DOI:10.1111/1468-2427.12570

— TRANSPORT INFRASTRUCTURE AND LOGISTICS IN THE MAKING OF DUBAI INC.

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Abstract

This article interrogates the political economy of Dubai's Jebel Ali Port, ranked among the top ten container ports internationally by traffic, and its operating conglomerate, Dubai Ports World (DP World). The article aims to situate trade infrastructure in the production of Dubai's economic geography as a sea–air multimodal trading hub. Three interrelated arguments are put forward: that port infrastructure plays an essential role in linking diverse moments of capital accumulation in Dubai; that Dubai's state-owned conglomerates have overseen a substantial internationalization of Dubai's capital through maritime port public–private partnership arrangements; and that the particularities of Dubai's repressive labour regime underpin its role in the logistics industry internationally.

Introduction

Maritime transport continues to be the primary mode of trade in the global economy. According to the Review of Maritime Transport 2016 (UNCTAD, 2016), around 80 per cent of global trade by volume and over 70 per cent of global trade by value are carried by sea and are handled by ports worldwide'. Ports thus form a critical node in a global economy based on internationalized production and ever more complex supply chains. The analysis that follows focuses on Dubai's Jebel Ali Port and its rapidly internationalizing operating company, Dubai Ports World (DP World) as one such critical node, understanding it as a broader element within a global logistics space of networked infrastructure, free trade zones, logistics hubs and trade corridors through which commodities circulate and transform before reaching consumers.

Through substantial investments in transport infrastructure and logistics capabilities, Dubai, one of the semi-autonomous city-states that make up the United Arab Emirates (UAE), has become a major regional trade gateway and a re-export zone for commodities on the Europe/East Asia trade route. The prominent role of Dubai's maritime port and airport operators is entrenched in a key segment of Dubai's Strategic Plan 2021.[1] Although vital to international supply chains, the inconspicuous constant movement of commodities through the city-state's mega transport infrastructure remains largely invisible behind sizeable industrial complexes and is often overshadowed by the glamour of Dubai's more spectacular mega real-estate development projects such as the Burj Khalifa (the world's tallest building) or Palm Jumeirah.

This study interrogates the most prominent features of Dubai's transport infrastructure. Three interrelated arguments are put forward. The first of these is that port infrastructure is a critical enabler of wider processes of capital formation in Dubai, linking apparently disjunctive moments of accumulation across the urban scale. Despite its relative absence in the literature on the political economy of the region, the port provides an essential infrastructural 'glue', tying together accumulation across

 I am grateful to Laleh Khalili, Adam Hanieh and the three anonymous IJURR reviewers for their indispensable comments on earlier drafts of this article. This work was supported by the Economic and Social Research Council grant number ES/L002833/1.

1 The Dubai Strategic Plan 2015 or DSP 2015 was originally launched in 2007 by Sheikh Mohammad bin Rashid Al Maktoum. It was a public strategy document that put forward a 'vision' for the city-state's development. Dubai Plan 2021 (Government of Dubai, n.d.) followed, and its 'The Economy' section describes making Dubai 'A Pivotal Hub in the Global Economy' (see https://www.dubaiplan2021.ae/the-economy/).

sectors such as real estate, trade, construction and retail. Secondly, this linking role is being increasingly internationalized, such that Dubai's port-related conglomerates have substantially expanded their interests overseas through public–private partnerships (PPPs) and acquisitions. Thirdly, the particularities of Dubai's repressive labour regime are a critical factor in these processes, underpinning the emergence of the city-state's core position in the global maritime logistics industry. An understanding of the particular processes of labour management and disciplining mechanisms in Dubai thus helps us to recognize the highly uneven potential for labour contestation across supply chains. Through these three arguments, the article refocuses attention on Dubai's port, providing a lens through which we may view capital accumulation across domestic and global scales.

Recent literature on Dubai has focused on its transition to a 'global city', its neoliberal model of urban development and its economic diversification plans (Davis, 2006b; Davidson, 2008; Elsheshtawy, 2008; Kanna, 2011; Buckley and Hanieh, 2014). An important and rich historical literature has also traced the impact of British colonial policies on the emirate's development trajectory and analysed relations between its merchant class and the ruling Al Maktoum family ('Abd Allāh, 1978; Zahlan, 1978; Heard-Bey, 1982; Peck, 1986; Naqīb, 1990; Al-Sayegh, 1998). These accounts help us understand Dubai's history and the nuances of its political economy beyond the modern manufactured 'brand' of an emblematic success story of a liberalized economy with expansive high-rises and mega shopping malls (Bagaeen, 2007; Acuto, 2010). In particular, recent critical political economy literature illustrates patterns of capitalist class formation in Dubai, including the essential role of a state–capital nexus in promoting the internationalization of Emirati capital, thereby nurturing a range of large business conglomerates (both state and privately owned) that span different economic activities. This analytical emphasis on the relationship between the state, domestic capital groups and internationalization thus brings to the fore the power relations that underlie Dubai's political economy beyond simplistic accounts of ruling family actions and 'visions'.

