

Which link, in which chain? Inserting Durban into global automotive supply chains

Peter V Hall and Glen Robbins

Working Paper No 46

2006

ISBN : 1-86840-607-5

Peter Hall pvhall@fes.uwaterloo.ca is an assistant professor in the Department of Geography at the University of Waterloo, where he also is Director of the Local Economic Development Program. His research addresses the economic development role of seaports, airports, and other public institutions, as well as employment and local wage policies. Before commencing his doctoral studies at the University of California at Berkeley, he worked in the Economic Development Unit of the Durban Metropolitan Council.

Glen Robbins robbsing@ukzn.ac.za is a part-time Research Fellow at the School of Development Studies, University of KwaZulu-Natal (Durban), and is a graduate of the Institute of Development Studies at the University of Sussex. He also works as a consultant specializing in regional and local economic development with a focus on city strategies, infrastructure planning and financing and industrial policy. Until recently he headed up the Economic Development and City Enterprises functions in the eThekweni Municipality (Durban).

INTRODUCTION

In the closing sentence of his call for a new paradigm in port studies, Robinson issues the following challenge: “the role of ports and the way in which ports position themselves in the new business environments beyond 2001 must be defined within a paradigm of ports as elements in value-driven chain systems, not simply as places with particular, if complex, functions” (2002: 252). Recent research on the maritime shipping industry has focused upon the emergence of more integrated logistics chains, both within the maritime industry itself and between maritime- and land-based transportation modes (Slack et al, 2002; Notteboom, 2002). Greater integration of logistics chains raises difficult questions for ports and port-cities seeking to secure or maintain dominant positions within global trade flows (Notteboom & Winklemans, 2001; Heaver et al, 2001). The attention to integration along logistics chains parallels and indeed draws upon the wider literature on global commodity chains (Gereffi, 1994; Gereffi et al, 2005) and supply chains (Cox et al, 2002).

The logistics chain perspective indicates that ports should seek to insert themselves as privileged nodes within particular logistics chains. While we do not disagree with this general policy conclusion, in this paper we show that the potential for conflict and uncertainty over goals, roles and actions with respect to supply chain insertion increases significantly when we rescale the analysis in two dimensions; namely, when move from the port to the port-city and the nation, and from the logistics to the whole supply chain. While recognising the close connections between them, for clarity we distinguish between logistics chains which deal with the distribution of goods in physical space, and value chains which deal with inter-firm relationships in economic space. We use the term supply chain to encompass both. However, with some exceptions, few attempts have been made to nest the analysis of logistics chains within the larger supply chains in which they are located. We argue that this analytical bracketing may potentially lead to incorrect policy advice.

Using a case study of the attempts since 1994 to insert Durban into global automotive supply chains, we trace the debate and conflict over what logistics functions to serve in which value chain. We show that this conflict results not only from the tensions within or between competing value and logistics chains, but also from the tensions between parallel local and national decision-making arenas. At the local level, port planning and day-to-day port management are not coordinated with city planning and

economic development functions (Hall & Robbins, 2002). At the national level, port policy is caught up in the privatisation and transformation of the national transport agency, while automotive sector policies reflect national industrial goals. This decision-making environment seriously complicates the goal of rapid agreement and alignment around supply chain insertion.

The paper consists of a short section which presents the conceptual framework and key concepts used in the paper, highlighting the policy challenges raised for ports and port-cities by introducing scale into the supply chain perspective. The bulk of the paper is devoted to the second section which contains the case study. Here we nest the analysis of automobile imports and exports moving through the port of Durban within the wider port-city and national development context. The paper concludes with a brief conclusion.

CONCEPTUAL FRAMEWORK: LOGISTIC, VALUE AND SUPPLY CHAINS IN SCALE

The goals of actors operating within supply chains, if not the precise strategies they may employ or the nature of the regimes governing specific chains, are relatively clear. First, actors seek to insert themselves into supply chains. Supply chains provide actors with access to technology, capital, supplies, expertise, and markets, and most importantly, to knowledge about these critical resources (Gereffi, 1994). For ports, the goal of logistic chain insertion has been pursued through improved landside connections, incentives, leases and concessions to attract more port callers, and port networking (see Heaver, 1995; Notteboom & Winklemans, 2001). National and local economies seek to insert themselves into what are, at least in the automobile sector, value chains that dominated by a decreasing number of global players (Sturgeon & Florida, 2000). With respect to the case study that follows, Morris et al wrote that “(i)f Toyota SA is to compete in the long term, it needs better access to Toyota Japan’s global networks, and it similarly needs to help facilitate significant export contracts for its domestic component suppliers” (2002: 125).

Second, actors seek appropriate integration within supply chains in order to reduce overall transactions costs and provide services more efficiently. This implies that actors, including ports, within a given supply chain should cooperate in order to out-compete other chains. This perspective is the *raison d’être* of supply chain management as a field of practice. Transaction costs

reasoning has been applied to explain vertical integration in the maritime sector (Panayides, 2002) and has informed much of the World Bank and UNCTAD work on port reform (Bichou and Gray, 2004). Another form of greater integration within supply chains is the upgrading of productive capacity through a variety of (often collective and local) learning, innovating and harmonising processes (Humphrey and Schmitz, 2002; Coe et al, 2004).

Third, however, while the heightened integration predicted by the transactions cost approach may be applicable to some parts of the logistics industry, it does not accurately account for the observed diversity in the governance of supply chains (Cox, et al, 2002; Gereffi et al, 2005). What the 'power perspective' highlights is that supply chain actors will also seek to secure advantage over each other by developing critical assets / supply chain capacities. This is because each actor in a supply chain is in some sense in competition with every other actor over the value that may be extracted from what are essentially uncompetitive economic systems (Cox et al 2002). Supply chains are thus inherently unstable, and subject to competition from within as well as from without. Hence, Robinson (2002) asks which critical assets a port must secure in order to enjoy some power when negotiating with steamship lines and other users of port services, while local (and national) economies seek benefits when bargaining with inward investors (Yeung & Li, 1999).

