In with the new and out with the old? Industrial estates and economic development in Durban, South Africa

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Abstract:

In cities where manufacturing has thrived, considerable local attention has been given to the development of areas of land for industrial estates. The development patterns of many cities have thus been heavily influenced by choices about the location of, and infrastructure for, industrial estates. These estates, and the businesses that have occupied them, have contributed to the growth and identities of cities. Yet, as much of the world has transitioned away from established forms of mass production, and as the influences of globalised value chains in production have escalated, challenges for mature industrial estates have increased whilst demand for greenfield land development opportunities has grown. In this context it is not uncommon for cities to have new mixed-use industrial or business estates and older estates in varying states of transition from older dominant uses to non-industrial uses or to a mix of these and a variety of evolving industrial uses. With the transformation of industrial estates regularly noted in various local urban policy formulations, and occasionally considered in national policy, questions arise of how best to attend to the often-varied needs of mature industrial areas, including those experiencing decline and urban decay. A challenge is in terms of these estates competing for the attention of policy-makers alongside demands for the transformation of new land parcels, and their associated infrastructure needs. In South Africa, with its experience of some considerable industrialisation, these issues have featured in some debates on the development patterns and character of cities and towns. Historically, areas set aside for industrial uses were typically set up to separate racially defined residential group areas. Furthermore, black residential areas were often located on land close to industrial estates to ensure the proximity of labour and to utilise land that was frequently deemed unsuitable for other uses because of the negative impacts of various industrial activities. Apartheid policy-makers also incentivised the development of industrial estates on the urban periphery to keep the growing black urban labour force away from the core parts of cities. A city such as Durban and its surrounds, under the eThekwini Metropolitan Municipality, today reflects the impact of these various influences in the presence of both mature and newer industrial estates. Drawing on research into eThekwini industrial estates and on a survey of manufacturing firms in the area, this paper discusses the challenges arising from changing firm demands on contemporary and future urban policy considerations, with a particular focus on urban economic development. The paper argues that a confluence of factors have impacted on conditions in mature estates and on the growth of new industrial estates. Furthermore, the tendency of various policy

influencers to neglect the needs in more mature estates in favour of greenfield projects has had considerable impacts on the urban form of the city and its economic development trajectory.

Key words: Industrial estates, Urban development, Cities, Manufacturing, Economic development, Local government, Urban infrastructure

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1. Introduction

Industrial estates and industrial sites have constituted, and continue to constitute, an important use of land in many - if not in most - cities around the world. Industrial development has of course been closely associated with processes of urbanisation. This has been noted by authorities such as Alfred Marshall, one of the eminent documenters of the 18th century industrial revolution in Britain, and somewhat more recently by Jane Jacobs who explained the process of land use specialisation in a city context. She argued in favour of urban land use specialisation, geared to both meeting the particular needs of businesses, and minimizing excessive conflict arising from conflicting land uses. For Jacobs this was important because, "The overwhelming fact about cities is that if they do not maintain self-generating economies, they will ultimately stagnate and decline" (Jacobs, 1969: 652).

In cities where manufacturing has historically, and more recently thrived, considerable local attention has been given to the development of areas of land industrial estates. The development patterns of many cities have thus been heavily influenced by choices about the location of, and infrastructure for, industrial estates. These estates, and the businesses that have occupied them, have not only contributed to the growth of cities, but also contributed to the identity of cities and the people living and working in them. However, as much of the world has transitioned away from established forms of mass production (Piore & Sabel, 1984) and as the influences of globalised value chains in production have escalated (Gereffi *et al.*, 2005), challenges for mature industrial estates that pre-date some of these influences have increased whilst demand for greenfield industrial land development opportunities has grown. In this context it is not uncommon for cities to have both, new, often mixed-use, industrial or business estates, as well as many older estates in varying states of transition from older dominant uses to non-industrial uses or to a mix of these and a variety of evolving industrial uses. Questions of how best to attend to the often-varied needs of mature industrial areas, including those experiencing some form of decline and urban decay, compete for the attention of policy makers alongside demands for transformation of new land parcels, and their associated infrastructure needs. As cities have experienced growth, especially more recently in many developing countries, competing pressures have emerged for scarce, serviced land and property.

In South Africa, with its experience of some considerable industrialisation, these issues have featured in some debates on the development patterns and character of cities and towns historically and in more recent times (Maylam, 1990; Hart, 2002; Scott, 2003; Geyer, 1989). Historically, areas set aside for industrial uses were often used as part of apartheid urban planning arrangements to separate racially defined residential group areas (Parnell & Mabin, 1995). Furthermore, black residential areas were often located on land close to industrial estates to ensure the proximity of labour as well as to utilise land that was frequently deemed unsuitable for other uses because of the negative impacts of various industrial activities. Apartheid policy makers also incentivised the development of industrial estates on the urban periphery as part of a plan to try and keep the growing black urban labour force away from the core parts of the city (Maylam, 1990). In the city of Durban, and its surrounds (falling under the eThekwini Metropolitan Municipality) the impact of these various influences are reflected in the presence of both mature and newer industrial estates in particular areas of the city, overlaid across a persistent racial geography of settlement (Schensul & Heller, 2011). Today, the eThekwini Municipality is subject to an array of other influences, some showing continuity with the past whilst others reflect new factors. A wide range of state-led policies and programmes prevail in the contemporary South African metropolitan context and these often interact with civil society actors and activities of those in the businesses community. In fact, urban space and the regulatory and development processes associated with it are subject to widespread contestation, not just from more powerful actors with a metropolitan sphere of influence, but also with local actors in local spaces. Industrial estates, new and old, are by no means immune from these processes (Scott, 2003; Robbins & Velia, 2013).

Drawing on research into eThekwini Municipality, which Schensul and Heller (2011) refer to as, "a classic instance of a Fordist city in transition", this paper seeks to discuss the challenges arising from changing firm demands on contemporary and future urban policy considerations, with a particular focus on urban economic development. In order to do we relay the results of an analysis of data from a large-scale survey of medium and large manufacturing firms in the city (Robbins *et al*., 2016**a**) combined with additional material drawn from an analysis of secondary material and interviews with actors familiar with industrial estates and the issues facing them. The paper also highlights national policy considerations, such as the intended development of Special Economic Zones, and their intended and unintended influences.

As should be clear, the paper places firms at the centre of its analysis. This is a perspective that is not given a great deal of attention in South African urban research, where attention tends to centre on either the grand schemes of policy-makers and their related actions or the long suffering concerns of the urban poor. This paper by no means seeks to supplant these focuses, but instead we want to give perspectives and data from firms the necessary attention they deserve, alongside other actors, as highlighted by Hart (2002) in her seminal work on post-apartheid transition in the Newcastle-Ladysmith area of KwaZulu-Natal Province.

2. Industrial development and cities

Industrial development has played, and continues to play, an important role in urban development. It has been widely argued that it offers the scope for both employment creation and local economic value addition. Industrialisation has also been critical in helping to generate, directly as well as indirectly, public resources for numerous public programmes. (This happens through taxation and margins on the supply of utilities such as water, waste and electricity.) In fact generally the resources generated through skilled work, wages and profits, as well as in the sale and use of manufactured products and adopted technologies that are necessary for local consumption and development, have been noted as critical to urban development and the livelihoods of people. Well-managed and thriving industrial estates can contribute substantially to cities being able to grow their economies and thereby the prospects for employment. Because the manufacturing sector has such important linkages with other economic processes, it can also stimulate further deeper economic processes in cities; these processes are important for small, medium and large businesses, not just in manufacturing, but also in a variety of services sectors. This means that, on the ground, few cities have been able to successfully grow and meet the needs of an urbanising population without sustaining and expanding manufacturing activities.

Processes of local industrial development, understood through the lens of political economy, have also contributed to the modernisation of governance systems: urban residents, both professional staff and working classes, have engaged in struggles to influence industrial and urban reforms. Their growing numbers and the importance of their economic contribution allowed for the creation of various democratic spaces of dialogue with government. This, in turn has also provided fertile ground for cultivating new urban cultural environments that have been so important in helping craft a variety of contemporary urban identities. Industrial development processes have thus been a necessary element for the creation of urban areas that can better meet the needs of citizens and a variety of economic systems.

Whilst industrial development might not necessarily be synonymous with cities and their economic development, it is widely understood that there has generally been a strong correlation, even a symbiosis, between the two. Although, this is a correlation that has been much weaker, perhaps even absent, in some developing country contexts,[1] this paper will

[1] This is especially the case in much of Africa where urbanisation has historically been slower to take root and where processes of industrialisation have often flattered to deceive.

nonetheless dwell on this association as the focus of this discussion is on Africa's most industrialised country, South Africa.

Although some cities predate capitalism's modern variants, their growth as centres of power, production and consumption has been closely associated with the triumph of forms of capitalist production and reproduction that replaced feudal arrangements that had defined both economic and social relations in previous eras. Authors such as David Harvey (2002) have argued that urbanisation serves the purpose of supporting accumulation under capitalist social relations: "the urban process implies the creation of a material physical infrastructure for production, circulation, exchange and consumption." (Harvey, 2002: 116-117) In this context, investing in the built environment in cities presents as a challenge as those with economic power might have a tendency to under-invest. The state thus has to try and marshal the necessary resources to enable the basic functioning of the urban system, but can itself be distracted from this task by influences of capitalist classes which encourage forms of speculative development. In this context working class struggles are often over the nature of the allocation of the surplus and how this surplus can serve wider societal interests such as schools, health care facilities or improved urban transportation. These tensions can also be witnessed seen in how cities handle pressures from developers of new housing, commercial and industrial property against those of other needs across cities.