Yet within the literature on Dubai, only a few studies have addressed the impact of port infrastructure and logistics on wider patterns of capital accumulation (Jacobs and Hall, 2007; Keshavarzian, 2010; Ramos, 2010; Akhavan, 2017). This article aims to contribute to this scant literature by tracing the impact of Dubai's state-owned conglomerates and labour regime on the emergence of the city as a global trade hub. As a major, yet under-investigated, node in global circulation networks, the operations of Dubai's transport conglomerates and mega infrastructure are particularly salient because they are projected as a model to aspire to, one whose key features are being replicated internationally. For example, the concept of a logistics city, a space dedicated entirely to logistics, was a Dubai innovation (Cowen, 2014). Indeed, in the wake of the 2008 financial crisis, it was argued that 'key elements of the Dubai model—especially the combination of First World infrastructure, an accommodating business climate, and low-cost labour—would likely survive the current crisis in Dubai and among its better capitalized neighbors' (Herb, 2009: 379). As this study illustrates, not only did the model survive, but aspects of it, especially trade and logistics, came to be seen as 'core functions' that are less likely to be affected by financial crises than real estate (Bloch, 2010).

The two background sections that follow provide, first, a brief literature review of the changes in the global maritime trade industry and the particular role of maritime ports within this, and secondly, an account of the early development of trade and port infrastructure in Dubai. This background provides the basis for the core arguments of this article, which examine three aspects of Dubai's contemporary trade infrastructure: patterns of ownership and capital accumulation around Dubai's port infrastructure; the international expansion of DP World and the emirate's prominence in global logistics networks; and the specific labour regime that underpins these processes. The research for this article was mainly conducted in Dubai between 2014 and 2016. It encompassed visits to Jebel Ali Free Zone (Jafza); Dubai Airport Cargo & Logistics City and Dubai

World Central, as well as visits to two labour camps and attendance of two regional cargo trade shows. It also included semi-structured interviews with regional managers at DP World and Jafza. The interviews supplement my analysis of Arabic and English construction, transport and logistics trade literature, as well as trade data from Dubai Customs, the Dubai Statistics Center and relevant reports published by the United Nations Conference on Trade and Development (UNCTAD).

Ports: critical nodes in logistical systems

As Cowen (2010: 601) perceptively notes, 'without the rapid and reliable movement of stuff through space—from factories in China to US big box stores, for instance—cheap labour in the global South cannot be "efficiently" exploited, and globalized production systems become as inefficient economically as they are environmentally'. Thus, business logistics is concerned with managing international supply chains from start of production, sourcing, processing, transport to final distribution, conceiving of constant circulation flows through an integrated logistics network. Very schematically, a maritime logistics chain would involve maritime shipping activities, logistics activities at the port, such as warehousing and packaging, and finally connectivity to other modes of transport. The bulk of global trade in manufactured commodities is carried on container ships, while bulk carriers transport raw materials such as iron ore and coal, and tankers transport crude oil, chemicals and petroleum products (Dubai's Jebel Ali Port has terminals for all three types). Some authors argue that business logistics has essentially collapsed production and distribution into one integrated unit that is mapped onto an internationally networked logistics space of infrastructures, trade gateways, corridors and logistics clusters (Bonacich and Wilson, 2008; Martin, 2012; Cowen, 2014). Maritime ports are thus critical nodes within this integrated logistics space—one shaped by technological shifts in maritime trade, complex supply chains and a global division of labour.

Significant technological innovations in the 1960s and 1970s were decisive in the development of maritime logistics, as well as the overall social and spatial formation of seaborne trade and maritime ports. As Sekula and Burch (2011, n.p.n.) aptly put it, 'without a "revolution" in ocean-going cargo-handling technology, the global factory would not exist, nor the phenomenon of globalization itself'. For example, the development of information technology assisted with tracking commodities in circulation, communication across firms and shaping the complex logistics systems modelling software necessary for managing production and distribution on an international scale. Containerization, in turn, was crucial for the standardization of circulation through multiple modes of transport (from port to rail, ship, truck, air—i.e. intermodalism), reducing the time and labour involved in transporting commodities (Levinson, 2008; Notteboom and Rodrigue, 2009).

Containerization increased the automation of ports as a result of mechanized handling of standard-size boxes and had a significant impact on ship size and port design. From 1980 to 2015 seaborne container trade increased by 1,500%, with container ship size doubling and mega ports emerging to accommodate the change.[2] Mega ports offered automated terminal facilities and inland services, including warehousing, logistics cities access, inland distributions routes and connections to airports that facilitate circulation. Ports became integrated into in a new environment of complete supply chain management, logistical networks, international sourcing of products and intermodalism. This changed the very spatial relationship between ports and urban centres. In contrast to historical ports, which are integrated with the surrounding communities, new mega ports were conceived as gated industrial complexes isolated from city centres, allowing for logistical capacities and connection to other modes of transport.

