (the value of goods and services produced by foreign affiliates) now outweighs global exports. There are 37,100 parent companies in advanced industrial societies plus 7,900 firms from developing countries, that combined together have about 280,000 foreign affiliates. In 1995, these foreign affiliates had an estimated $7 trillion sales. But for the developing countries exports remain the dominant driving force of globalization. The 100 top MNCs own about $2 trillion in their foreign affiliates, and employ 6 million people. The US, EU, and Japan together are home to 87% of the top 100 MNCs, and account for 88% of their foreign assets. (UNCTAD 1997 pp. xv, xvi.)

the EU. US companies own 6,819 companies in Canada or 53.6% (*Globe and Mail*, 1999).

The highest level of ownership is in chemicals and chemical products and textiles (over 60%), transportation equipment (over 55%), and electrical and electronic products (over 55%). However, many of these investments do not involve capital transfers. Broadly speaking, FDI occurs in three forms: actual capital inflow for new projects; branch-plant re-investment of part of earnings; and acquisitions and mergers (A&Ms) of existing industries. FDI in Canada is usually accompanied through the second and third approaches. A&Ms, in most cases, do not add to capital formation, nor bring new technology to the country but rather take over already existing establishments.

Deregulation of capital flows under the Mulroney Government led A&Ms to increase substantially, totaling $23.7 billion in 1988, but coming close to $40 billion in 1989 (Campbell 1992; Norcliffe 1996). Through A&Ms Canada's technologically innovative companies have been the targets of mostly American competitors. Earlier cases include Connaught Laboratories, Leigh Instruments, Lumonics, and Mitel. More recent examples include the acquisition of the famous Bauer Inc hockey and sports equipment manufacturer, and its parent company Canstar, by the giant Nike Inc. the acquisition of Spar Aerospace Ltd. by MacDonald Dettwiler, the Richmond, B.C.-based space company, a subsidiary of U.S.-based Orbital Sciences Corp; BCE's sale of 20% of its wholly-owned subsidiary, Bell Canada to the US; and the Washington-based Weyerhaeuser takeover of the British Columbia-based MacMillan Bloedel (*Globe and Mail* February, 1, 1999; March, 20; June 22, 1999). Through these processes, Canada is "transferring indigenous technology to foreign competitors that have no strategic interest in maintaining a significant Canadian presence" (Macpherson 1996). The sale of Spar Aerospace, the company that developed the so-called "Canada-arm" for the U.S. space shuttle program, is an especially notable example, particularly because of its symbolic significance for the Canadian science and technology community.

The Structure of Foreign Trade

Canada continues, more or less, the same pattern of foreign trade it has had over the past few centuries. The traditional features of Canadian international trade have been its reliance on staples exports, and overwhelming reliance on a single foreign market – in the past, Britain, and now the United States. As discussed by successive generations of Canadian economic theorists, from W.A. Mackintosh and Harold Innis to Glen Williams and Mel Watkins, trade in primary-resource products – staples – has historically determined the pattern of economic and social development in Canada (Mackintosh, 1923; Innis 1930; Williams 1983; Watkins and Grant 1993). Of the total of over $323 billion exports, natural resource-based exports in 1998, such as agricultural and fishing products, crude petroleum, natural gas, lumber and paper, metals and chemicals, accounted for over $141 billion, or over 43 percent of all Canadian merchandise exports (*Statscan Cansim Matrix 3685*).

The more modern features of Canadian foreign trade reflect the characteristics of the manufacturing sector as well as some of its weaknesses. Exports of automotive products, comprising over $79 billion (or 24.5 percent of all merchandise exports), formed the second largest category of exports in 1998. This was followed by machinery and equipment, including industrial and agricultural machinery, aircraft and other transportation equipment, and office machines and equipment, with over $78 billion, (or 24.3 percent of all merchandise exports). Both of these groups of merchandise exports are directly or indirectly linked to foreign direct investments in the Canadian manufacturing sector. Moreover, a significant portion of the export of finished goods is heavily reliant on imported materials, parts, components, and technology. Imports of machinery and equipment in 1998 reached over $101 billion, and imports of automotive products, including motor vehicle parts and chassis, reached over $66 billion (*Statscan Cansim Matrix 3651*). The auto sector is responsible for much of Canadian manufacturing trade in goods and, because of its integration and heavy reliance on foreign owners, is increasingly responsible for much of Canadian imports. Statistics Canada figures show that much of the rise of Canadian imports at the end of 1998 was due to the imports of automotive goods (mainly parts) (*Statscan Cansim Matrix 3685*).