Still drawing on the experience of those countries that have been industrialised in the nineteenth and twentieth centuries, Allen Scott (2002) points out that, "Much urbanization in capitalism is in fact posited upon various combinations of both large-scale basic industries and small scale (often labour-intensive) industries." (Scott, 2002: 134). The author outlines how often the demands of some of the larger scale industries for infrastructure, labour, inputs and services encouraged urban growth in that the meeting of some of these demands helped also create infrastructure enabling further human settlement. In fact in many cities, as Harvey (2002) would concur, the built environment was designed taking into account the particular needs of these industries, something also replicated in functionalist city designs of Soviet-style development in the post-World war II era.

North (1990) has further elaborated on how important infrastructure was in servicing the growth of cities and their associated industrial bases. However, Allen Scott points out that city growth has also often been fuelled by smaller-scale business specialisation and not just specialisation around some dominant industries and their services.[2] According to this author moreover: "Virtually all of the specialized trades in the city were highly localized" (Scott, 2002: 137). This feature is also in Jane Jacobs in her exploration of the economic and social life of North American cities (Jacobs, 1969). She argued that forms of land-use specialisation in these cities was very closely associated with the development of new specialised businesses as their economies evolved. Having particular needs of business met and avoid forms of destructive land-use conflict was essential to "maintain self-generating economies" and thus to avoid a future where they will "stagnate and decline" (Jacobs, 1969: 652).

This relationship between urbanisation and spatial patterns of economic development was in fact explored much earlier by Alfred Marshall. It is from this author that we understand the character of benefits to firms from a proximate location to one another in urban areas. As one of the eminent documenters of the 18th century industrial revolution in Britain, Marshall argued that

> Employers are apt to resort to any place where they are likely to find a good choice of workers with the special skill which they require …. The advantages of variety of employment are combined with those of localized industries in some of our manufacturing

[2] He illustrates this point with a discussion of the evolution of the Birmingham gun and jewellery-manufacturing sectors that grew out of an array of specialised trades.

> towns, and this is a chief cause of their continued economic growth. (Alfred Marshall (1920: 271), as quoted in Rosenthal & Strange, 2004: 11).

From the Marshallian analysis one can firstly understand features of urbanisation economies. These are economies associated with firms being able to benefit from locating in an urban area that offers a wide range of proximate market and supply options as well as a labour force and a certain scale of infrastructure and institutional capacity made possible by the scale of settlement. Firms can also gain from localisation economies which are those arising from features such as specialised infrastructure (including possibly industrial estates) and specialised institutional arrangements that that meet their specific needs.

A wide range of other theorists and researchers have also sought to describe wider economic development benefits for countries from the particular features generated in often unique relationships between urban development and economic activity. For example, drawing on the influence of Marshall, researchers have described the important role of "industrial districts" in enabling particularly successful and competitive patterns of economic activity. For Becattini, these districts:

> can be thought of as a large production unit, whose coordination and control of the normal functioning of the different production and selling phases do not follow administrative rules and are not performed by hierarchical mechanisms .… They are rather delegated to a combination of the automatic functioning of the market with a system of social sanctions inflicted by the community on trespassers. The closeness allows the territorial system of firms [i.e. the Industrial District] to enjoy the large-scale economies deriving from the overall production in all practical respects; yet the system does not loose the flexibility and capacity of adaption to the varying business trends that are a feature of its fragmentation. (Becattini, 1991: 85)

Developing these ideas of how firms interact with space and influence one another and the locations they operate in has also been an interest of Michael Porter in his work on competitiveness and clusters (Porter, 1998). For Porter, successful manufacturing is shaped by networks and relationships in what constitutes 'clusters'. These

> are geographic concentrations of interconnected companies, specialized suppliers, service providers, firms in related industries, and associated institutions (e.g., universities, standards agencies, trade associations) in a particular field that compete but also cooperate. (Porter, 2000: 15)

He goes on to point out, based on actual findings, that "Clusters suggest that a good deal of competitive advantage lies *outside* companies and even outside their industries, residing instead in the locations at which their business units are based." (Porter, 2000: 15)

Other writers have also explored similar ideas such as the importance of "collective efficiency" in enabling firms to collaborate in such a manner so as to address the needs of customers (Schmitz, 1997). Prominent urban economic theorist Michael Storper has written about the critical role of generalised and specific institutions in supporting growth in cities that help foster relationships between different urban actors (Storper, 2010). The notions behind the new, often localised, elements of competitiveness that would arise from such relationships and new arrangement, require a rethinking of urban spaces where firms operate. Such an urban space would contain arrangements that are conducive to *social processes between firms*. These processes, in turn, hold the promise of enabling the development of localised institutions that can help harness the potential of enhanced inter-firm collaboration on matters ranging from skills provision, workplace health and safety, technology acquisition, waste and energy reduction and a host of other areas. This challenges old forms of specialisation. But, it introduces new specialisation dynamics that do not generally emanate from the market; market are dispose to fail because of coordination challenges or because of failures in the provision of what some have termed "new public goods".

The interactions between urban economic actors and the presence of institutions which Storper argues is needed for new dynamics might or might not operate in space. Furthermore, how this impacts on the economic performance of (i) the specific firm actors in space and (ii) of a city or region have not been particularly well handled in the development of many cities. Processes of urban decay, infrastructure obsolescence or the impact of a range of social and environmental problems (some contributed to, or even perhaps caused by firms) have often left many previously specialised economic spaces in cities bereft of combinations of economic actors, of infrastructure and of a quality business environment that is required to sustain notions such as that of "collective efficiency". In many cases, forms of urban planning and design emphasised spatial layouts that generated spatial separations. These layouts served an environment of highly predictable Fordist mass-production and vertical integration of production activities. These are not particularly suitable to more contemporary economic phenomenon such as those of dispersed production in global value chains (Gereffi *et al*., 2005).

Today, in many different contexts, tertiary services have surpassed manufacturing (the traditional mainstay of industrial estates) as the dominant economic activity in cities. In some towns and cities, manufacturing has struggled to even get off the ground in the first place. Older industrial estates that hosted manufacturing firms are now characterised by some urban decay, whilst others have been re-purposed as re-generated mixed-use areas or even as tourism attractions.

Shifting demand patterns for land have seen local and other policy-makers typically favour greenfield developments to accommodate a new generation of manufacturing businesses and the accompanying service and logistics firms that work alongside them. Ironically, these areas often replicate, in many contexts, the institutional vacuums that relocating firms fled from (e.g. in older estates) as relevant actors struggle to generate these in a sustainable manner on the urban periphery when their effectiveness often depends on embeddedness in higher intensity urban spaces.

In a context of scarce resources and where urban sprawl predominates it is not always easy to support the kinds of competitiveness that Porter and others have written about, although new institutional actors have emerged (e.g. development agencies) to fill agglomeration type gaps - often through some forms of subsidy or targeted interventions (Brenner, 2004). This happens in the absence of any coherent policy guidance from other spheres of government. And indeed, while national or provincial departments are eager to support manufacturing growth, they either have little to say about the specifics of location, or are, more often than not, interested in attempts to support struggling regions or develop FDI-focused special zones. As for the private sector - and more specifically the manufacturing businesses that occupy industrial estates, it is rarely consulted on land use change and development processes. Similarly or perhaps even more neglected, is the fact that the voice of the workers that find employment in poorly serviced/supported areas is left unheard; planning processes and developer interests neglect, as such, complex needs of workers such as night time safety for shift workers, institutions to access skills, green recreation areas, public health facilities and appropriate forms of public transportation.

In cities where manufacturing has historically thrived, considerable attention has been instead given to the development of land for new or greenfield business/industrial estates. Thus it is no surprise that this has been an important feature of local/municipal public policy and also a matter of vocal private interests (by property developers). Those cities and towns with a low profile in manufacturing have also often sought to plan for possible future industrial development, informed by a desire to grow their local economies. A look at some of the national economies that have witnessed the most consistent higher levels of growth in recent decades also reveals that the development of industrial estates in cities and larger towns has provided a key location from which national economic growth has been driven. At times, these processes have captured the interest of national actors in the form of planning, infrastructure investments and various policy and regulatory instruments. Special economic zones (SEZs) have also put forward along the way, in recognition of the possible synergies between urban growth and industrial development.

In spite of new forms of spatial developments along economic lines being conceived, industrial estates are the predominant location for medium and larger manufacturing firms. These estates have had positive and negative impacts within city landscapes. Some industrial processes have had, in reality, severely negative impacts in urban spaces through: emission of pollutants, noise, and the handling of hazardous processes and waste. The industries themselves have contributed to transport congestion and to the deterioration of communal infrastructure such as roads and sewage systems when this infrastructure is heavily used. Industrial processes may also loom large in the spaces they occupy and negatively impact local aesthetics and social resources. Moreover, businesses can consciously sidestep regulations and engage in behavior that further exacerbate city-wide and community problems. At times various levels of the state, through commission or omission, facilitate these negative impacts made by industry when they take no steps to rectify the issues. As a result industrial estates and their surrounding areas can suffer from urban decay and its associated problems. Furthermore, changes in local, national or global economic processes can also render businesses or even parts of industrial estates obsolete. Many would argue that these pressures have generated a degree of uncertainty that makes actors in industrial estates focus on shorter time horizons in their investment decision-making.