2 Figure calculated by author based on the UNCTAD Review of Maritime Transport 2016

Along with such shifts, overarching neoliberal economic trends have shaped the maritime industry, including increasing privatization of port assets through PPPs to secure funding for mega port construction (Roumboutsos, 2015), increasing financialization of maritime trade (Rodrigue *et al*., 2011), and critically, emerging concentrations across the industry. For example, there was a definitive shift towards privately owned global terminal operators, with a handful of corporations controlling significant international portfolios—these include DP World (Notteboom and Rodrigue, 2012). As the rest of this article illustrates, Dubai's Jebel Ali Port and DP World exemplify these overarching trends in the maritime trade industry.

Dubai's port infrastructure—the early beginnings

Dubai has grown considerably over the past 50 years to become a global transhipment hub. From its historical position as a fishing and pearling settlement around a creek, maritime trade has been central to Dubai's character and the emergence of a merchant class historically connected to the Indian Ocean economy. Dubai is situated about 230 km southwest of the Strait of Hormuz and has a population of almost two and a half million (the majority being non-citizens). Much like the rest of the Gulf region, Dubai's political structures are based on the hereditary rule of one family, the Al Maktoum family, part of the Bani Yas tribe. This structure was cemented through the 'trucial system' of 1835, whereby the British centralized power with allied sheikhs (Heard-Bey, 1982; Peck, 1986). The current ruler, Sheikh Mohammad, governs through an appointed consultative executive council made up of close allies representing traditionally influential merchant families.

Dubai became particularly important to British colonialism from the early 1900s after the cancellation of British leasing and tax rights in the port of Lingah (Davidson, 2008). Seizing the opportunity, then ruler Maktoum bin Hashar attracted merchants from Lingah by offering cheap land and minimal taxation (Heard-Bey, 1982). Dubai became the port of call for the British India Steam Navigation Company. This, in turn, affected the makeup of Dubai's merchant class, attracting more Persian and Indian traders, who were incorporated into Dubai's society (Al-Sayegh, 1998). Oil was discovered in Dubai in 1966, but amounts were always meagre compared to those of neighbouring Abu Dhabi. By the time Dubai reached independence in 1971, a 'clear developmental blueprint' had been established based on oil production, emphasizing trade infrastructure and reliance on imported labour from the Asian subcontinent to maintain construction activity (Ramos, 2010: 51–74). This blueprint continued intact under US hegemony in the region.

Because of its small oil reserves, Dubai's ruling family and merchant class were eager to expand the city's position as a trading hub. Its seaports and airport were cornerstones of its development trajectory. Dubai's three ports were built around the time the city-state became independent: Port Rashid in 1967, Port Hamriya in 1975 and, lastly, Jebel Ali in 1979 (Ramos, 2010; Akhavan, 2017). The Land Law of 1960 was critical to the geographical expansion of the ports. With the exception of lands for which nationals demonstrated occupancy for a set time, this law gave ownership of *all* land to the ruling family. Essentially, it was this massive act of land enclosure that enabled infrastructural developments. Within Jebel Ali Port specifically, 'control of all the port land ultimately lies in the hands of the Emir or ruler of Dubai who has gifted the freehold to Dubai Port Authority' (Jacobs and Hall, 2007: 333). Although a detailed analysis of the relationship between Dubai's transport infrastructure and militarism is outside the scope of this article, it is worth noting that Dubai's infrastructure has been intricately connected to its geopolitical positioning. As many authors have explained, control over the region's resources and trade routes has been central to US-dominated capitalism (Vitalis, 2007; Jones, 2010) and securing important shipping lanes along the Strait of Hormuz is central to US policy in the region. It is no coincidence that the Jebel

Ali Port harbour is the US Navy's most-visited port, because it can accommodate the largest aircraft carriers and battleships (Keshavarzian, 2010: 276).

With the ascent of neoliberal economics from the 1980s onwards, including internationalized production and reduction of trade barriers, Dubai transmuted into the regional prototype for the most advanced liberalization and financialization policies (Davis, 2006a; Kanna, 2011). Dubai's ruling family consolidated its power by redirecting oil revenues to their allies within the merchant classes, giving rights to land or jobs in the public sector, which eventually led to the development of domestic conglomerates formed around specific economic sectors (Hanieh, 2015). Efforts to diversify the economy from oil focused on building up the transport and logistics sector, finance and tourism, and creating free trade zone clusters such as Media City (to attract regional media companies to set up headquarters in Dubai). In the contemporary period, a set of state holding companies, often referred to as 'Dubai Inc.', manage various aspects of Dubai's political economy. They are typically controlled directly by members of the ruling family and associated with private conglomerates led by merchants historically closely allied to the ruling family. However, as Hanieh has emphasized, 'Gulf ruling families—while clearly dominating state power—should be viewed as the central, organizing core of the Gulf capitalist class itself, rather than as simply the locus of political power' (Hanieh, 2015: 6). The next section explores the relationship between this state–capital nexus, capital accumulation and logistical infrastructures in more depth.