If we consider non-merchandise trade, in which Canada has a sizable trade deficit, a significant part of Canadian auto and some other merchandise exports is offset. One major element of this invisible trade is business services, such as payments to foreign head offices for administrative services, for patent rights, and R&D performed by other affiliates of MNCs operating in Canada. The other major element is investment income, related to payments to non-residents for their investment in Canada. Canada's current account deficit reached $18.4 billion in 1998. According to Statistics Canada, the deficit was "mainly due to a rise in earnings of non-resident companies from Canadian firms and to a smaller surplus on trade in goods, as imports rose more than exports" in the last quarter of 1998. In the same period the deficit on investment income widened and reached $8.5 billion "driven by profits in Canada earned by foreign direct investors". In 1998, the total payments in international transactions for commercial services, including items such as royalties and license fees, computer and information services, and communication services reached $23.7 billions (Statistics Canada 1998).

Another striking feature of Canadian international trade is its heavy and increasing reliance on a single trading partner, the USA. In 1998 Canadian merchandise exports to the United States surpassed $270 billion, or 83.6 percent of all Canadian exports. In terms of imports, Canada imported over $234 billions (77 percent of all imports) from the USA. Canada's trade with other countries, including the European Union and Japan, for the most of 1990's remained very low, with about 5 percent of exports going to all the countries of the EU and about 3 percent to Japan (*Statscan Cansim matrix 3651 and 3685*). Strong and growing reliance on US trade has not only limited Canada's trade relations with other parts of the world, but has also seriously affected internal inter-provincial trade.[3]

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3 Before joining NAFTA, and up until early 1990s, despite heavy reliance on US trade, inter-provincial trade on the east-west axis was much higher than was north-south trade. In the latter part of the 1990s, all Canadian provinces – with the exceptions of Nova Scotia and Prince Edward Island – trade more with the US and internationally than they do inter-provincially (Globe and Mail, Thursday, June 24, 1999).

NAFTA: Institutional Lock-In of a Political Economic Trajectory

These characteristic features of the Canadian manufacturing sector, patterns of foreign ownership and control, and the structure of foreign trade, have determined Canada's position within the North American Free Trade Agreement. Signed in the early 1990s as a successor to the late 1980's Canadian-American Free Trade Agreement (CAFTA), NAFTA has institutionalized a tariff free system of trade between Canada, the U.S. and Mexico which has served to further perpetuate the mature staples orientation of the Canadian political economy (Weintraub 1998; Mansfield and Milner 1999).

In all major economic blocs, EU, NAFTA, and the informal bloc in South East Asia, a division of labour has developed. In each bloc, there are high-tech/high-wage, mid-tech/mid-wage, and low-tech/low-wage regions. Accordingly, there are science leaders, capital leaders, resource leaders, and labour leaders. North America is probably the best example of this, although East Asia is not all that far behind. In Europe the factors are spread more evenly, although large gaps between southern and northern regions prevail (Alic 1998; Ravenhill 1998).

From the point of view of business interests and economic rationality, which do not always coincide with national interests, operation of all categories of industry are more efficient within a bloc (Gamble and Payne 1996; Hurrell 1995). As an OECD report suggests, trade in resource-based and labour-intensive industries brings the allocation of resources within countries more closely in line with the international pattern of factor endowments. Trade in machine-intensive or scale-intensive products allows firms to increase plant size and lengthen production runs, thus reducing costs. It also allows the production of differentiated goods and increased variety, thus benefiting consumers without sacrificing the advantages of large-scale production. Finally, trade in science-based and high-tech industries spreads the high fixed costs of R&D over a large market, while ensuring the rapid diffusion of new products (OECD 1992). But from the point of view of national interests, considerations other than pure economic efficiency – such as employment, social services, ecological sustainability and regional

development – are also involved and may be jeopardized by institutional lock-in of a political economic trajectory.