The factors laid out above have contributed to inconsistent attention being directed to manufacturing firms and industrial estates by different spheres of the state. Elected representatives are often ambivalent about the role of businesses in the areas, as after all, firms do not vote. The variety and complexity of businesses in industrial estates makes them very difficult municipal customers to satisfy. An industrial partner can have high intensity use of infrastructure which causes ongoing maintenance challenges and can place extra pressure on various service units or departments. City leadership, whilst prepared to cut ribbons at events to celebrate new plants or investments, steer clear of the everyday, more mundane challenges of industrial estates. Leadership attention is generally captured by developments in new areas or new projects that are associated with 'hot' economic activities involving technology, tourism or new property developments. At the provincial or national scale, issues involving individual firms or particular industrial estates can be viewed as parochial concerns and thus not deserving of attention when it comes to budgets or policy. This behavior is aggravated by fragmented business organisations that rarely find themselves able to communicate with a common voice.

Despite these challenges, the prospects for manufacturing to help generate economic growth and employment creation has kept manufacturing on the agenda in many cities around the world. The firms bring higher value processes with demand linkages into a wide range of local production and services. Many cities have played direct roles in upgrading or re-developing areas in which these firms are located or where they might want to locate. Major public (and even public-private) infrastructure projects are considered in this because of their fresh prospects to grow industrial activity. [3] Cities have been keen to support new estate developments that have fewer drawbacks, compared to older, space-constrained estates. In fact business themselves are often attracted to these new estates for a wide range of reasons, including the need for more space, the offer of different building formats or even for image reasons. As for other spheres of government, they see the attraction of linking new special industrial estate projects in or near cities to their national programmes. The consequence of all of this is that more established estates and the businesses that occupy them are often not given the attention their economic contribution might justify.

[3] Funding of large-scale infrastructure projects is made more viable if directly associated with users of that infrastructure, who can in turn generate a scale of demand and thus secure the necessary revenue streams needed by municipalities and infrastructure providers.

3. Evolving contemporary manufacturing dynamics and industrial estates in cities

Changes in trade, technology, organisation of production and product demand have all influenced the evolution of manufacturing activities. These changes have impacted heavily on the relationships between firms and the spaces they operate in. Probably the most significant change in this regard has been the globalisation of production networks whereby most manufacturing businesses are either actively or passively part of some type of globalised or globalising value chains. Alongside this firms have responded to pressures for increases in productivity and specialisation by outsourcing many aspects of production which they deem non-core or that are better performed by other specialised suppliers. Large-scale Fordist-type mass production of long runs of standardised products has increasingly been replaced by production on demand and related systems such as just-in-time supply. As a result, processes associated with manufacturing have become more logistics intensive: there is a considerable need to move products between establishment nodes in the chain of production, whether these are located in the same city or in the same country or even in different countries. In parallel, manufacturing processes have become more technologically-driven and more skills-intensive and, in some cases, more sensitive to environmental factors. Successful manufacturing has thus been heavily influenced by networks and relationships as discussed early (cf. the work of Porter and others).

Internationally these trends have influenced the development of many new generation industrial estates so that they now have a strong logistics orientation and design. Such estates have emerged together with a variety of alternative institutional and infrastructural resources that are meant to support contemporary firm needs (e.g. co-locating pharmaceutical production with university R&D facilities, or particular export support in an export processing zone). Developments in the production sphere have, in parallel, influenced the character of many more established estates with efforts towards their regeneration responding to changing firm needs in a rapidly evolving economic context. However, as has already been emphasised, many older and newer industrial estates often lack any of the particular features that enable the firms operating in them to more easily harness the opportunities related to contemporary manufacturing competitiveness dynamics. Within older estates firms are frequently left in the mire of externalities that they, other firms, new insurgent users of space (from the homeless to exploitative property actors) and the state have contributed to. In the case of newer estates the kinds of organic processes of agglomeration and specialisation described elsewhere is either ignored by developers, firms and state actors or delivered in a manner that shows disregard for complexity and trust building emphasised in the literature on the social construction of space.

Table 1 provides an overview of some of the changing imperatives that manufacturing firms seek from industrial areas, irrespective of whether they are greenfield or established estates.

Table 1. Contrasting traditional and new/emerging approaches to industrial areas

Categories	Traditional approach	New/emerging approach
Allocation of uses	Separation of land uses according to process categories such as ‘heavy’, ‘light’, ‘noxious’.	Mixed use with greater emphasis on on-site externality management.
Infrastructure	Standardised, public provided, infrastructure with specialised adaptions only for largest firms.	Multi-structure or adaptable infrastructure solutions. Multi-stakeholder provided.
Key advantages	Proximity to infrastructure, labour.	Proximity to leading firms, suppliers & key local institutions
Area design	Compact development & separated from other land uses.	Spacious sites to allow for logistics & flexibility. Integrated with other uses.
Institutions	Focus on regulation of activities.	Focus on value adding & collaboration.

Categories	Traditional approach	New/emerging approach
Management	Through user initiated line department services.	Through dedicated local management teams & local partnerships.
Labour force	Predominantly lower skill.	Mid- to high-skill.
Firms	Individualist and hierarchical.	Collaborative & often negotiated interdependencies.
Buildings	Fixed brick/concrete structures.	Flexi-buildings with light adaptable frames & materials.
Services	Set offerings. Traditional utilities.	Flexible, user-informed offerings & standards, also covering new public goods.

Source: Authors' own research.

4. Industry and industrial estates in Durban

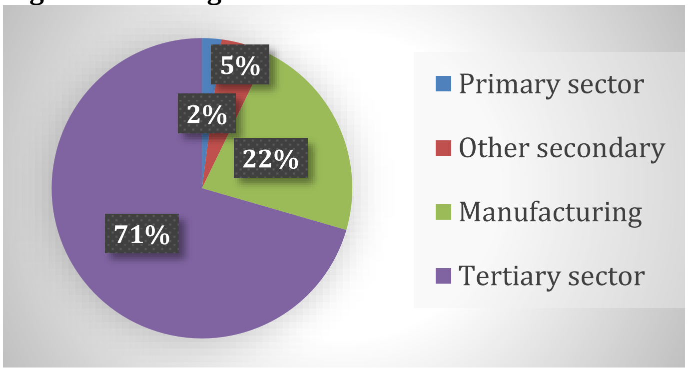
Durban is South Africa's third largest city in population terms and has a similar share of national economic activity (9.2% of national Gross Domestic Product in 2015 at 2010 prices) to that of Cape Town, with both cities somewhat shy of the 30% national economic contribution of Johannesburg and the greater Gauteng City region (including the metropolitan areas of Pretoria/Tshwane and Ekurhuleni). South Africa has, in the last few decades, seen the share of manufacturing in national GDP fall in a context where other sectors, such as those of a more tertiary orientation, have displayed consistently higher growth rates. The sector has also experienced considerable employment loss – something that has also characterised the sector in Durban, although manufacturing employment remains very important in Durban's total employment picture.

Durban has in fact, since the early twentieth century, been an important domestic industrial hub. This has had much to do with its port facilities and the relative proximity of the port-city to the national economic hinterland dominated by Johannesburg. South Africa's economy has been heavily dependent on trade as it has exported primary goods and often imported fuels and manufactured inputs and final goods. Industrial development has therefore played a critical role in the development landscape and character of the city. The large industrial areas around the inner city, particularly to the south, which were developed by public and private sector actors, often with a fair degree of collaboration, are an illustration of this.

4.1. Durban's industrial sector

Durban's industrial activity has always been somewhat diverse in terms of sectors, but in employment terms the city has had a considerable exposure to labour-intensive manufacturing, particular in clothing and textiles which made up at one stage, around half of all manufacturing employment. However, with South Africa opening its economy to global competition the late 1980s and early 1990s, employment in clothing, textile and footwear declined precipitously. Despite a number adverse international and domestic trends that happened subsequently, the share of manufacturing in Durban's economy remained relatively high - at 22% between 2008 and 2013, compared to 20% for the whole of Gauteng and 16% for Cape Town. In terms of manufacturing sub-sectors, Durban has a strong presence of automotive firms, petro-chemical and chemical, metals and related engineering, pulp and paper, food and beverages, clothing and textiles and footwear and leather.

Figure 1. Average share of eThekwini GVA 2008-2013(%)



Note: 2008-2013 period average – % from Gross Value Added data at constant 2005 prices
Source: Quantec (2015).

Informed by issues of land regulation, infrastructure, and access to labour, firms have tended to have larger concentrations in certain industrial estates, although over time some of these have become less pronounced as the industrial structure has experienced changes. Many automotive supply firms have located close to Toyota in estates close to Prospection industrial estate as well as in the New Germany area. Historically clothing, textile and footwear firms were located in older industrial areas close to the port, but later on expended to some peripheral settlements to access, encouraged by government policies and incentives.