Capital accumulation and Dubai's contemporary trade infrastructure

Dubai has undergone rapid transformation in terms of its urban landscape over the past two decades, leading to sustained academic interest in the scale and form of its urbanization process, with some labelling it an exceptional model (see Hvidt, 2009; Elsheshtawy, 2010). Others have moved beyond the exceptionalism narrative, situating Dubai within international neoliberal trends and critically tracing the connection between liberalization, urbanization and the emergence of domestic capital groups imbricated in the transition of the built environment (Kanna, 2011; 2013; Buckley and Hanieh, 2014; Hanieh, 2015). In his discussion of Jebel Ali Port specifically, Ramos (2010) has insightfully emphasized the importance of examining the link between trade infrastructure and urbanization. I build on such critical accounts to analyse the impact of logistical infrastructure on urbanization patterns, capital accumulation and class formation in Dubai.

While the port features in academic accounts of Dubai's development, it is often treated as a stagnant backdrop, and not as an essential enabler of capital accumulation among Dubai's domestic capital groups. Capital groups such as Futtaim, Rostamani, Habtoor, Belhasa, Lootah, Al Ghurair and Ghobash, which dominate Dubai's political economy, work in tandem with state-owned holding corporations; these groups are known for their accumulation activities across key sectors, including construction, retail, finance and logistics, all of which are dependent on transport infrastructures. Far from being a backdrop, Dubai's logistical infrastructures bind spaces of transnational and national exchange, essentially functioning as the 'glue' that combines various accumulation activities under the overall framework of Dubai Inc.

The government-owned holding corporations that form Dubai Inc., which, among other things, own and manage the city-state's circulatory infrastructure, include:

- Dubai World, which holds the portfolio for DP World, Drydocks World, Dubai Maritime City, Economic Zones World and Istithmar World;
- Investment Corporation of Dubai (ICD), with holdings in most economic sectors, within transport specifically, is invested in the Emirates airline, dnata (one of the world's largest air service providers), Dubai Aerospace Enterprise (DAE) and budget airline flydubai;

- Dubai Airports Company, which was formed in April 2007 by splitting the Department of Civil Aviation into the Dubai Civil Aviation Authority and Dubai Airports Company; the latter owns, operates and manages airports in Dubai and through its subsidiaries provides warehousing services and a cargo and logistics free trade zone.

Table 1 outlines the link between these profit-driven holding companies, the corporatized infrastructures and the operating conglomerates they own.

Specifically, Jebel Ali Port, DP World's flagship port, is the world's largest engineered harbour and largest container port between Rotterdam and Singapore. It continues to expand, with plans currently in place to increase its capacity to 22.1 million TEUs by 2018.[3] This port cements Dubai's position as the main trade gateway and re-export zone in the wider region. An indication of its growth is the substantial increase in container traffic through Dubai from 7.62 million TEUs in 2005 to 15.6 million TEUs in 2015 (UNCTAD, 2015). Major container shipping lines call in at the port, including feeder vessels to ports on the African and Indian subcontinents, making it a crucial logistical space for broader accumulation trends in neighbouring regions too.

The port is surrounded by the Jebel Ali Free Zone (Jafza), which houses more than 7,000 companies engaged in the manufacturing, trade, logistics, industrial and service-orientated sectors. Both Jebel Ali and Jafza are linked to the Dubai World Central complex, a planned mega residential, commercial and logistics zone that also encompasses Al Maktoum International Airport.[4] In line with concepts of integrated logistics space, the various infrastructural elements are part of one customs-free zone with an airport–seaport corridor, allowing cargo to be moved from port to airport within 20 minutes. Dubai Logistics City, which was opened in 2007, is located within Dubai World Central. It is a 200-square-kilometre area that offers companies access to a substantial part of the Jebel Ali Free Zone and logistics facilities. Cowen (2014: 172) explains how Dubai Logistics City 'sets momentous precedents for the production of urban space and the politics of infrastructure protection, reaching far beyond Dubai and the Gulf region'. The various spaces are also connected through an online portal, Dubai Trade, allowing businesses to submit import/export regulatory documents to multiple state agencies online. Thus, Dubai's logistical infrastructure is interlocked with broader technological networks designed to automate and systematize state functions in relation to trade.

In Jafza and Dubai Logistics City, commodities are assembled, labelled and/or repackaged mainly for re-export. Indeed, 74% of total free zone trade imports are re-exported.[5] Major international brands have chosen Jebel Ali Free Zone as their regional headquarters to make it the principal regional gateway for their commodities. Dubai's direct foreign non-oil trade mainly centres on precious stones, electronics, vehicles and construction materials.

Jafza attracts more than 20% of the UAE's foreign direct investment and exceeds 50% of Dubai's total exports. As part of the 'soft infrastructure' to attract firms, Jafza incentives include:

> a 100% foreign ownership, 0% corporate tax for 50 years (a concession that is renewable), no restriction on capital repatriation, 0% import or re-export duties, 0% personal income tax, no currency restrictions, no restriction on foreign talent or employees ability to mortgage your premises to a bank or financing company and onsite customs (Jafza, n.d.).