We summarise the three goals of actors with respect to supply chains as *insertion*, *integration* and *dominance*, recognising the tensions that exist between these goals as well as the competition between the actors. In order to understand how these goals play out in ports and the city-regions that host them, it seems to us that there are two further challenges. First, we need to re-scale the port, and second, we need to pay close attention to the nature of particular supply chains and the specific character of the actors which populate them.

By recognising that ports are elements in supply chains, we are implicitly recognising that they exist in relation to actors and processes that operate within, across and between multiple spatial scales. In this sense, the challenge facing us is the same challenge which economic globalisation presents to all contemporary spatial-economic analysis and policy (Dicken, 2003). Economic geographers may reduce such multi-scalar analyses to the tension between the local and the global scales (Lipietz, 1993), although the definition of the 'local' and the 'global' may vary from one context to another. For example, global trading regions and the sub-port terminal scale

intersect in Olivier and Slack's (forthcoming) argument that the global terminal operating firm is currently a prime agent of port change. Likewise, in studies more directly concerned with global production chains, Humphrey and Schmitz (2002) ask whether insertion into global value chains leads to upgrading of local industrial clusters, while Coe et al (2004) ask whether regional institutions allow favourable 'strategic coupling' between local firms and global production networks.

It is also important to recognise that we have been using the term supply chain to apply to what are in fact a diverse group of historically contingent and unique formations (Hall, 2004). As indicated above, we have reduced this diversity in supply chains to two ideal types; the logistic chain and the value chain. In part, we do this is because of the historic functional separation between production / manufacturing and distribution / transportation, although this is an epistemological divide that has been superceded by economic globalisation (Hall et al, forthcoming). The question for ports, and the city-regions that host them, is which chain or chains might they seek to insert themselves into, recognising that there may be trade-offs between different chains. For example, greater port throughput (in a logistics chain) need not necessarily translate into greater local economic activity (in a value chain); indeed, modern ports may impose negative externalities on their host cities without providing commensurate local employment and other economic benefits (Campbell, 1993).

The over-arching point is that recognising that ports are elements in global supply chains severely complicates the scalar and bounding dimensions of the analytical and policy task. To begin answering the question, which link in which chain, we propose an ideal-typical framework that cuts across three spatial scales (port, port-city and nation), and identifies various actors seeking to insert themselves into, integrate activities along, and secure dominance within two types of value chain (logistic and value chains). The framework is summarised in Table 1; we have included a series of examples of the strategies that might be employed with respect to each. The case study that follows will illustrate how a variety of actors acting at different scales have used these strategies to insert Durban into global automobile supply chains. We show that conflict results not only from the tensions within or between competing value and logistics chains, but particularly from the tensions between parallel local and national decision-making arenas.

Table 1: Typology of supply chain strategies at different scales, with examples

		Logistics chains	Value chains
Port (ie. on- or near-dock and terminal facility)	Insertion	Attract lines through concessions, leases	On- or near-dock value-added activity
	Integration	Improved on-dock information systems	Integrate on-dock with overall supply chain information systems
	Dominance	Specialised and dedicated terminal	Unique on- or near-dock processing facilities
Port-city (ie. immediate port hinterland)	Insertion	Local road connections	Export promotion
	Integration	Backhaul cooperation	Local cluster strategy
	Dominance	Transport industry cluster strategy	Develop immobile capacities
Nation (ie. beyond port-city)	Insertion	Long-distance (rail) service and infrastructure	Inward investment attraction
	Integration	Regional corridor strategies	National cluster strategy
	Dominance	Transshipment hub	Strategic trade policy

AUTOMOBILES AND DURBAN: A CASE STUDY

We use the conceptual framework to understand the dynamic relationship between the Port of Durban, city and national governments, and the automotive sector in the Durban region and elsewhere in South Africa. Three crucial features of the case study should be noted at the outset. First, the case is one of a port that enjoys an effective monopoly over the majority of containerised cargo movements through southern Africa. Second, the port forms part of a national parastatal organisation which remains relatively centralised despite the overall trend towards devolution in post-Apartheid South Africa. And third, the South African state at both national and local levels maintains a developmental stance with respect to the automotive industry.

The section begins with a brief introduction to the automobile sector in Durban and the development of the port in the City. This is then followed with a discussion of changes in the national economy with an emphasis on trends in the automotive sector. The case study then looks specifically at automotive logistics chain and value chain issues that have arisen in Durban in the past decade.

Background to the auto sector and the Port of Durban

The Port of Durban has been South Africa's premier maritime trade facility since relatively early in the twentieth century. However, it was through the country's post World War II industrialisation that the Port of Durban secured substantial and ongoing state investment, aimed initially at cultivating it as the primary port serving the country's economic mining and industrial heartland (in what is today the Gauteng Province). While South Africa's mining-dominated economy and state import-substitution related policies encouraged economic development in the interior of the country, the development of large-scale industrial districts in proximity to the Port of Durban did attract significant industrial investment to the coastal city. Whilst Durban had a limited presence in automobile components and assembly in this early post-war period, it was with substantial commitments in investments from the firm that was ultimately to become Toyota South Africa (during the late 1960s and early 1970s) that it could be said that Durban was developing a cluster of automotive production activities. These were almost entirely connected with production for the domestic market. In fact the license conditions under which Toyota South Africa (TSA) operated specifically excluded them from exporting other than to handful of very limited consumption markets in southern and eastern Africa.

By 1981, TSA had established its dominance in the domestic market as the primary producer of passenger and light commercial vehicles, dominance in total new vehicle sales and total production volume that it maintains to this day. Both Toyota's scale of output (in relative South African terms) and the considerable range in vehicle platforms that it produced further encouraged development of a component supplier base, primarily in Durban, but also in other regions of the country. However, despite the steady growth of localised components suppliers during the period of the 1970s and 1980s, TSA's growing production volumes remained very closely linked to its ability to import the bulk of its components through the nearby Port of Durban. These inputs supported Toyota's scale and range of production that was central to the company's ability to maintain its domestic dominance in a variety of product sub-markets.