The continued importance of manufacturing in the city has been recognized in a range of city policies and programmes. In its 2013 Economic Development Strategy the view that the eThekwini Municipal Area has the "potential to capitalise on its manufacturing base to become the premier centre for export production" (eThekwini Municipality, 2013:17). Informed by this commitment the municipality has, for a number of years, supported a variety of programmes of relevance to manufacturing, at times in partnership with other spheres of government and the private sector. The main programmes/interventions have been:

- Cluster development programmes such as the Durban Auto Cluster, Chemicals Cluster and the Clothing and Textile Cluster;
- Special industry infrastructure interventions such as those related to Toyota's vehicle export facilities and other investment facilitation services;
- Considerable industrial estate infrastructure provision for newly developed estates such as the more centrally located Intersite, Riverhorse Valley, and also those to the north such as the Dube TradePort (at King Shaka International Airport) and Cornubia as well as the Keystone estate on the western fringe of the municipality;
- Some erratic efforts at small-scale industrial estate problem solving efforts such as those related to municipality-supported Business Retention and Expansion (BR&E) projects in areas such as Phoenix Industrial Park, Jacobs/Mobeni and, more recently, New Germany.

4.2. Industrial land in Durban

In terms of the city's industrial land-uses[4], the industrial sector is a major land-use category: land zoned for industrial activities amounts to approximately 10,850ha of a total of available

[4] The eThekwini Municipality defines industrial property as: "property used for a branch of trade or manufacturing, production, assembly or processing of finished or partially finished products from raw material or fabricated parts in respect of which capital and labour are involved, and includes: a)The production of raw products on the property; b) The storage and warehousing of products; and c) Any office or other accommodation on the same property the use of which is incidental to such activity. From this definition four industrial zones can be identified that determine the use of the land 1. Extractive industry, 2. Noxious industry, 3.General industry, 4. Heavy industry." (The Planning Initiative, 2013: 10)

land in the municipality of 229,193ha (The Planning Initiative, 2013: iv). Industrial land is shown in Map 1 below along with areas that are being considered for future industrial land expansion.

The city's industrial landscape has seen some major changes over time. Historically, the port and surrounding areas have been the prime location for warehousing and for manufacturing production of various kinds. Dianne Scott (2003) provides an excellent study of the evolution of how "The combined interests of industry, the Durban Town (and later City) Council and the national port authorities had worked together to put in place the legal apparatus and to allocate large areas of public land as a basis for implementing their vision of an industrial zone." (Scott, 2003: 247). These areas would eventually include the long-established industrial areas of Jacobs, Mobeni, and Prospecton, known to some today as the South Durban Basin. It is still one of the busiest manufacturing hubs in Durban. Currently the area reaches from the Port of Durban in the north to eZimkokodweni (Umbogintwini) in the south and is home to two large petrochemical refineries (Engen and Sasol), a large paper mill (Mondi), Toyota and an estimated 5000 businesses.

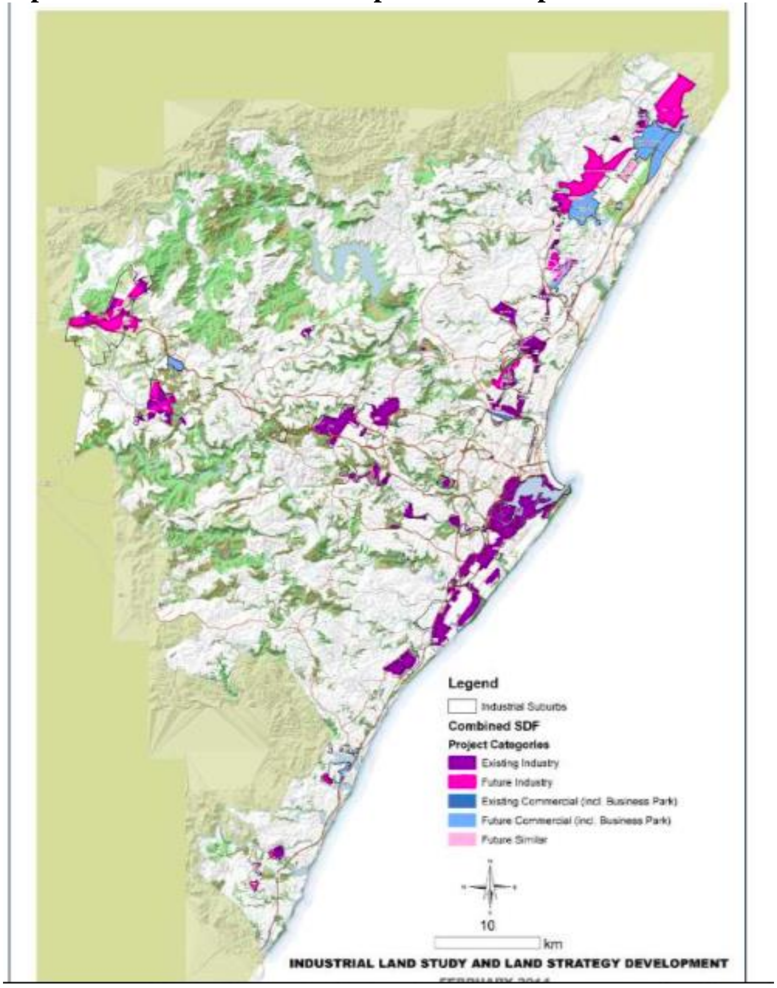
In the 1950s and 1960s industrial estates in and around the western areas of Pinetown and New Germany were consolidated. Today these serve as the second most important manufacturing and industrial land hub in the eThekwini Municipality[5]. Originally businesses such as Frame Textiles originally dominated the region with tens of thousands of employees. However, over the years the area has emerged as a diversified base for manufacturing across sectors such as automotive components, engineering, packaging, food and chemicals. Westmead and Mahogany Ridge have developed as industrial areas since the 1970s, with the considerable expansions that took place in the 1980s and early 1990s. Government also promoted Hammarsdale – adjacent to the KwaZulu-Natal 'homeland' administered settlement of Mpumalanga - as an industrial location as part of the apartheid urban planning model seeking to keep black African workers to the periphery of the city. More recently, the Outer West part of the eThekwini Municipal Area has also seen some new industrial developments around Cato Ridge and the new Keystone Industrial Park near Hammarsdale.

A range of industrial areas were also developed to the north of the city centre of Durban from the 1950s through to the 1980s. These include older industrial areas around Umgeni Road, Sea Cow Lake, and the North Coast Road. In the 1970s and 1980s industrial estates such as Phoenix Industrial Park and later the development at Springfield were incorporated into city plans. Subsequently the city worked with land owners such as the Tongaat Hulett Group on the redevelopment of this company's land around North Coast Road and later at Riverhorse Valley. Further north, Verulam and Tongaat, beyond the original boundaries of the apartheid-era Durban City Council, had also been notable economic centres for many decades, with activities linked to the sugar, textiles and clothing sectors. The establishment of further municipal infrastructure, as well as the new King Shaka International Airport, has increasingly shifted to growing industrial land development in the northern parts of the city (SAPOA, 2015). More often than not the target for this shift has been not been large-scale manufacturing, but specifically warehousing/logistics businesses (also using industrial land) alongside major new commercial and residential developments.

Plans associated with the national government's Strategic Infrastructure Programme (SIP) and SEZ projects – increasingly reflected in eThekwini municipal plans - have proposed major industrial and logistics developments on the western, southern and northern extremities as well as substantial re-organisation of the South Durban Basin area to make way for a possible new 'dig-out' port on the old Durban International Airport site.

[5] The geographic space is referred to as Durban, Greater Durban or eThekwini Municipal Area, whilst the local government structure is the eThekwini Metropolitan Municipality or the eThekwini Municipality

Map 1. Industrial land in eThekwini Municipality 2012 and proposed areas for expansion based on 2013/14 Spatial Development Framework



Source: The Planning Initiative (2013)

Given its strong industrial location Durban has been recently named the country’s ‘industrial hotspot’ (SAPOA, 2015). This label is primarily due to a combination of demand for land associated with the largely imported container and break-bulk cargo moving through the Port of Durban and the associated high rental and land sales prices. Durban is in fact more expensive, on average, in land and property cost terms than other comparative locations in South Africa. The latter is, in turn, reported by experts to be influenced not just by high levels of demand, but also by supply considerations such as insufficient flat land and related high cost of developing the land. Furthermore, limited infrastructure development in recent years in the wider region (such as in the Msunduzi Municipality, encompassing the city of Pietermaritzburg) has also placed high demand on eThekwini for industrial land. The surrounding municipalities have lacked the resources required to significantly develop the infrastructure offerings needed for industrial land.

For much of the period since the 2008 recession manufacturing has showed rather disappointing growth rates across South Africa that have negatively affected the uptake of industrial land and caused a slow-down in the development of industrial estates. However, despite these national conditions, Durban has experienced a steady increase in industrial land prices and rentals over the last decade with some locations being amongst the most expensive in the country – e.g. more than R10 million per hectare in the Riverhorse Valley Business Estate (eThekwini Municipality, 2013). Other new or planned developments such as the ‘dig-out’ port have, in some areas, also led to speculations about an increase of land prices – e.g. in South Durban

(Isipingo Rail) the prices for factories increased from R600/m^2 in 2011 to 1,236/m^2 – 1.986/m^2 in 2014.