3 TEU stands for 'twenty-foot equivalent unit' and is used to describe the capacity of container ships and container terminals.

4 In the aviation sector, Dubai's two airports, Dubai International and Al Maktoum International, are hubs for cargo transit. Dubai International is ranked 6th in terms of cargo transport internationally. Al Maktoum International Airport is the hub for Emirates SkyCargo, the cargo airline division of Dubai's Emirates airline.

5 Figure calculated by author based on Dubai customs data for 2015.

TABLE 1 Operating corporations and state-owned investment companies

Airports/Airlines	**Operator**	**Ownership**
Al Maktoum International at Dubai World Central (DWC)	Dubai Airports Company	In April 2007 the Department of Civil Aviation–Dubai was divided into two companies: Dubai Civil Aviation Authority and Dubai Airports Company
Dubai International Airport	Dubai Airports Company	Government of Dubai
Emirates Airline and Group (Emirates SkyCargo is a subsidiary cargo handling brand)	Emirates Group combines Dubai National Air Transport Association (dnata, 1959) and Emirates Airlines (1985); it has over 50 brands within its portfolio	Investment Corporation of Dubai; Government of Dubai
Ports	**Operator**	**Holding Corporation**
Jebel Ali Port	Dubai Ports World	Dubai World (via Port and Free Zone World FZE)
Free Trade Zones	**Operator/Ownership**	**Holding Corporation**
Jebel Ali Free Zone	Economic Zones World	DP World Limited (via DP World FZE)
Dubai Airport Cargo and Logistics	Dubai Airports Company	Government of Dubai
Dubai World Central Logistics City	Dubai World Central Corporation	Dubai Aviation City Corporation
Dubai Airport Free Zone Authority		Investment Corporation of Dubai

sources: Data compiled by the author from official operating and holding corporate profiles

Jafza officials are keen to emphasize the 'efficiency' of setting up in the free zone, as opposed to the 'red tape in other Arab states'. As we walked through Jafza's 'one stop shop', a Jafza media officer remarked that 'our customers just need to deal with one person and fill in one form to do business here—this is unimaginable anywhere else'.[6] Keshavrzian has argued that Dubai's free zones, far from being a limitation on sovereignty, form important 'nodes to circulate rent to domestic and international members of ruling coalitions' (Keshavarzian, 2010: 263). Jafza and Jebel Ali Port, as one such important node, are essential to capital accumulation and circulation for Dubai's state-owned conglomerates and domestic capital groups.

Logistical infrastructure plays a critical role in speeding up circulation and binding circulatory space, shaping forms of capital accumulation. Dubai's domestic capital groups, typically operating across several business sectors, rely on trade infrastructure for imports/exports which, in turn, transform the urban environment. For example, Ghurair group, one of the largest private conglomerates, founded in Dubai in 1960, owns a packaging plant that produces cardboard products for storage and shipping purposes, as well as a freight and shipping company, and is the largest trader of dry bulk cargo. Ghurair also operates a construction company and an aluminium factory, owns a controlling stake in the National Cement Company and Emaar Properties, and significantly holds agency rights for an array of commodities, including Daewoo, Edimax and Samsung. Capital accumulation within this diverse portfolio is contingent upon logistical infrastructure enabling the import/export of consumer commodities and construction materials, along with the logistical functions from which the group profits.

In the retail sector, imports are organized around ownership of agency rights to specific commodities, typically granted to allies of the ruling family in domestic capital groups. Dubai's branding as a shopping destination, symbolized by a number of mega shopping malls, is thus directly tied to the emirate's ability to import large volumes of commodities through such agency rights. The production of the city as a regional shopping centre and the form of mega shopping malls is tied to patterns of development, which include reliance on the import of consumer goods and the necessary infrastructure to speed up circulation. For example, Futtaim Group owns the agency rights to IKEA, Marks & Spencer, Toyota and Lexus. Habtoor Group owns the agency rights to Bentley, Mack Trucks and Mitsubishi. It is important to note that such agency rights largely mirror the list of top commodities imported into Dubai, including automobiles, electrical items, machinery and household goods. While a significant proportion of goods is re-exported, Dubai's economy, which is concentrated mainly in the service sector, continues to be highly dependent on commodity imports to sustain its growth.

Another principal site of capital accumulation in Dubai is related to construction activities. Capital concentrated in this sector has historically benefited from substantial state contracts and subcontracts for mega infrastructure and industrial developments. Such contracts were significant for the emergence of domestic capital groups, which went on to dominate the transformation of Dubai's built environment through real-estate developments (Hanieh, 2015). After the slump that followed the 2008 financial crisis, Dubai's construction sector is now advancing again in the run-up to Expo 2020, which has been awarded to Dubai. Infrastructure expansion has been vital for the contracts it generates and, significantly, spaces such as Jebel Ali Port allow for the export of construction materials produced in Dubai (such as cement and aluminium) and the import of necessary products to sustain the rapid level of construction. Jebel Ali Port and its surrounding logistical spaces are thus imbricated in the production of the city as a collection of mega real-estate projects.