What then were the logistic and value chain issues in this "pre-global" context? In the first instance the highly protected production environment, including various forms of transport and production subsidies, allowed for considerable protection for producers from the price, quality and delivery pressures that are *de rigueur* in today's globalised production and market environments. This orientation towards relatively uncompetitive domestic

markets reduced the attention paid to logistics and supply chain management within firms. For the most part, the transport infrastructure at the Port of Durban, provided sufficient capacity and acceptable service. Of course, the trend towards containerisation, and attendant increases in the size of vessels, was beginning to signal the need for new investment and new approaches to port management. Nevertheless, for much of this period there was limited pressure from port users and low responsiveness from port decision making structures with regard to performance. A similar lack of responsiveness in rail and falling performance standards led many businesses to shift long-haul land transport from rail to road (MSA, 1998).

The inward-looking, centralised orientation of the South African economy, especially under apartheid, exacerbated in Durban what might otherwise have been regarded as the normal tensions between port and city:

“(t)here has been little attempt at harmonisation of local and national interests, of city and port policy and practice. Indeed this has often resulted in direct conflict between the economic policy implementation plans of the city authorities and the views of the port authorities. It results in crucially absent institutional linkages between the port, city and local industrial sectors. This fundamental fault line governs and fractures the ability of the city to locate and take advantage of itself as a dynamic port city. The city is only half a port city, and the port only half related to the city” (Morris et al, 2002: 110).

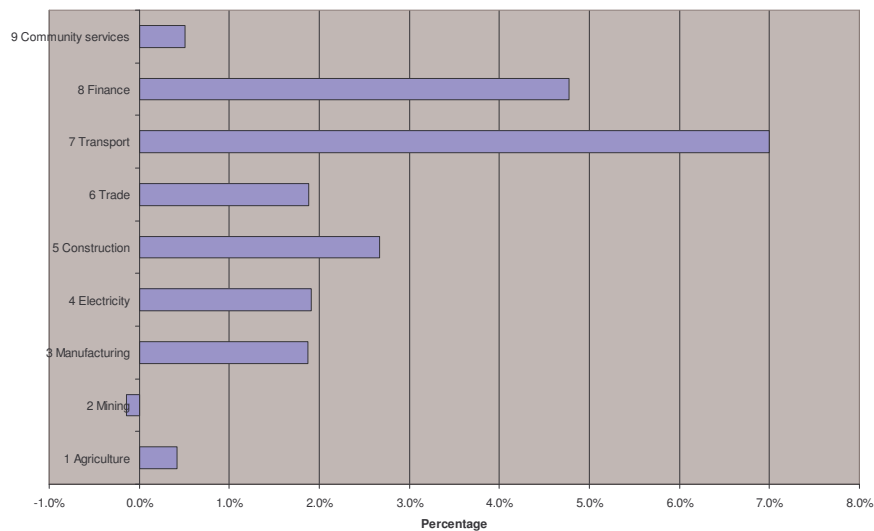
The combined effect of domestic recession during the late 1980s and the process of economic reform initiated by the Apartheid government in this period, in a desperate attempt at securing its survival, thrust South African businesses into an environment of rapidly escalating competition and reduced government protection. Even in sectors which were not directly affected by rapid tariff reductions, the extended domestic recession required that they seek opportunities in export markets. This soon led to a much greater appreciation, at least in the private sector, of the importance for firms of inserting themselves into, achieving integration efficiencies along, and securing dominance within global supply chains.

The context of national economic restructuring: 1994 and beyond

In the years since the ending of Apartheid, South Africa’s economic structure has undergone substantial change. Economic restructuring was encouraged by government through the adoption of an export oriented policy framework in the context of conservative macro-economic management –

presented in the Growth, Employment and Redistribution strategy (GEAR, 1996). Figure 1 illustrates that during the mid 1990s through to 2003, services-related sectors and those activities connected with transport showed the most rapid annual average growth in Gross Value Added. Conversely, the mining sector's contribution to Gross Value Added declined during this period. The growth performance of manufacturing, whilst positive was limited to less than two percent. In an important structural shift, the share of gross value added by the transportation sector increased from 9 percent to 12 percent in just 7 years.

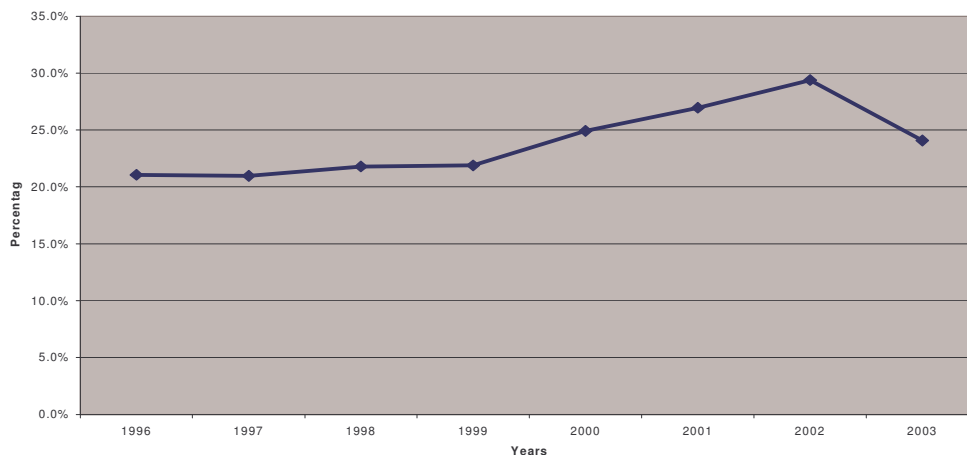
Figure 1: South African Gross Value Added (GVA) annual average growth, 1996-03



Source: Economic Development Unit, eThekweni Municipality, 2004.

South Africa's export performance is reflected in this restructuring process and there has been steady growth in the proportion of exports to Gross Domestic Product in the past decade (see Figure 2).

Figure 2: South African exports as a percentage of Gross Domestic Product (GDP)



In relation to export performance the main driver has been manufacturing (although exports of services are also beginning to be of some significance). The automotive sector in particular has been a key element of South Africa's export growth performance (Barnes et al, 2003).