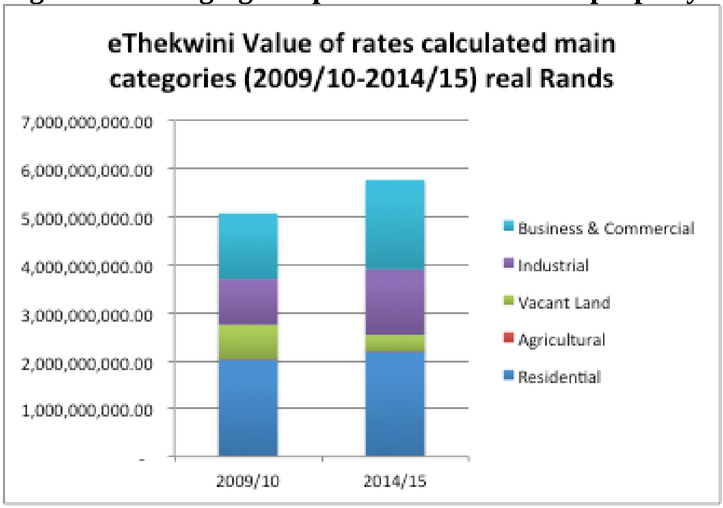
Overall, nominal growth in land value across eThekwini between 2006 and 2013 was estimated at 191%. Areas such as Sea Cow Lake and Springfield Park have been amongst the locations with the steepest increase in land values (in R/m^2). Land value in Sea Cow Lake, for example, rose from R300/m^2 in 2006 to R1,500/m^2 in 2013. In terms of rentals Cato Ridge experienced a 114% increase from R15-20/m^2 in 2006 to R35-40/m^2 in 2013. Riverhorse Valley Business Estate did not show steep increases but is one of the most expensive locations with rentals between R55/m^2 and R65/m^2 (The Planning Initiative, 2013).

In comparison, cities like Johannesburg have experienced a rather slow growth and even some decline in industrial rentals recently. Currently rentals for prime maxi units are on average at R50/m^2 and midi units at R47/m^2 (Jones Lang Lasalle IP, 2014). Rental rates for pioneer (e.g. new, state-of-the-art) developments in Durban in 2013 were at R60/m^2 compared to R42/m^2 in Port Elizabeth, R46/m^2 in the Cape Peninsula and R59/m^2 in the Central Witwatersrand (Rode & Associates, 2013: 61). In reporting on industrial development trends in South Africa the consultancy Jones Lang Lasalle indicated that developers had to meet the following criteria: location close to road networks connected with major freeways; large site/yard sizes for vehicle parking and possible site reconfiguration; yards accessible from local road network with infrastructure in estates to accommodate freight vehicles; excellent safety and security arrangements; larger maxi unit/structures which are preferred in support of warehousing/distribution activities (Jones Lang Lasalle, 2016: page not numbered).

Although the bulk of growth for industrial land in eThekwini has been accommodated through greenfield projects or development of vacant sites in existing zoned areas, there has also been some re-development in older industrial estates. This has taken, in some cases, the form of new developers acquiring older facilities and replacing these with newer structures, often oriented to warehousing/distribution. Developments in Umbilo/Congella such as those done by Shree Prop, and the more recent news that JT Ross was intending to redevelop the large Dunlop Tyre factory site, suggest that the high land prices already noted are driving some re-development. In other areas existing firms involved in manufacturing have also sought to expand their foot-print by buying adjacent or nearby properties (such as in Jacobs or in New Germany) but have encountered many challenges with consolidating properties (even when adjacent). In a handful of cases former industrial stands have been re-developed into multi-tenant industrial parks. Similar processes have taken place in other established industrial areas around the city and this is a source of demand in newer industrial parks as well as in stand-alone mini-parks around the city. Although a clear case of this is with the former Frame Textiles premises in New Germany which now home around a dozen firms, covering manufacturing, services and logistics, similar developments have emerged in Jacobs, Mobeni, Springfield Park and Mahogany Ridge to name a few. Developers of these sites have been eagerly lobbying the municipality to invest alongside them in re-developing these areas.

In analysing the recent developments, it is important to recognize that eThekwini is also the most expensive location in terms of property rates for industrial land. The South African Property Owner Association (SAPOA) states that for the fiscal year 2014/2015, the Municipality charged the highest level of commercial property rates of 3.053 cents per Rand of the official valuation of land and property. Other Municipalities such as City of Johannesburg charge 1.73 cents in the rand in comparison (eProperty News, 2015). The city has seen its industrial share of total rates income grow in recent years due to the high rates charged as well as to the development of significant new portions of industrial land. Figure 2 shows the total rateable property valuations in nominal Rands for 2009/10 and for 2014/15 for the main categories of properties. Of the total value of rateable property in the Municipality the share of industrial land has increased.

Figure 2. Changing composition of eThekwini property rates



Source: Authors' own calculations of eThekwini Metropolitan Municipality rates revenue data.

The eThekwini Municipality has been by no means a mere observer of the transformation of the industrial space. In fact, it has been an active co-planner, facilitator, infrastructure provider and even joint venture partner in the development of new industrial land in the expanding administrative areas falling under their control. But separately, rising pressure to approve new industrial land zonings and re-zonings has been something the Municipality has struggled with in terms of its infrastructure and spatial planning (Sutherland *et al*., 2015). This did cause the Municipality to launch a variety of studies (e.g. that produced by The Planning Initiative, 2013) to try and understand the optimal location of new industrial developments and to assess the appropriate sequencing of the release of land. These studies were also used to try and better gauge the character of market demand.

What is notable from the research driven by the Municipality is the fact that its primary focus is with the identification of future development nodes, not fundamentally the factors that could affect this demand through the better management of existing industrial areas. Some of the municipality's regional spatial development frameworks (SDFs) did raise the state of these more mature industrial areas and make some recommendation as to their consolidation but the SDFs have tended to guide greenfield land choices more than offering much in the way of policy guidance on already built up areas.

Interestingly, in a context where the municipality in its own documents asserts its role as a director influencer actor in development outcomes, the approach towards older industrial areas has been largely a *laissez faire* one where market forces have been expected to determine outcomes whilst the activist state has been more directed to new development. Officials also note that this has been heavily influenced by political concerns from the city leadership that development be extended to the furthest reaches of the municipal land area rather than those areas that had are perceived to have been historically advantaged in one way or another (Interview with senior planning staff). This would explain in part why, despite Dianne Scott's noting of persistent interest in re-industrialising the South Durban Basin area, actual projects have been slow to become anything more than "abstract blueprint plans" (Scott, 2003: 238).

The complexities of some of the processes at play in Durban are discussed by Robbins and Velia (2013) as well as Hannan and Sutherland (2015) in discussions of subsequent planning efforts such as those related to the new King Shaka International Airport/Dube TradePort and the Port of Durban respectively. Real estate developers dealing with land and property, and those managing firms in more mature industrial estates, have also noted a high degree of inconsistency in how multiple layers of plans are in fact interpreted by officials in numerous different municipal departments (Firm and real estate actor interviews). Examples were cited of approvals of demolition of older factories to be replaced by congestion-aggravating logistics warehouses in the Congella area (close to the Port) which is also intended to be re-developed for higher density housing to support the high priority public transport network plans of the municipality. Thus, although manufacturing remains important to eThekwini in its strategic plans and as reflected in some of its economic development programmes, this has not been matched with much in the way of clarity around what this might mean for areas that remain host to the bulk of the city's manufacturing businesses.

4.3. The present conditions experienced by firms in eThekwini industrial estates

The bulk of manufacturing firms in the eThekwini Metropolitan Municipality are located in older, established industrial estates, with some estimates suggesting these accommodate around 70% of manufacturing employment (Durban Chamber of Commerce and Industry senior official interview). The bulk of these estates, developed from the post- World War II era through to the early 1990s, are suffering some measure of urban decay and infrastructure maintenance and service neglect. This has been due to changing use patterns as well as to the generally poor public sector attitudes to investing in these spaces, both in terms of infrastructure and in terms of urban management and maintenance. In some cases the infrastructure has been rendered partially obsolete or was developed with insufficient attention to the required standards, especially in areas outside of what might have been the original Durban Corporation prior to 1994. In fact very few of these areas have any specific local institutional arrangements to attend to both, urban management issues and to specific firm needs (such as training institutes). And the municipality itself has no officials dedicated to the service and strategy issues associated with these areas since the all too fleeting Area Based-Management (ABM) experiments of the early 2000s.

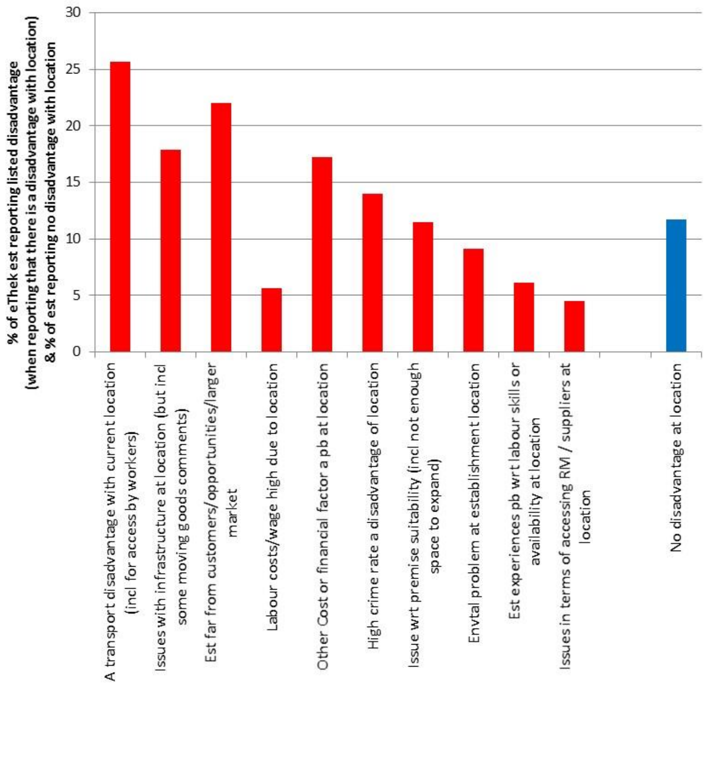
Estates that have been developed in the last decade have tended to be mixed-use and more often provide a home to service-type businesses with an industrial flavor such as: warehousing and distribution; construction equipment supply and servicing; packaging and printing; depots for service sectors in security, transport machinery, equipment repairs/maintenance; business services needing cheaper premises (e.g. call centres); wholesale and some larger-scale retail. Some manufacturing that has located in these newer mixed-use estates would include electronics assembly, pharmaceuticals, firms producing items for the fast moving consumer goods sector and a variety of light manufacturing activities such as plastic injection moulding. Bar the in-progress development of the Dube TradePort (DTP) SEZ, none of the newer estates have any highly specific infrastructure or service packages (such as the IT and air-cargo platforms at DTP), although a number do have some type of lot-owners or area management structure that provides assorted levy-based services in public space such as cleaning, landscaping and some security.