Within a bloc these economic and social factors will not necessarily be balanced. In the case of NAFTA, in the four categories of industries - the technology-based and high-tech, natural resource-based, labour intensive, and machine-intensive – the US is the unquestionable leader in science, technology and high-tech, while Mexico is the unquestionable leader in labour. Canada is strong only in resource-based industries (Niosi 1998; Ramirez and Unger 1998). Although US manufacturing, because of its unparalleled diversity, is strong in all the four categories of industries, the production (total gross output) of its technology-based industries is especially significant, reaching over US$ 603 billion in 1994. The gross output of Canadian technology-intensive industries was only C$ 42.6 billion, or just seven percent of the US technology-intensive industries.

Within the NAFTA regime technology-based and high-tech industries tend to be attracted to US manufacturing sites, or to go under the ownership and control of the US-based firms through A&Ms. The case of labour-intensive industries is more obvious. Because of cheaper and less- or non-unionized labour, Mexico and some US southern states are the natural candidates for labour-intensive industries, and other industries that are reliant on less-skilled and cheaper labour. The machinery-intensive industries, particularly the scale-intensive ones, tend to be land, energy and pollution-intensive, and hence to be attracted to countries that can continue to provide cheaper energy and less vigorous environmental policy. The natural resource-based industries, which are mostly tied to the land and have no mobility, grow (or decline) inside national boundaries (Weintraub 1998).

Impediments to Industrial Policy: Overcoming Path Dependency

In examining political economic change a central question is why trajectories change. A principal assumption concerning the general nature of political economic dynamics is that the propensity and possibility for

change is limited by the combined structural effects of policy legacies which create path dependencies (Rose 1990; Weir 1992; Pierson 2000). In the case of specific technologies and national governments, authors such as W. Brian Arthurs and Douglass North have outlined the processes by which countries and industries develop particular trajectories which, once "locked-in", are difficult to alter (Arthur 1989; North 1997).[4] Policy legacies affect current policy-making due to factors such as sunk costs, institutional routines and procedures which can force decision-making in particular directions - either by eliminating or distorting the range of options available to governments (Wilsford 1994; Rona-Tas 1998).

This analysis does not rule out the possibility of significant political economic change, but focuses attention on the means and mechanisms by which "lock-in" occurs and the methods and activities which can un-lock an established institutional order. As authors such as Sabatier, Heclo and Wilsford have argued, stable regimes are most likely to change when faced with exogenous shocks which alter the configuration of actors, ideas and interests they contain. (Wilsford 1985; Heclo 1994 and 1976; Sabatier 1987, 1993 and 1988). In the case of political economic regimes, one such shock is the opening up of previously protected economies to international competition (Held 1999; Hirst and Thompson 1992). Another is the development of new technologies which can undermine an industrial structure based on an older technological paradigm and render it susceptible to new de-stabilizing competitive pressures (Niosi 1994; Nelson 1993). In both cases, governments can either lead or react to changes, and can alter previous path dependencies and the nature of political economic relationships.

Canada is in the midst of such a transition, as Canadian governments have broken with past policies in implementing freer trade relations with the U.S. in reaction to changing international and technological conditions. However, in this new situation Canada is in a disadvantageous position *vis-à-vis* the US. Its position in developing the technology-based industries required for a successful transition to a post-staples regime will decline if there is no comprehensive policy in place to

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4 For a competing view which challenges the notion of a sub-optimal lock-in, see Liebowitz and Margolis (1995).

support the development of these post-staples industries (Industry Canada 1999).

Machine-intensive and labour-intensive industries, for example, suffer from the (non) policy of free trade. Under the NAFTA regime there is a growing tendency for these industries to move south, particularly to Mexico, which has lower environmental and labour standards and costs, or for the Canadian environmental and labour standards to decline in order to make these industries more "competitive" within NAFTA territory. A decline in employment in these sectors, as a result of the movement of manufacturing sites to cheaper and less regulated areas, and the continued push for efficiency and capital intensity, has important effects on Canadian society. Structural changes and shifts from one sector to another are not new. In most developed countries, the general shift from agricultural to manufacturing activity involved deeper and more profound structural changes (Kuznets 1966).

But these developments were offset by the ability of labour-intensive manufacturing sector to absorb the mass of labour displaced from agricultural activities. The earlier phases of transitions from manufacturing to services also had similar effects (Singelmann 1978). However, the services sector in Canada, whose share in the economy is comparatively among the largest in the world, will not be able to smoothly absorb the labour force released from the manufacturing sector (Osberg, Wein and Grude 1995).