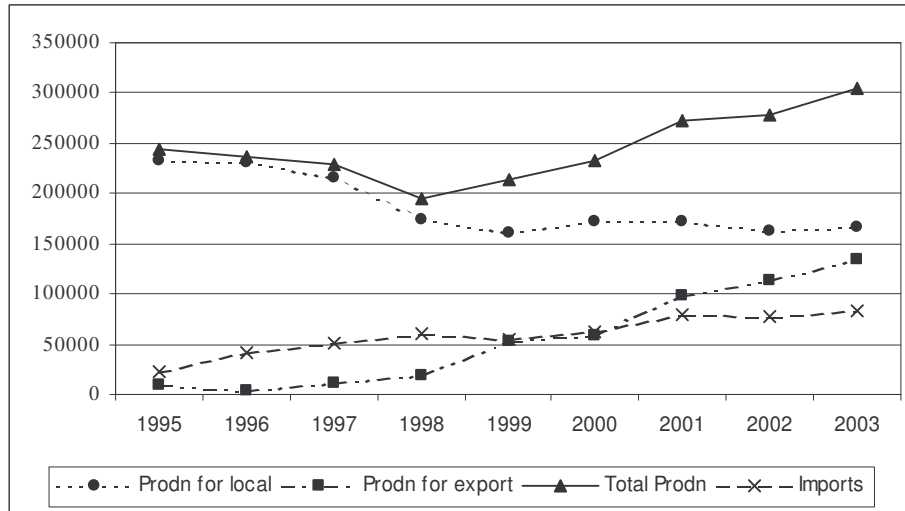
South Africa's economic restructuring process in the early 1990s was heavily influenced by dominant global policy trends at the time, often referred to as the Washington Consensus. Countries of the developing world were encouraged to withdraw state interventions in terms of subsidies, tariffs and exchange controls in exchange for open trade and reciprocal access to the European and North American markets. The automotive sector in South Africa was not immune to these changes. In fact, "duty levels on completely built up vehicles (CBUs) fell from 115 per cent in 1995 to 40 per cent in 2002 and are scheduled to reach 25 per cent by 2012. Tariffs on completely knocked down (CKD) components are lower still" (Lorentzen et al, 2004: 7). However, despite the commitment to trade liberalisation there was also a commitment by the Department of Trade and Industry to avoid potential pitfalls of de-industrialisation from rapid tariff adjustments (Barnes et al, 2003). One of the manifestations of that commitment was the Motor Industry Development Programme (MIDP), formulated by the government together with key industry role players and launched in 1995. The MIDP is planned to expire in 2012, although it may end in 2010 depending on trade agreements.

The MIDP sought to encourage consolidation of domestic production around the output of a reduced range of vehicles (for each Own Equipment Manufacturer or OEM), thus allowing firms to harness export-level economies of scale in production. Through exporting these vehicles the OEMs would then be entitled to earn duty credits to import a considerably greater range of models from production sites in other parts of the globe. In other words, domestic assemblers were encouraged to insert into global supply chains.

These policy adjustments were deemed favourable by the OEMs and they began, one-by-one, to take advantage of the opportunity to build South Africa into their global operations. According to Barnes *et al* (2003), the automobile sector grew rapidly between 1994 and 2002, doubling its export to output ratio and accounting for an increasing share of output value, gross value added and manufacturing employment. As a result of the combined effects of the MIDP and the depreciation of the Rand, the share of the

automobile sector of total manufacturing sales grew from 9.7 percent in 1994 to 12.8 percent in 2003.” (Lorentzen et al, 2004: 8) Growth in automobile sector exports and imports was accompanied by rapid growth in automobile logistics. While vehicle production overall increased after 1998, production for the domestic market has continued to fall: a greater portion of local demand is being met by imports, at the same time that exports have grown (see Figure 3).

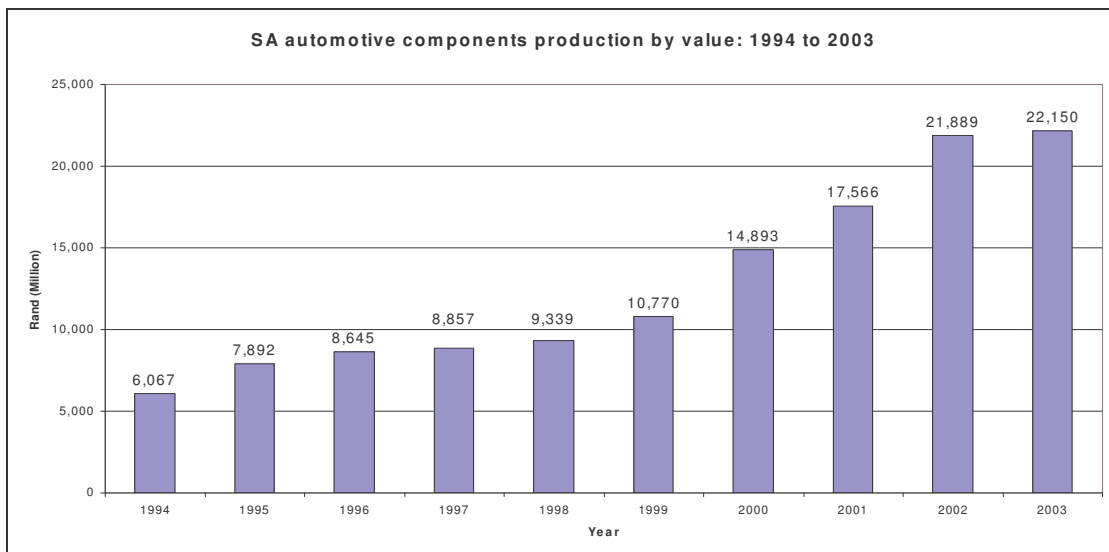
Figure 3: SA passenger vehicle production, exports and imports



Source: Reproduced from Barnes J, Kaplinksy R and Morris, 2003: p 9 – originally from NAAMSA.

As intended by the designers of the MIDP, the growth trend in vehicle production, imports and exports, also carried through into components production as can be seen in Figure 4.