Finally, the logistics industry itself is a major area of capital accumulation, accounting for 14% of Dubai's gross domestic product. The connection between maritime

6 Interview with Jafza media officer, Dubai, February 2016.

and aviation ports, land transport and logistics areas, coupled with soft infrastructural incentives, make Dubai highly attractive for international and local logistics companies. It is no coincidence that the two largest regionally based logistics firms, Aramex and Agility, operate out of Dubai. Agility's largest Middle East distribution centre is located in Jafza. Dubai's geographic location is routinely marketed to major players in the logistics industry, with top companies locating their regional headquarters in Jebel Ali. Dubai is thus fundamentally specialized in commodity circulation through its networked logistical infrastructures. The focus on logistical capacities not only inserts Dubai into global networks—it also influences forms of local urban development, conceiving of spaces like Dubai World Central as nodes in interconnected logistics space marked by their ability to enhance circulation.

Emerging from these seemingly disjunctive moments of accumulation, whether in retail, construction or logistics, is the central role of infrastructure in knitting together accumulation across the entire circuit of capital. The symbiotic relationship between state-owned holding companies, corporatized infrastructure and domestic capital groups underpins processes of capital accumulation and transformations in the urban environment.

DP World's internationalization

DP World, Jebel Ali's operating company, is one of the leading port operators that dominates the market internationally, with global assets in a network of more than 77 marine and inland terminals across six continents. In 2015, DP World handled 61.7 million TEUs, ranking fourth internationally among maritime terminals by throughput (DP World, n.d.). This is in line with overarching trends in the maritime industry towards the centralization of port operations through a handful of private operators (Slack and Frémont, 2005; Olivier and Slack, 2006; Notteboom and Rodrigue, 2012) and the privatization of port assets internationally through PPP agreements.

DP World is the result of multiple transitions in the management of Dubai's ports. Initially, Jebel Ali was managed by US company Sealand Shipping and was not as successful as Dubai's first port, Rashid Port, managed by Grey Mackenzie (Ramos, 2010). Port Rashid, which until then was Dubai's main port, was in direct competition with Jebel Ali. It was not until the 1990s that the state ended both management contracts and formed a single state-owned but commercially independent company: Dubai Ports Authority (DPA). The DPA had an international investment arm, Dubai Ports International (DPI), which focused on acquiring foreign port terminals. As Dubai continued to grow, the location of Port Rashid in the city centre became untenable, and a decision was taken to close the port. This could only be done once major extensions to Jebel Ali Port had taken place in the early 2000s, allowing for transfer of capacity and for the closure of Port Rashid. During an interview, a Jafza marketing manager adamantly stated that it was the free zone that was responsible for the success of Jebel Ali Port, explaining that 'initially liners did not switch from Port Rashid, until the prospect of the free trade zone attracted them'. In 2005, both DPA and DPI were merged to create DP World, managed under the auspices of government-owned holding company Dubai World, with a portfolio also containing Drydocks World, Economic Zones World and Istithmar World. Dubai World's chairman until 2010 was Sultan Ahmed Bin Sulayem, one of the ruling family's closest allies. In the wake of the financial crisis, in December 2010, he was removed from his post and demoted to chairman of DP World, while the position of head of Dubai World was filled by Sheikh Ahmed bin Saeed Al Maktoum.

DP World was a critical springboard for the regional and international expansion of Dubai's logistics networks through a series of acquisitions and concession contracts. It emerged as a local port operator, and in the 2000s began a programme of regional expansion with concessions in Jeddah (Saudi Arabia), Doraleh (Djibouti) and Visakhapatnam (India), among others. By 2005, DP World was on a clear path towards internationalizing its port assets through the purchase of CSX World Terminals, a leading global container terminal operator, and the purchase of the Peninsular and Oriental Steam Navigation Company (P&O) the following year. These massive acquisitions established DP World as a global player with terminal operations in Australia, Asia, Europe and the Americas. In a significant acquisition, DP World extended its operating license for DP World Southampton until 2047: following a deal with Associated British Ports (ABP) it acquired ABP's 49% stake in DP World Southampton, making DP World the sole owner.

The rationale of export-led development put an emphasis on trade infrastructure and logistics functions as key mechanisms for successful involvement in global trade, the World Bank even producing a logistics index for every state. Developing states were increasingly encouraged to privatize infrastructure as a measure to secure funding for port expansion and integration into larger port networks. PPPs in the transport sector were pushed by international development organizations such as the Organization for Economic Cooperation and Development, the World Bank and the International Monetary Fund. This led to an expansion of the role of private port operators in constructing, financing and managing port operations (Siemiatycki, 2013). DP World took advantage of this privatization process, expanding its network internationally. Table 2 outlines DP World's concessionary agreements by type from 2000 to 2009, providing an overview of the scope of the conglomerate's aggressive internationalization strategy.[7] More recently, the Dubai government has attempted to codify standards for PPPs within Dubai itself, passing Law No. 22 of 2015, indicating that future local infrastructure projects will involve higher levels of privatization.