Support for the technology-intensive industries is thus critical. While many types of overt support for this sector (such as specific subsidies or tariffs) are prohibited by international trade treaties such as NAFTA, the GATT and WTO, these industries are heavily reliant on an (invisible) infrastructure that, through network linkages, create the conditions for their sustainable growth (Castells 1996; Kash and Rycroft 2000; Orsenigo, Pammoli and Riccaboni 2001).

Advanced Manufacturing Technologies (AMTs) are a case in point. AMTs are industrial hardware and software technologies embodied in features such as machine tools, computer-controlled machinery, systems integrators, machine vision systems, robotics, and automated production and processing systems. They are key for the efficient production of high

quality products in different industry sectors. According to Industry Canada, the federal government industry ministry, there are approximately 500 AMT providers in Canada. These are mostly small- and medium-sized firms, employing some 16,000 people, including many skilled workers and professionals. Over 70 percent of what they produce is destined for export. Of the $2.7 billion shipments in 1994, for example $1.9 billion was exported, of which $1.4 billion was exported to the US.

These industries are highly dependent on export markets because of the lack of integration and sufficiency of the national market. Industry Canada recognizes that "Canadian AMT strengths not generally well-known or broadcast ..[and].. they lack resources required for extensive market intelligence or for easily taking advantage of foreign business opportunities." They also face difficulties in accessing sources of capital for R&D and for expansion. The result is that they cannot compete with their major international competitors, particularly the US, Japanese and German AMT providers. This is a serious problem as, without more active government assistance in such technology-based industries, Canada will remain locked into a political economic trajectory based on continued large-scale resource exports which are unsustainable in the long term (Janicke, Monch and Binder 1993; Janicke *et al* 1989).

Industrial policy, a forbidden and forgotten term in North America after the 1980s, is at the core of industrial decision-making for most of North America's competitors in Europe and Japan. While all these countries are 'market economies', the state has historically played a major role in directing the national economy, a major instrument of which, in addition to fiscal and monetary policies, has been industrial policy. Through industrial policy the European and Japanese governments have been supporting strategic and sunrise industries, while at the same time helping the gradual phasing-out of the sunset industries.

Canadian governments at different points in the past have attempted to play a more significant role in directing the future of Canadian industry. Apart from FIRA (1974) and the AutoPact (1966), without which the Canadian industrial and export profiles would have been much different, there were other attempts. For example, in 1981 the Industry, Trade and Commerce Ministry, tried seriously to develop a technology-based

industrial export policy, but failed due to the high interest rates and fiscal instabilities of the day (Williams 1983).

With the Canada/US FTA in 1987, and the subsequent signing of NAFTA in 1992, the Canadian government's role in directing industrial development diminished. This policy continued even after the defeat of the Conservatives and the coming to power of the Liberals in 1993. The Federal government initiated several science and business programs in the late 1990s, such as the Canadian Foundation for Innovation, Technology Partnership Program, and Industrial Research Assistance Program. Industry Canada and Investment Canada provide significant guidance and information about all divisions of industry, yet the government role in industrial policy making continues to subside in the wake of moves towards freer trade.

Considering the structure of Canadian industry and its weaknesses in the changing global situation, the Canadian government needs to make a conscious effort towards changing the existing industrial profile and trajectory of the country in a post-staples direction. It is essential to develop a broader domestic industrial development strategy and increase vertical and horizontal integration at the national level, rather than merely promoting exports (Norcliffe 1996; Cohen 1990). Without such integration the small or medium innovating industries in Canada will be increasingly reliant on US markets, and will continue to be vulnerable to the fluctuations of that market. This is particularly the case as they will typically be producers of parts and components rather than of finished, high value-added products. Lack of such a strategy will lead to the continual gradual transfer of knowledge-based industries to the US. and the perpetuation of a declining mature staples economy rather than an active post-staples one.

National development in the latest phase of globalization, particularly for countries like Canada with high degrees of international involvement, is very much influenced by global problems. Global issues need global responses. Yet many global solutions must begin at the national level; and the creation of an industrial policy promoting a balanced post-staples political economy is one such effort. Governments require the support and encouragement of citizens, working through the democratic institutions of civil society to exert pressure for changes in this direction.

Almost none of the trade unions and political parties of diverse persuasions have such a vision at present. Nevertheless, the deteriorating situation in which citizens in countries like Canada find themselves is likely to drag them in this direction.

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