Figure 4: SA Automotive component output by value



One notable early MIDP beneficiary was VWSA, which had been exporting Jetta's to China since 1991, but perhaps the most prominent MIDP success was BMW, the German luxury-car manufacturer. BMW were first assembled in South Africa from CKD 'kits' from 1968; in 1973 BMW South Africa established the first BMW assembly plant outside Germany in Rosslyn, north-west of Pretoria. In 1994, the first exports were sent to Australia, and in 1996, with a R1bn investment, the plant became "BMW World Plant, Rosslyn", an integrated part of the global production system. In 1999, a new vehicle distribution center opened at the plant, and in 2002, approximately 80 percent of output was being exported. Whilst both VW and Daimler-Chrysler export through Eastern Cape ports, the Port of Durban focuses on serving a role as the main import channel and the primary export channel for BMW and Toyota. Ford also now exports the Focus to Europe through Durban.

The Durban automotive sector

The automotive sector in the greater Durban region was heavily influenced by these changes. Local component producers did enjoy some growth in demand for output from domestic OEMs, and in some cases orders to supply into global production operations. While these benefits were significant, the largest single buyer of components produced in Durban – Toyota – at first did not seek to participate in the MIDP. Instead Toyota purchased export credits from components producers and in turn used these to increase its imports of a greater range of vehicles for sale on the domestic market. However, for much of the period under consideration, domestic demand remained very flat, and Toyota found that importing competitors were cutting into its historic premium in South African small and mid-range passenger car markets.

Hence, by 2000 Toyota South Africa (TSA) had announced that a majority of the local business had been acquired by Toyota Manufacturing Corporation of Japan (TMC) and that the Durban plant would begin to feature in Toyota's global production system.¹ This insertion of the local Toyota operation in the firms' global supply chain – achieved by adjusting the licensing and ownership arrangements - was accompanied by a series of actions to integrate, secure and upgrade both value and logistics chains. To take full advantage of the MIDP restructuring, TSA had to export. To export they had to renegotiate license agreements with TMC of Japan.² In turn,

TMC chose to increase its shareholding in TSA and invest in new assembly lines, all geared towards export.

In preparation for these changes, TSA made it clear to various levels of government that TMC required certain policy signals to convince it to move beyond adjusting the license agreement and taking ownership, into actually investing. First, national-level endorsement was required; this came in the form of a series of Japanese and South African government ministerial exchanges and visits from 1998 to 2000. Second, a commitment from local government to be responsive to local infrastructure and land acquisition requests; this came in the form of direct contact with the executive of the metropolitan government, expedited planning and building approval for a catalytic converter plant, a private road/bridge link to the rail head in Prospecton, and better signage and street lighting. Third, TSA indicated that they needed a plan for resolving delays in container handling in the port, and more information about plans for the newly opened automobile terminal. For both of these, the firm looked to the city government to put pressure on the public port authority.

TSA and TMC also began working together to integrate the supply chain by improving quality and delivery standards on all sorts of levels – in plant design, in the feasibility study for the catalytic converter plant (which opened in 2000 as the majority TMC-owned Catalyer), and in background work with component suppliers. The work with suppliers was helped significantly by the formation by local components firms of the Benchmarking Club, and subsequently, the Durban Auto Cluster. This initiative was the result of proactive intervention by local actors, including suppliers, the local university, and municipal government (see Lorentzen et al, 2004; and Morris and Robbins, 2004).

In 1997, in response to the slowdown in the South African economy and in anticipation of further rationalisation at Toyota, local suppliers began working together to improve their competitiveness and use their collective expertise to deal with various challenges relating to skills, logistics and supplier development. In 1998 they formed a Benchmarking Club, with financial support from the Department of Trade and Industry³, British government (ODA/DFID), and in 1999, from the Durban Metropolitan Council. Between 1998 and 2001, firms participating in the processes around the cluster and related benchmarking activities saw average improvements in the inventory days of 32.8 percent, of the lead times by 9.9

percent and an average improvement in reducing customer return rates by 62 percent (Barnes et al, 2003: p 11).⁴

In 1999, in response to additional pressure from Toyota to further upgrade the supply chain and recognising that the existing membership (of just 12 first-tier suppliers) was too limited, the Club initiated a study to determine whether there was wider interest in a collaborative upgrading effort, without tampering with the existing benchmarking exercise. Durban city government sponsored a workshop in 2000 to present results of study, where it was revealed that a number of firms in Durban and other parts of KwaZulu-Natal province were eager to be part of such a process. In December 2000, the Durban Auto Cluster was launched, with layers of membership arrangements with varying membership fees. The City sponsored a handful of irregular / peripheral / family-owned suppliers, since membership fees were substantial. At formation, the Durban Auto Cluster adopted four programs: to the Benchmarking Club for highest level members was added a supplier development working group, a human resource development group, and a logistics working group. Later, a specific program for black-owned peripheral firms was added.

The agenda of the logistics working group revolved around both maritime and landside issues. The landside concerns are an example of logistics chain integration, and entailed greater coordination between Toyota and the suppliers on road haulage for parts delivery. Toyota was sending trucks to Port Elizabeth to collect parts, while Durban-based suppliers were sending parts to Eastern Cape OEMs (VW and Mercedes). Collaboration resulted in significant back-haul cost savings.

On the maritime side, while some concerns did revolve around eliminating inefficiencies through greater logistics chain integration, they also concerned the uncompetitive local port services industry; in other words, they also revolved around issues of logistics chain dominance. Both Toyota and its suppliers felt they were getting poor service and highly variable pricing. The logistics working group put some collective pressure on the South African Revenue Service (customs), and local clearing and forwarding agents to simplify documentation and make transactions cheaper. However, many smaller shippers also felt that they were paying a premium on containers, and so they established a consortium (shippers association) to improve prices for small shippers. The group negotiated improved and consistent rates, in turn, for the European, North American, Asian, and Latin American routes. Finally, the group tried, without much success to pressure the port

management to improve container terminal operations overall in terms of productivity, lost boxes, damage, delays, and so on.