Despite the relative importance of the firms located in these older and newer areas, there is in fact not much in the way of evidence on their experiences of operating in these spaces. Drawing from discussions with real estate actors and property values, it can be noted that average rental and sale prices for newly developed factory/warehouse units in larger scale greenfield developments tend to command higher prices than those in the older industrial estates, although the combinations of larger flat land sites with good located in proximity to the port and infrastructure (such as the South Durban Waste Water Treatment facility) has still seen some high prices paid for well-located older sites. Those working as property brokers in the commercial and industrial land and property sector note that perceptions of many of the older industrial estates tend to be very negative however with issues of high crime levels, urban decay, congestion and the absence of appropriate management and regulation at play in these areas. Newer industrial locations are seen, in contrast, as having less of these problems although they also present challenges in terms of available infrastructure (e.g. for handling high power demand or effluent) and a lack of proximity to management and/or workers.

Drawing on both the 2013/14 Medium and Large Manufacturing Firms in eThekwini Survey (Robbins *et al.*, 2016**a**) and subsequent stakeholder interviews, firms noted that the most prominent advantage of eThekwini was that related to the transportation of goods. This is not surprising considering the presence of the Port of Durban and the fact that the overwhelming bulk of firms participate in some trading activities (importing, exporting or both). In fact just over 50% of all firms reported that general transport advantages of Durban contributed to a notable advantage for the eThekwini Municipal Area as a location. A little over 30% of firms noted that their location in eThekwini had advantages arising from the availability of labour and/or of some skills. Slightly over 10% of firms reported that the specific site and/or premises of the establishment provide an advantage in that it suited their specific production and strategy needs. These are also factors noted in focus groups with firms and in discussions with real estate experts.

The advantages listed above are important to consider as they continue to influence patterns of industrial land demand in the city and the persistence of firms in older industrial areas. However, it should be noted that these few advantages are, from the perspective of the work of Michael Porter (1990), quite basic (or not advanced factors); they can be replicated in many other locations in the world. Advanced factors, on the other hand, talk more to specific patterns of inter firm interactions, patterns of innovation, a presence of high quality supporting institutions and a matching skills profile. These factors are much less easy to fully replicate in other locations.

Figure 3. Main disadvantages of eThekwini/Durban as a location (% of medium and large manufacturing establishments reporting an issue excluding % reporting no disadvantage at location)



Source: Authors' own analysis of eThekwini Medium and Large Manufacturing Firm Survey data (see Robbins & Velia, 2016).

In terms of local (eThekwini) disadvantages, as set out in Figure 3, over one quarter of firms indicated that they had concerns around transport suggesting that generalized advantages around proximity to the port and the like did not always translate into transport advantages in specific locations. Furthermore, over 20% of firms noted that their distance from customers was a major disadvantage, with eThekwini and KZN having some market size limitations when compared to the per capita incomes of cities in Gauteng and Cape Town, let alone customers elsewhere in the globe. Firms also reported issues related to costs of operating at their locations (above 15%) and matters of crime (almost 15%). Suitability of premises was also raised as a constraint by 11.5% of establishments. In looking at qualitative responses from surveyed firms it can be noted that they generally felt very strongly about the absence of high quality production environments under circumstances where they felt they were paying high property rates.

Although the survey was not designed to be representative of industrial estates in the eThekwini area, it is notable that firms raised different concerns across different regions of the city. Those firms located in the more peripheral northern, southern and western areas of the city (a minority of manufacturing firms in total and a minority in the survey) – often, although not always, based in newer industrial estates, expressed major concerns around access to skills, infrastructure and around crime matters. This would suggest that, at least in some or the more peripheral areas the development of new industrial estates or neglected older peripheral estates, can also present firms with problems that many people often associate largely with more central estates. This could suggest that the peripheral development, while perhaps meeting a form of market demand, in fact places further stress on public institutions already struggling to meet the intensity of demands from the more central areas.

Firms were also asked to specify what they considered to be areas for further progress that are still required from the Municipality and from national government. While the responses showed that there were overlaps, the perceptions are useful as considerations for local and national action around industrial policy matters. Three areas of intervention for which further progress is required stand out at the national level: 1) addressing the high cost of utilities; 2) promoting an efficient skills development system (e.g. as managed by the Sector Education and Training Authorities (SETAs) for the relevant manufacturing sectors); and, 3) *maintaining* infrastructure. In the case of the Municipality, *maintenance of existing infrastructure* is set out as the highest area for further progress at the local level by respondents, with almost seven in every ten firms reporting on the extreme importance of maintenance compared to less than one in every five reporting on new infrastructure. Sector-specific support is mentioned as an area for which further progress is extremely importantly by almost 40% of establishments. This would suggest that firms are looking for some more specialised responses in some clusters/sectors.

Also of concern is that almost 7% of establishments - of the few firms that had tried to interact with the Municipality - felt that they could not communicate the importance of the problems faced to staff in eThekwini. A variety of comments were made on this, including responses such as: "it is very difficult to get the queries across [to eThekwini Municipality staff] – you end up paying people to get through to the Municipality"; "we are not sure if the requests are followed through"; the problem "is one of facelessness"; "turnover of staff [at the Municipality] means that there is no one to deal with consistently that can be identified", etc. Separately, around 6% of establishments reported lack of knowledge or expertise by the staff at the Municipality with whom they had to interact for their queries. On a positive note, 20% of firms had a good experience when placing a business query to staff at the Municipality. On the other extreme, one fourth of high-level respondents in the firms surveyed had no direct dealings with anyone in the Municipality.

Informed by these findings it can be observed that attending to issues in, and near, locations where firms operate, is of importance to firms. This should thus also be considered by various levels of state actors. Firms articulate these issues not just as a 'hassle factor' but as impacting on their prospects to growing both output and employment. Attending to the variety of issues goes well beyond the physical upgrade moreover. A total business environment approach would be appropriate, to include factors such as area maintenance and infrastructure upgrades as well as other matters such as sector development, skills and crime.

5. Some key policy considerations

> There is no doubt that businesses and the private sector are key to enhancing the economic competitiveness of urban areas. However, markets by themselves are unlikely to provide the two ingredients most needed for higher urban performance — density and connectivity — to support clusters of firms and to more efficiently connect workers with firms. (Lall, 2016)

These words by a senior World Bank advisor to the South African government point to a view that South African cities have neglected places of work, particular those often associated with production activities, in their planning and investment choices. While treatment of these industrial estates varies substantially across South African cities, they tend, more often than not, to be very low down on the list of priorities. Exceptions tend to be with new high profile greenfield projects or those associated with some largesse from the Department of Trade and Industry – again frequently greenfield projects. Before considering some of the domestic policy options, that have emerged to respond to these challenges, it is worth briefly looking at some international experience.

5.1 International experience

The challenges being faced with existing industrial areas in eThekwini are not unique to South Africa. In many northern hemisphere countries the shift to a greater service driven economic models has rendered many older industrial areas obsolete for their original purpose. It has thus not been uncommon in Europe or in North America for there to be a focus on repurposing these areas for other uses, or on updating these areas for contemporary industrial needs. With regard to the latter efforts have involved infrastructure and services refits, general urban upgrades and facilitating the re-development of a stock of older properties to make it suitable for present day industrial needs. The provision of some form of area incentive has been particularly common in the USA, whilst in Europe the efforts have been mainly around infrastructure investments and specialised institutional arrangements.

Commercial and/or industrial estates divisions are a common feature in many city councils in industrialised countries. These councils have a dedicated focus on working with those running businesses in industrial areas to maintain these areas and, if need be, improve them. Regulatory innovations have also been important as businesses operating in global value chains need particular conditions that would not have been in place a decade or two ago. These innovations could include the setting up of particular links with specialist skills institutions; or deploying mechanisms/institutions to ensure that all present in certain areas contribute to creating optimal business conditions. The latter can be unlocked by participating in local area associations or through finding deeper opportunities for collaboration around industrial clusters and the like.

There has been a wide range of responses in the more industrialised developing countries. These countries have displayed a tendency to enable greenfield growth as the prime focus of industrial land development. Nevertheless, there has been a range of innovations in how to deal with established industrial estates. In many countries special zones have been operating for thirty years or more. These zones, which in numerous instances operate as export processing zones, have generally been run by special agencies that take full responsibility for the quality of the local industrial estates and also get irregular injections of new capital investment for infrastructure refits when needed. In areas where particular constraints exist that reduce prospects for greenfield development, efforts have been made to work with older industrial areas, either for re-development into other uses or to enable them to meet modern day requirements. However, World Bank experts have noted that an excessive focus on greenfield and special zone projects often comes at a cost to existing local productive capacity. A balanced approach is proposed accordingly (Farole, 2011).