Although DP World's own corporate history explains the development trajectory in Jebel Ali Port as a linear rise to port efficiency through vision and technological innovation, the model of mega infrastructure expansion based on debt financing came into question during the financial crisis in 2008. DP World was entangled with debts from parent company Dubai World, and its credit rating was downgraded. On 26 November 2009, Dubai World requested a delay on the repayment of its US $26 billion debt, and a few days later Dubai's finance department noted that the debts were not guaranteed by the state. What had seemed a given principle of Dubai's liberalized economy, that investments in state-owned conglomerates were backed by the state, was now uncertain.

Dubai World used aid from Abu Dhabi to mediate the crisis, and to repay urgent debts until it could renegotiate payment terms with its creditors. Negotiations with creditors led to Dubai World offering to repay debts, although with delays of up to eight years. Dubai World appointed a chief restructuring officer (CRO), British accountant Aidan Birkett, from Deloittes, who secured the agreement of a majority of creditors to a rescheduled repayment plan of Dubai World's liabilities (Hughes, 2010). While the conglomerate's major liabilities were contained within its Nakheel subsidiary, a real-estate developer, the impact of the crisis on Dubai's image more generally was significant. DP World, which has a gross debt of US $8.2 billion, mainly in bonds, continues to repay its debts. In attempting to shift its debt burden, Dubai World sold off Economic Free Zones, which owns Jafza, to its subsidiary DP World in a US $2.6 billion deal.

7 Of course, DP World's expansion was not always openly welcomed, as indicated by the controversy over their operation of several US ports that had been operated by P&O before being purchased by DP World. After much media attention questioning the security of US ports under DP World administration, the deal was blocked at US congressional level, although US president Bush at the time threatened to use his veto to ensure the deal would go through (Mostaghel, 2007). In the end, DP World sold its P&O American operations to the American International Group's asset management division. In Djibouti, DP World's operating concession at the Doraleh Container Terminal was also annulled and arbitration proceedings began following an investigation that indicated that the deal signed with DP World unfairly favoured the company (Styan, 2013; Kerr, 2014). Moreover, in Yemen, DP World sold its 50% stake in a container terminal in Aden in September 2012 four years into a 30-year management contract following allegations that it had failed to complete the investment projects agreed upon (Barnard, 2014).

TABLE 2 DP World public–private partnerships (PPPs) in container terminals

Sponsors	Country	Year of Financial Closure	Project Name	Subtype of PPP
DP World (100%)	Djibouti	2000	Djibouti Port	Build, rehabilitate, operate, transfer
DP World (100%/United Arab Emirates)	Lebanon	2000	Beirut Container Terminal	Build, operate, transfer
DP World (90%)	Egypt, Arab Republic	2000	Sokhna Port	Build, operate, transfer
DP World (75%), Chettinad Group (20%/India)	India	2001	Chennai Container Terminal Pvt Ltd	Build, rehabilitate, operate, transfer
DP World (100%)	India	2001	Mundra International Container Terminal	Build, operate, transfer
DP World (50%), United Liner Agencies (50%/India),	India	2002	Visakhapatnam Port	Build, operate, transfer
DP World (50%), Caucedo Development Corporation (50%/Dominican Republic)	Dominican Republic	2003	Caucedo Terminal	Merchant
DP World (50%), Caucedo Development Corporation (50%/Dominican Republic)	Dominican Republic	2003	Caucedo Terminal	Merchant
DP World (25%), Grindrod Limited (25%/South Africa), Gestores SARL (2%/Mozambique)	Mozambique	2003	Maputo Port	Rehabilitate, operate, transfer
DP World (25%), Grindrod Limited (25%/South Africa), Gestores SARL (2%/Mozambique)	Mozambique	2003	Maputo Port	Rehabilitate, operate, transfer
DP World (N/A)	Djibouti	2004	Horizon Djibouti Terminals Limited	Build, operate, transfer
DP World (N/A), DVS Raju (India) (N/A)	India	2005	Gangavaram Port Limited	Build, operate, transfer
DP World (75%)	India	2005	Rajiv Gandhi Container Terminal	Lease contract
DP World (75%)	India	2006	Vallarpadam International Container Transhipment Terminal—Phase I	Build, operate, transfer
DP World (100%)	Djibouti	2007	Doraleh Container Terminal	Build, operate, transfer
DP World (80%)	Vietnam	2008	Saigon Premier Container Terminal	Build, operate, transfer
DP World (70%), Uniport SA (30%/Peru)	Peru	2008	Callao South Dock Container Terminal	Build, operate, transfer
DP World (75%)	Pakistan	2008	Second Container Terminal at Port Mohammad Qasim	Build, operate, transfer
DP World (100%)	Senegal	2008	Dakar Seaport	Build, rehabilitate, operate, transfer
DP World (50%)	Algeria	2009	Port of Djen Djen	Build, rehabilitate, operate, transfer
DP World (50%)	Algeria	2009	Ports of Algiers	Build, rehabilitate, operate, transfer

SOURCE: Data compiled by author from World Bank Private Participation in Infrastructure Database (https://ppi.worldbank.org)

Both the expansion of DP World and the entrenched role of finance capital in its operations highlight the deepening internationalization of Dubai's capital, but also its susceptibility to financing crises and its dependence on steady rates in global trade. Officials from DP World and Jafza were eager to affirm that the trade and logistics sector is shielded from financial crises and continues to make profits, noting that 'since the crisis, our government has taken steps to learn from past mistakes and introduce new regulations to safeguard Dubai's economy'.[8] However, projections on global trade are ultimately likely to determine the future trajectories of the sector.