The group was supported by lots of media attention on the port's problems, and even succeeded in having City government pass a resolution in 2000 calling on the port to improve its operations, and to work with city. This pressure did not result in much improvement.

Auto shipments and the Port of Durban

It would be unfair to blame local port operations management for all the problems at the Port of Durban during this period. The parastatal corporation managing all South African ports, Portnet, was being split into the National Ports Authority (NPA, the landlord, and portside and maritime services provider) and the South African Port Operations (SAPO, the terminal operator) units. However, growth in container volumes through the late 1990s in excess of 10 percent per year soon exposed inadequate investment plans and weak management at the Port. Delays in loading and offloading containers were aggravated by landside congestion problems and the service shortcomings in the rail network operated by Spoornet. In some cases this resulted in very public disagreements between the main parties, in particular over the handling delays at the main container terminal.

The late 1990s witnessed a number of short-term investment projects by Portnet and its successors, the NPA and SAPO. These mainly involved the expansion of handling facilities at the main container terminal to increase capacity to just over one million TEUs, and the construction of a dedicated car terminal. The latter resulted from interactions between major vehicle importers, Pretoria-based BMW, the Department of Trade and Industry and the National Port Authority. The terminal which opened in 1998 with 3 500 bays, was initially designed to handle 90 000 units annually (Arkin, 2005: 56). It was deemed feasible based on projections of growing imports and further supported by BMW plans to export the 3-series car to north America, Australasia, Europe and Japan (Barnes et al, 2003: p 8).

The new automobile terminal in Durban reflected the ability of BMW, a shipper with its main production activities located outside the port-city, to secure preferential access to port planning and investment. As one of the first automobile firms to explicitly adopt the MIDP, BMW had cultivated close ties with the national government and was able to secure substantial cabinet-level support. In many ways, the BMW expansions, including the Durban auto port, became symbolic of the newly invigorated

‘developmental’ state.⁵ Apparently the automobile terminal was funded without explicit approval from the Portnet Board.

The planning, location, design and scale of the initial automobile terminal reflected BMWs needs, but certainly not those of the soon to be exporting Durban-based Toyota. The decision to build the automobile terminal was taken at exactly the same time as two joint port-city planning processes were under way. The Port-City forum, begun erratically in 1997, and this was followed by the associated South Industrial Basin⁶ (SIB) planning process which was actively developing a grander vision for an automotive logistics park with supply chain value adding activities (ie. customisation, accessorisation and associated space for parts suppliers). The SIB process was funded in part by the national government Department of Trade and Industry, yet Portnet bypassed this process to go ahead with the new automobile terminal. The case for locating an auto terminal at the SIB end of the port is strong, since the SIB accounts for 29.2 percent of all the automotive components employment in the Province of KwaZulu-Natal, and half of all the firms with turnover of more than R300m per annum (Barnes and Johnson, 2004).

Instead Portnet chose for the automobile terminal a location on the northern side of the port, adjacent to the Central Business District. Cars for export from Toyota have to go to far side of port, through downtown and on public roads, facing insurance concerns, congestion and delays. While the terminal is served by rail, this involves shunting from the rail head adjacent to the SIB. Yet BMW is the only auto terminal shipper that makes use of rail (Arikin, 2004: 57). Finally, the auto terminal soon ran into capacity constraints, necessitating some very expensive additional investments. These involved doubling the number of parking spaces to 7 000 by building a multi-storey parking garage, and the building of a dedicated bridge over the rail lines. These were completed in 2004.

Notwithstanding these problems with the planning of Durban’s car terminal, it has witnessed an increase in unit throughput from just over 40,000 units in 1998 to over 200,000 units in 2004 (or by 79 percent in seven short years; see Table 2). Today, there are over 20 car carrier calls per month, with all major global car carrier lines calling (Hall&Olivier, 2005); HUAL calls most frequently, but the terminal is also visited by WWL/Eukor, NYK, MOL and K-Line. In general it appears that there has been satisfaction with the performance of the facility (Arkin, 2005) although there remains considerable uncertainty as to the way forward in terms of expansion to meet

future demand. Land use and congestion-based conflicts between downtown business interests and local government, and the port, remain unresolved.

Table 2: Durban Car Terminal Through Traffic

Year	Imports	Exports	Total
1998	37,076	5227	42303
1999	31,797	6904	38701
2000	60,621	19666	80287
2001	66,394	41800	108194
2002	68,371	48723	117094
2003	83,880	53477	139189
2004	152,580	46193	201827

Source: SAPO, via Arkin (2004).

Toyota and the future of auto operations in the Port of Durban

Although its intentions were not made public at the time, Toyota began to engage the NPA in discussions in 2000 in an effort to gauge responses to projected increased export volumes from its Durban plant. Toyota was not impressed with the initial response, and as was the case with container terminal operations, the firm looked to City government to put pressure on the port to be more responsive. Indeed, Toyota felt compelled to explore a variety of highly unattractive alternatives, such as using a private terminal on Maydon Wharf in amongst bulk and breakbulk cargo, or even placing export cars in boxes. Toyota made their disquiet known through informal channels as they do not like to engage on issues publicly. At this stage Toyota was still only committing to an export figure in 2002 of 30 000 Corollas to Australasia by 2004.

However, it has become clear that Toyota was simply testing the waters and ensuring the robustness of its systems as during the course of 2004 the company announced that it intended to introduce two other export-focused assembly lines. According to an industry expert, the decision has been made to increase Toyota production in Durban to the order of world status, or approximately 250,000 units per year by 2010 (Barnes, 2005). Of these, between 120,000 and 140,000 units will be exported, with most going to Europe. It is highly unlikely that the existing automobile terminal port facility will be able to accommodate this growth.

More recently, the NPA acceded to a request from Toyota and the City of Durban (eThekweni Municipality) to set up a joint task team to assess future development options. This was deemed necessary by both Toyota and the Municipality due the fact that the location of the present facility close to the commercial centre of Durban's inner city has resulted in congestion problems that would only get worse as Toyota increased its export volume. The findings of the investigation have not yet been made public, but according to an eThekweni Municipal official (Thaver, 2005) it is understood that consensus was not achieved and that the NPA is considering going ahead with its preferred in situ expansion option despite reservations from the City and Toyota.