The changing character of manufacturing and general industrial activities remains a major challenge to local authorities. Not only do firms change their products and the processes needed in order to make such products, they are also prone to change the relationships they have with suppliers and customers. As a consequence firms demand spaces where there is a degree of flexibility and innovation in planning and administration. They can also demand connectivity within the host cities and between their location and other cities around the world. Globally competition for these businesses is growing all the time and therefore locations where firms invest have to meet higher and higher standards to guarantee the investment.

It is also worth noting that location issues for manufacturing production have also featured in many national industrial policy frameworks. In this regard it is not uncommon for such frameworks to pay particular attention to how national states can work with other stakeholders to support the delivery of the appropriate urban spaces that allow firms to expand existing production and employment and also support the introduction of new investors. Such approaches require a greater sensitivity to differentiated economic spaces in national policy and an appreciation of how important these apparently parochial issues can be to firms, the clusters in which they operate and their relationship to domestic and global value chains.

Efforts to improve industrial estates, and thereby improve the prospects of firms operating in them, have included a wide range of instruments that have been deployed at the local, regional and national level. Table 2 proposes a way of thinking about these possible fields of activity in terms of the varied resource and institutional capabilities that might be needed to support them.

Table 2. Policy instruments for industrial area upgrading and development

<table>
<tr><th>High institutional complexity, lower resource costs</th><th>Higher resource costs, higher institutional complexity</th></tr>
<tr><td>
Formation of local area partnerships (around issues such as waste, skills etc.)
Facilitation of local project collaboration between private and public actors.
Regular reporting on quality and functionality of key industrial areas and information provision.
Urban planning reviews and amendments.
Regulatory reviews and amendments.
Heritage development linked to tourism and education (factory museums, science and technology centres etc.)
Interaction with sectoral/cluster type programmes.
</td><td>
Creation of industrial (and commercial?) estates division in the Municipality (hub for services, knowledge, renewal and facilitation of local action plans).
Special levies to enhance area management and services.
Dedicated area management and services.
Supporting new institutional formation (skills, technology etc.)
Collaborative area re-design and re-development (including things such as improved lighting for night workers and better pavements or public transport infrastructure facilities alongside natural areas, improving area legibility, signage).
Reduction in business operating costs/commitment to better services in exchange for operating costs.
Special status (IDZ or SEZ).
</td></tr>
</table>

Low institutional complexity, lower resource costs	**Higher resource costs, lower institutional complexity**
• Local area campaigns around a host of issues (productivity, health, safety, public education etc.). • Special municipal cleanups. • Support to local area organisations performing a range of tasks (e.g. local area environment committee or local area anti-crime forum). • Area marketing, branding identity.	• Capital infrastructure upgrades. • Dedicated and regular area maintenance efforts. • Basic area legibility, signage, urban design improvements.

Source: Authors' own research.

5.2. Some policy considerations for eThekwini and South Africa

If actors in South Africa's context are indeed interested in promoting urban development models that support creating economic opportunity whilst avoid excessive negative impacts of urban sprawl, then a more assertive approach to the diversity of industrial spaces in cities is essential. All too often local government, even in larger cities, tends to wait for national signals – and funding – before acting on matters. This has certainly been true on the matter of industrial estates, where the absence of concern on these matters in national industrial policy as well as in local government policy – through the local government department and national treasury – has been notable. Even in recent urban policy formulations such the Integrated Urban Development Framework (Department of Cooperative Governance and Traditional Affairs, 2016) and, prior to that, the National Development Plan (National Planning Commission, 2012), there is little-to-no mention of the specific role and approach to industrial land in the country beyond some platitudes about more effective use of well-located land and promoting of more integrated outcomes.

If the country is serious about economic growth and job creation, then some clearer articulation of the local potential in better supporting national policy outcomes is going to be essential. Poorly maintained industrial areas impact on private investment and generate higher costs for business in a context where economic activities are already constrained. All too often national actors revert to issues of national priority projects such as SEZs or emerging Department of Trade and Industry (**the dti**) programmes on former homeland industrialization nodes as evidence of concern around these matters. These might well serve an important role in national policy, but they do little to talk to the experiences of the overwhelming bulk of manufacturing businesses located in industrial estates that have been in decline for some decades. Even if national actors consider these matters overly parochial, they have a role to better signal what is needed from local actors to help generate a better business environment for manufacturing firms.

It is undoubtedly true that many of the levers for more efficient and productive industrial areas in the country's cities are in fact levers that local governments – especially metropolitan local government – have some considerable direct influence over. Standing by while market forces, or perhaps more accurately the forces of urban decay (which are a combination of market, state and social factors) undermine the prospects of economic growth in more mature industrial estates is something that will, in the medium to longer term, contribute to less efficient and less productive cities. Whilst some might see this as only a matter of private costs in terms of losses incurred by firms or property owners, it is often a set of costs that carries social manifestations such as those impacts arising from the loss of jobs, loss of public revenue, loss of effective use of space and additional costs that come from urban maintenance and management decline such as infrastructure failures and societal costs borne by a lack of care for the commons.

Planning frameworks that intentionally or unintentionally facilitate more and more peripheral growth of industrial spaces whilst neglecting older industrial estates are likely to contribute to rising unemployment and other economic losses. An excessive focus on greenfield development draw out businesses from the core where they are more accessible to workers. Such focus also raises the costs of running the city as the neglect of older areas costs in terms of property tax income and in terms of attending to the social and economic costs of decline. These costs might appear insignificant when faced with the attraction of a major new development, but they add up over time with a preponderance of industrial land that is either showing low occupancies or new land that is encountering the pressures of a city system that is continuously stretched to the periphery.

In eThekwini, uncertainty about the prospects of the manufacturing sector combined with pressure to respond to proposals by developers has left the municipality with little appetite to attend to the needs of older industrial estates. Although programmes such as BR&E have a role to play, they are inclined to explore what local businesses can do without additional efforts from local government. This approach has its limitations, as ultimately, local government choices about where to invest its urban management, maintenance and infrastructure resources will impact on the firms that operate from these spaces. Amin (2005) cautions against an approach in which communities that fail to organise themselves and take local autonomous actions are sidelined as a lower priority, pointing out that the continued absence of an effective state presence can destroy the kind of social capital that these self-reliance responses might require. Furthermore, since eThekwini has high property taxes for industrial land, a strong case exists for the municipality to not only consider the redistributive potential of this income, but also the re-investment in industrial spaces required to guarantee future sustainable income.[6]

Through efforts such as the BR& exercises and some past experience with ABM there are eThekwini municipal officials, and perhaps some political, civil society and business leaders, who appreciate the importance of these spaces in the wider city context. However, more needs to be done to make these erratic efforts transition to a more programmatic response to management and development (including re-development where appropriate) of the industrial spaces that are home to most of Durban’s small, medium and large manufacturing businesses. In some cases the costs of sprawl have already seen property development firms redirect their attention to selected sites in older industrial areas. However, without a more coherent framework on optimising production activities and meeting the needs of present and future firms in these areas, these efforts might in fact generate new sets of problems such as those where inadequate infrastructure has suffered from the combined impact from multiple isolated land-use changes, both formal and informal. A more informed response is unlikely to succeed without a degree of investment commitments from the municipality, in terms of expertise, new partnerships and capital and operating spending. Of course new commitments, after years of neglect, are unlikely to generate an immediate change in the prospects of firms. But they can contribute in the longer run to a more competitive and sustainable outcome for the city and these firms that are so important in creating employment.

The called for attention, is by no means an argument that older industrial areas should not change their character over time or that a transition to an entirely different use is not, in some cases, appropriate. However, the case being made here is that while these areas remain host to the majority of manufacturing firms, the local and national state should take a particular interest in the quality of the business environment. This might require, in some instances, consolidation *and* change as making these spaces relevant to contemporary business contexts is likely to require changes in infrastructure, land use schemes, by-laws and services. In appropriate circumstances the relationship between these areas and surrounding land uses – whether they be natural systems, residential or serving another purpose (for example port services) – also

[6] This income can then be re-invested in creating higher quality spaces for firms and those who work in them.

needs a changed approach that avoids the excessive functionalism and instrumentalist choices that often that guided past choices.

To date the threat to land uses associated with manufacturing has largely been in terms of decay and decline for older estates as well as in terms of costs and infrastructure matters. However, there is also a growing threat arising from a growing range of non-manufacturing type uses that have taken advantage of vacant spaces for both approved (such as warehousing, truck depots) and non-approved uses (such as informal residential, truck depots). These can have the effect of crowding-out more specialist higher order uses and reduce the available stock of well located specialist industrial land should new investors or expanding firms require sites. Thus some efforts at more active preservation of industrial land in certain spaces could in fact be a key element to attract new generation manufacturing investment to the city. Any such policy would also require particular efforts to craft further spatial advantages such as those related to specialist skill institutes and the like.