Sadly, this is hardly out of character for the NPA. While the NPA has spent the better part of the last four years developing a Port Masterplan for Durban, it has only been during the course of 2005 that external stakeholders have had access to the plan details. The fact that it was developed in isolation from other key stakeholders is reflective of ongoing governance challenges of a parastatal system which still carries the baggage of hierarchically imposed solutions that were the order of the day under Apartheid. At the same time the intransigence of the Durban port authorities reflects, in no small measure, the ports' dominance within the supply chains that are routed through it. The distances between ports in South Africa are so great and the capacity of the entire system is so constrained, that the Port of Durban enjoys an effective monopoly that remains unchallenged. For now, and for the foreseeable future, there is no alternative to Durban for the shipment of either parts or vehicles with an origin or destination from Durban to Gauteng.

CONCLUSIONS: REFLECTING ON SUPPLY CHAIN ISSUES IN THE DURBAN CONTEXT

We began this paper by embracing the notion that ports and port-cities should seek to insert themselves into supply chains. However, what our case study of inserting Durban in global automobile supply chains has shown is that this is a complex process, involving multiple actors and chains. For this reason we asked which link, in which chain? We have argued for an approach to supply chain insertion which recognises that actors in chains face both internal and external competitive / dominance and cooperative / integrative pressures. We have also argued that supply chain insertion plays out across multiple scales. Hence our conceptual framework differentiates

between logistics and value chains, and between port, local and national scale actors and their (often divergent) goals.

In the case of Durban, there has been some success in inserting the port into the logistics chain of one exporter, while improving facilities for automobile importers. However, this supply chain insertion was driven by a non-local shipper taking advantage of a successful national industrial strategy, and was implemented on the docks by a centrally-controlled port authority. In other words, the port authority did not make it happen, and could not have made it happen, alone. And it has come at a significant local cost, most notably in the lost opportunities to accelerate the insertion of Durban into Toyota's global value chain.

In a general sense, we may conclude that there are two forms of conflict here. First, we have supply chains in competition with each other to dominate particular (critical) supply chain resource, in this instance the attention and facilities of the national port authority. Second, we have a port seeking to insert itself into particular extra-local logistics chains, and a port-city seeking prominence for value chains embedded in the local economy. The shift to a world dominated by supply chains will not eliminate the problems of highly localised tensions between port and city; indeed in some cases it may exacerbate them.

Further, it makes a difference which supply chains are at play in a particular context. Luckily for Durban, Toyota, is a patient, persistent and growing player in the global automobile industry. Toyota and its suppliers arguably have far more interest in logistics chain insertion and integration because of the way in which Toyota (throughout the world) organises its production. TSA already sources a greater share of its parts locally than any other South African OEM, and as it expands production for export, it is committed to further increasing the share of content sourced locally. In order to improve component quality and quantity the firm has taken an interest in some of its major suppliers, and encouraged others to do so themselves. Furthermore, unlike most other South African OEMs, Toyota does not do preassembly, relying on a more complex 'just-in-time' system that requires close attention to logistics integration. All this provides some grounds for optimism that supply chain problems in Durban will eventually be resolved.

The situation we have described might have been very different if we were dealing with a port authority more responsive to local economic actors. For this reason we conclude by noting that the thorny issues of port governance

and of improved city-port coordination remain unresolved. In large part, the scalar tensions playing out on the Durban waterfront are a consequence of the flip-flopping of national ports policy. The post-Apartheid government's first attempt to address transport infrastructure investment backlogs, *Moving South Africa* (1998), failed to take root. Similarly, government has now backed away from the National Commercial Ports Bill which contained an initial commitment to separate the ports from the national transportation parastatal, Transnet, as well as to allow terminal concessions. Instead, since the early 2000s, government has endorsed what is today the status quo, namely the NPA and SAPO operating as two separate divisions under Transnet. Most recently government unveiled a National Logistics Strategy, which recommends reconfiguring and harmonising institutions and regulations, and allowing more competition in transport sector. However, this national policy has very little to say about effective action at the local level to address logistic and value chain integration. From our perspective, this strategy is unlikely to do enough to allow the port and the city of Durban to answer, in a timely fashion, the next time they are asked, which link, in which chain.

ENDNOTES

1. TMC might have considered two alternative strategies, both presenting major problems. First, TMC could have left TSA's licensing arrangement unaltered, hence effectively denying it the option of participating in the MIDP. This would likely have resulted in TSA's decline in the small, but significant domestic market. Second, it could have allowed TSA to export more vehicles (especially low-volume / non-global standard models) to an expanded number of markets, but this option would run counter to TMC's global strategy. This option would have had important logistics consequences, implying many smaller loads with diverse overland (i.e. southern African) and maritime (i.e. west and east coast African) destinations.
2. TSA stopped producing the Camry, which was now imported from Australia. It also began importing the RAV4 and Prado, and began components exports with MIDP tariff benefits. TSA still has the greatest model range of all South African OEMs, producing commercial trucks, a low-end hatch-back (Tazz), mid-sized sedan (Corrola), higher end hatch-back (RunX), minivan / taxi (HiAce), and

- light truck (the Hilux). It is now starting to produce a new hybrid vehicle (MPV), but may soon halt HiAce production.
3. The DTI and various national industry associations were involved in discussions about a national industrial and cluster strategies at approximately the same time. While these discussions did lead to adjustments in the MIDP that were instrumental in BMW's expansion, local suppliers set up their own forum in part because they did not find the national discussions particularly useful.
 4. These figures apply for firms participating in the initiative from both KwaZulu-Natal and the Eastern Cape.
 5. This is not to say that BMW was spared the efficiency concerns faced by other Transnet users. The firm still uses road rather than rail to bring containerised parts from Durban to bypass the City Deep inland port, and even use Port Elizabeth and Cape Town to avoid the delays at the Durban container terminal.
 6. The Southern Industrial Basin extends from the south end of the port to south of the Durban International Airport, and includes Prospecton, Jacobs, Mobeni and Seaview. Prospecton is home to Toyota SA.

REFERENCES

- Arkin T (2005) *An examination of the impact of infrastructure provision and management of the Port of Durban's car terminal has had upon the KwaZulu-Natal auto industry*. Draft unpublished MA Thesis, School of Development Studies, UKZN
- Barnes J (2005) *Personal Communication*. Benchmarking and Manufacturing Analysts.
- Barnes J and Johnson Julia (2004) *Sectoral Overview of the Automotive Industry in the eThekweni Municipality and Broader KZN province*. Unpublished research note produced for eThekweni Municipality by B&M Analysts.
- Barnes J, Kaplinsky R and Morris M (forthcoming, 2003 version) *Industrial Policy in Developing Economies: Developing Dynamic Comparative Advantage in the South African Automobile Sector*. *Competition and Change*.

- Bichou K and Gray R (2004) A logistics and supply chain management approach to port performance measurement, *Maritime Policy and Management*, 31(1): 47–67.
- Campbell S (1993) Increasing trade, declining port cities: Port containerization and the regional diffusion of economic benefits. In Nojonen H, Graham J and Markusen A (eds) *Trading industries, trading regions: International trade, American industry and regional economic development*, New York: Guildford Press, 212-255.
- Coe NM, Hess M, Yeung HW, Dicken P and Henderson J (2004) Globalizing regional development: a global production networks perspective, *Transactions of the Institute of British Geographers*, 29: 468–484.
- Cox A, Ireland P, Lonsdale C, Sanderson J and Watson G (2002) *Supply Chains, Markets and Power: mapping supplier and buyer power regimes*, London: Routledge.
- Dicken P (2003) *Global Shift: reshaping the global economic map in the 21st century*, (4th Edition), New York: Guildford.
- GEAR (1996) *Growth, Employment and Redistribution: A Macroeconomic Strategy*, Republic of South Africa, Pretoria: Government Printer.
- Gereffi G (1994) The organization of buyer-driven global commodity chains: how US retailers shape overseas production networks, in Gereffi G and Korzeniewicz M (eds), *Commodity Chains and Global Capitalism*, Westport: Praeger Publishers.
- Gereffi G, Humphrey J and Sturgeon T (2005) The governance of global value chains, *Review of International Political Economy*, 12(1): 78 – 104.
- Hall PV and Robbins G (2002) Economic Development for a new era: an examination of the adoption of explicit economic development strategies by Durban local government following the April 1994 elections. In: Freund W and Padayachee V (eds), *(D)urban Vortex: A South African City in Transition*, Durban: University of Natal Press.
- Hall PV (2004) Persistent variation: flexibility, organization and strategy in the logistics of importing automobiles to the United States, 1980-1999, *Environment and Planning A*, 36(3): 529-546.
- Hall PV and Olivier D (2005) Inter-firm relationships and the evolution of transportation systems: the case of the car carriers and automobile importers to the United States. *Maritime Policy and Management*, 32(3): 279–295 (Special Issue on Shipping in the Americas).
- Hall PV, Hesse M and Rodrigue JP (forthcoming, 2006) Guest Editorial: Re-Exploring the Interface between Economic and Transport Geography, *Environment and Planning A*.

- Heaver T (1995) The implications of increased competition among ports for port policy and management, *Maritime Policy and Management*, 27(4): 125-133.
- Heaver T, Meersman H and Van de Voorde E (2001) Co-operation and competition in international container transport: strategies for ports, *Maritime Policy and Management*, 28(3): 293-305.
- Humphrey J and Schimtz H (2002) How Does Insertion in Global Value Chains Affect Upgrading in Industrial Clusters? *Regional Studies*, Vol. 36(9): 1017–1027.
- Lipietz A (1993) The local and the global: regional individuality or inter-regionalism? *Transactions of the Institute of British Geographers*, 18: 8-18.
- Lorentzen J, Robbins G and Barnes J (December 2004 version) *The Durban Auto Cluster: Global Competition, Collective Efficiency, and Local Development*, (unpublished paper), School of Development Studies, University of KwaZulu-Natal.
- Morris Mike, Barnes J and Dunne N (2002) From Import Substitution Industrialisation to Globalised International Competitiveness. In: Freund W and Padayachee V (eds), *(D)urban Vortex: A South African City in Transition*. Durban: University of Natal Press.
- Morris M and Robbins G (2004) The role of government in creating an enabling environment for inter-firm cluster co-operation: Policy lessons from South Africa. Forthcoming in *Clusters in Africa: Pattern Practice and Policies for Innovation and Upgrading*, Published by INTECH.
- MSA (1998) *Moving South Africa*. Department of Transport, Republic of South Africa, Pretoria: Government Printer.
- Notteboom TE and Winkelmanns W (2001) Structural changes in logistics: how will port authorities face the challenge”, *Maritime Policy and Management*, 28: 71-89.
- Notteboom TE (2002) The Interdependence between liner shipping networks and intermodal networks, *IAME 2002 Conference Proceedings*, Panama.
- Olivier D and Slack B (forthcoming, 2006) Rethinking the port. A dialogue between (trans)port and economic geography. *Environment and Planning A*.
- Panayides P (2002) Economic Organization of Intermodal Transport, *Transport Reviews*, 22(4): 401-414.
- Robinson R (2002) Ports as elements in value-driven chain systems: the new paradigm, *Maritime Policy and Management*, 29(3), 241-255.

- Slack B, Comtois C, and McCalla R (2002) Strategic alliances in the container shipping industry: a global perspective, *Maritime Policy and Management*, 29(1): 65-76.
- Sturgeon T and Florida R (2000) *Globalization and Jobs in the Automotive Industry*. A study by the Carnegie Mellon University and the Massachusetts Institute of Technology for the Alfred P Sloan Foundation.
- Thaver D (2005) *Personal communication*. eThekweni Municipality.
- Yeung Y-M and Li X (1999) Bargaining with Transnational Corporations: The Case of Shanghai, *International Journal of Urban and Regional Research*, 23(3): 513-533.