Much industrial research in the past few decades has in fact shown that forms of intensity of activity and proximity are very important factors in helping firms harness the potential of agglomeration to support their competitiveness (Lester *et al*., 2013). However, "if cities do not maintain viable clusters of manufacturing firms and related industrial businesses, critical agglomerative forces may be eroded, further undermining the chances of manufacturing's return." (Lester *et al.*, 2013: 302) Allowing the decline of well-located older estates, or simply leaving their prospects up to some unpredictable combination of market and social forces, is likely to generate outcomes that will not be good for firms or for those land-uses (and the people and natural systems that occupy them) near these estates. Decanting industrial activity to peripheral estates, while justifiable under some circumstances, is also unlikely to promote the kinds of "agglomerative forces" discussed above that are so important in sustaining competitiveness, particular for smaller and medium firms that are less well networked into globalized business arrangements. For this reason:

> … plans and planners have to identify strategic industries for the region, craft land use policies that take into account the needs of each industry, and look for ways to meld alternative uses together with industrial ones. Furthermore, any provisioning of public infrastructure such as multimodal facilities and transportation investments should be strategically coordinated with industry locations. (Lester *et al.*, 2013: 305)

Bibliography

Amin, A. 2005. Local community on trial. In *Economy and Society*, 34(4): 612-633.

Becattini, G. 1991. Italian Industrial Districts: Problems and Perspectives. In *International Studies of Management & Organization*, 21(1): 83-90

Brenner, N. 2004. *New State Spaces: Urban Governance and the Rescaling of Statehood*. Oxford University Press: Oxford.

Department of Cooperative Government and Traditional Affairs (South Africa). 2016. *Integrated Urban Development Framework*. Accessed from http://www.cogta.gov.za/?attachment_id=229 12 October 2016.

eProperty News. 2015. eProperty News. Accessed from http://www.eprop.co.za on 02 June 2015.

eThekwini Municipality Strategic Planning Resources. No date. Riverhorse Valley Socio-Economic Impact Assessment Summary. Accessed from http://www.durban.gov.za/Resource_Centre/edge/Documents/Riverhorse%20Valley%20Business%20Estate%20Study%20Summary%20(Mar%202013).pdf on 25 March 2016.

eThekwini Municipality Strategic Planning Resources. 2012. Riverhorse Valley Socio-Economic Impact Assessment. Accessed from http://www.durban.gov.za/City_Services/Economic_Development/PSIR/Documents/Riverhorse_Valley_Impact_Assessment2012.pdf on 25 March 2016.

eThekwini Municipality, 2013. *Economic Development and Job Creation Strategy*. eThekwini: eThekwini Municipality.

Farole, T. 2011. *Special Economic Zones in Africa: Comparing Performance and Learning from Global Experiences*. Washington, D.C.: The International Bank for Reconstruction and Development/The World Bank.

Gereffi, G., Humphrey, J. and Sturgeon, T. 2005. The governance of global value chains. In *Review of International Political Economy*, 12(1): 78-104.

Geyer, H. 1989. Industrial Development Policy in South Africa - The Past, Present and Future. In *World Development*, 17(3): 379-396.

Hannan, S. & Sutherland, C. 2015. Mega-projects and sustainability in Durban, South Africa: Convergent or divergent agendas? In *Habitat International*, 45: 205-212.

Hart, G. 2002. *Disabling Globalisation: Places of Power in Post-apartheid South Africa*. University of California Press: Berkeley and University of Natal Press: Pietermaritzburg.

Harvey, D. 2002. The Urban Process Under capitalism: A Framework for Analysis. In Bridge, G. & Watson, S. (Eds) *The Blackwell City Reader*. Blackwell Publishing: Oxford, pp. 116-124.

Jacobs, J. 1969. Strategies for Helping Cities. *The American Economic Review*: 652-56.

Jones Lang Lasalle (JLL) IP. 2014. Johannesburg Industrial Market Outlook, 2015. Accessed from http://propertywheel.co.za/wp-content/uploads/2015/11/Johannesburg-Industrial-Market-Overview-Q3-2015.pdf on 26 January 2016

Jones Lang Lasalle (JLL) IP. 2016. Trade trends and the impact on industrial real estate. Accessed from http://www.jll.co.za/south-africa/en-gb/Documents/trade-trends/Trade-trends-and-the-impact-on-industrial-real-estate.pdf on 15 June 2016.

Lall, S. 2016. Geography can be exploited to ensure prosperity for all. *Business Day*, 5 July 2016, Accessed from http://www.bdlive.co.za/opinion/2016/07/05/geography-can-be-exploited-to-ensure-prosperity-for-all on 5 July 2016.

Lester, T.; Kaza, N. & Kirk, S. 2013. Making Room for Manufacturing: Understanding Industrial Land Conversion in Cities. In *Journal of the American Planning Association*, 79(4): 295-313.

Maylam, P. 1990. The Rise and Decline of Urban Apartheid in South Africa. In *African Affairs*, 89(354): 57-84.

National Planning Commission, 2012. *National Development Plan 2030*. Accessed from http://www.npconline.co.za/pebble.asp?relid=25 on 12 June 2013.

North, D. 1990. *Institutions, Institutional Change and Economic Performance*. Cambridge University Press: Cambridge.
Parnell, S. & Mabin, A. 1995. Rethinking Urban South Africa. In *Journal of Southern African Studies*, Special Issue: Urban Studies and Urban Change in Southern Africa, 21(1): 39-61.
Piore, M.J., & Sabel, C.F. 1984. *The Second Industrial Divide: Possibilities for Prosperity.* New York, NY: Basic Books.
Porter, M.E. 1990. *The Competitive Advantage of Nations*. Free Press, New York.
Porter, M. 1998. Location, Clusters, and the New Microeconomics of Competition. Adam Smith Address was given at the 39th Annual Meeting of National Association of Business Economics, New Orleans, LA, September 14-17, 1997.
Porter, M. 2000. Location, Competition, and Economic Development: Local Clusters in a Global Economy. In *Economic Development Quarterly*, 14(15): 15-34.
Quantec (2015). Regional, Standardised Data, Pretoria, http://www.quantec.co.za/, accessed November 2015.
Ray, D. 1998. "Chapter 2. Economic Development: An Overview", in D. Ray, *Development Economics*. Princeton: Princeton University Press, pp. 7- 46.
Robbins G & Velia M, (2013). Chapter 10: From time definite to time critical? Challenges facing airfreight and port growth in Durban. In Hall, P.V. and Hesse, M. (Eds) *Cities, Regions and Flows*. Routledge: Abingdon.
Robbins, G. & Velia, M. (2016, *forthcoming*). Large & Medium Firms in eThekwini: Constraints to Growth and Employment Generation, Report prepared for the Programme to Support Pro-Poor Policy Development (PSPPD II), South Africa.
Robbins, G.; Velia, M. & Vermaak, C. (2016**a**, *forthcoming*). Large & Medium Firms in eThekwini: Presentation of the Survey and of Key Survey Results, Background Note prepared for the Programme to Support Pro-Poor Policy Development (PSPPD II), South Africa.
Robbins, G., Velia, M., Rogoll, J. & Moyo, C.A. & Diga, K. (2016**b**). Policy Brief 1 - Cities, Industrial Estates and Local Industrial Policy: Exploring the lessons from manufacturing firm and industrial estate research in Durban, South Africa. School of Built Environment and Development Studies, University of KwaZulu-Natal & South African Research Chair Initiative: Applied Poverty Reduction Assessment and the Population. Produced as part of a Programme to Support Pro-Poor Policy Development, European Union and South African Government (Department of Monitoring and Evaluation).
Rode and Associates. 2013 Rode's Report on the South African Property Market, Vol 24. No 2. Accessed from http://www.rode.co.za/RR_2013_2/RRO_2013_2_web_final.pdf on 12 November 2015.
Rode and Associates. 2016. News and research material accessed from www.rode.co.za on 12 February 2016.
Rosenthal, S. & Strange, W. 2004. Evidence on the Nature and Sources of Agglomeration Economies. In Henderson, J. & Thisse, J-F. (Eds), *Handbook of Urban and Regional Economics*, edition 1, volume 4, chapter 49, Elsevier, pp. 2119-2171.
SAPOA (South African Property Owners Association), 2015. Municipal Service Cost Analysis. SAPOA: Sandton.
Schensul, D & Heller, P. 2011. Legacies, Change and Transformation in the Post-Apartheid City: Towards an Urban Sociological Cartography. International Journal of Urban and Regional Research, 35 (1), pages 78-109.
Schmitz, H. 1997. Collective efficiency and increasing returns. Brighton: Institute of Development Studies, University of Sussex..IDS Working Paper, 50. Accessed from https://www.ids.ac.uk/ids/bookshop/wp/wp50.pdf on 12 January 2015.
Scott, A. 2002. Chapter 16. Metropolis: From the Division of Labor to Urban Form. In Bridge, G & Watson, S (Eds). *The Blackwell City Reader*. Blackwell Publishing: Oxford, pp. 135-160.

Scott, D. 2003. 'Creative Destruction': Early Modernist Planning in the South Durban Industrial Zone, South Africa. In *Journal of Southern African Studies*, 29(1): 235-259.
Storper, M. 2010. Why Does a City Grow? Specialisation, Human Capital or Institutions? In *Urban Studies*, 47: 2027-2050.
Sutherland, C.; Sim, V., and Scott, D. 2015. Contested discourses of a mixed-use megaproject: Cornubia, Durban. In *Habitat International,* 45: 185-195.
The Planning Initiative. 2013. Industrial land study and land strategy development - Phase 2: Demand and Supply Side Review: Draft for comment. Conducted for eThekwini Metropolitan Municipality.