Labour regimes and port geography

The nascent critical literature on logistics chains has paid particular attention to the central role labour is able to play in disrupting global trade, and thus capital accumulation at specific strategic transport nodes (Bonacich and Wilson, 2008; Neilson, 2012; Cowen, 2014; Toscano, 2014). The contradiction of the modern 'lean' system of production, integrated transnational supply and logistics networks, lies precisely in the extreme effect any disruptions may have. Neilson (2012: 330) explains that 'logistics workers have realized they hold a strategic position in global production systems'. However, much of this analysis has thus far focused on labour contestation in the major unionized ports of the global North and went on to generalize from there. While labour certainly has the capacity to disrupt commodity flows through strike action, for example, it is necessary to critically examine how regionally specific labour regimes shape contestation. If indeed, as Mezzadra and Neilson (2015) have argued, 'operations of capital' can be understood through three conduits of analysis—'extraction, finance, and logistics'—our analysis of labour power at critical transport nodes must be grounded within specific geographies, political structures and labour regimes. This is especially necessary in Dubai's case because of its significance as trade and transhipment hub, and the specificity of its labour regime.

While Dubai is credited with 'excellent sea ports and airports, an efficient telecommunication network and wide ranging IT capabilities, as well as a skilled and disciplined workforce' (Fernandes and Rodrigues, 2011: 78), what is scarcely mentioned in corporate accounts is the highly repressive labour regime that produced such a 'disciplined workforce'. A strict ethnoracial hierarchy governs the workforce in Dubai, affording nationals welfare entitlements and job security in the public sector that is denied to the non-citizen population made up of a North American and Western European managerial class, a middle stratum of Arab and Asian professionals and a majority of low-wage labourers from South Asia. In 2015, non-citizens made up 85.5% of Dubai's total employed population. While 55% of employed Emiratis were concentrated in the public and defence sectors, non-citizen labour is clustered around construction, with 29.3% of non-citizen males engaged in this sector, according to the Bulletin of Labor Force Survey Results (DSC, 2016). Differences between Emiratis and expatriates were evident throughout the results. The low overall unemployment rate of 0.8%, for example, contrasted with an 8.7% unemployment figure for Emiratis, who made up only 3% of Dubai's workforce. The banning of trade unions, the banning of public protests, the linking of legal residency status to employers through the *kafala* system, and tight monitoring of the population through a population registry constitute a strict matrix of control that severely curtails labour contestation.

A rich literature has attended to specific forms of labour exploitation in the Arabian Peninsula (Khalaf and Alkobaisi, 1999; Kapiszewski, 2001; Al-Awad and Elhiraika, 2003; Vitalis, 2007; Khalaf *et al*., 2015). More recent analyses have been further nuanced through a focus on the gendered and racialized hierarchies that have emerged, as well as on workers' self-organized actions in opposition to this status quo

8 Interview with a DP World corporate media relations officer, Dubai, February 2016.

(Chalcraft, 2011; Buckley, 2012). Longva's (2005) account of 'civic ethnocracy', originally used in relation to Kuwait, has been dominant within the literature describing the ethno-national character of Arabian Peninsula states, where the ruling families and allied merchants maintain control over a majority non-citizen population. It is worth noting that, despite this relationship vis-à-vis migrant labour, nationals often express anxiety at being a minority within the state. Ruling families, in turn, project themselves as safeguarding the local culture while remaining committed to modernization through liberalization in business. The labour regime thus not only ossifies class relations within an ethnoracial hierarchy, it also works to consolidate the power of the ruling family.

Although some authors have argued that exclusionary practices similar to the *kafala* system exist elsewhere and do not make the region exceptional (Vora and Koch, 2015), it is rather the specific ratio of citizen to non-citizen labour that is exceptional, with non-citizens making up the majority of the population but lacking basic rights and having no avenues for naturalization (especially in the lower strata of the workforce). The mass deportation of migrant labour during Dubai's financial crisis targeted mainly low-wage workers, but also categorically exposed the matrix of control governing labour relations, where some migrant families may indeed reside in Dubai for generations, yet have no right to naturalize and no protection from expulsion. This, of course, does not foreclose the potential for labour action; Arabtec, a major construction conglomerate, for example, faced coordinated strikes across several worksites in 2013. However, deportations of striking workers quickly followed (Peel and Kerr, 2013).

This restrictive labour regime was a key factor that helped propel Dubai into global prominence in transnational logistics networks. The operation of Dubai's infrastructure is dependent on this extremely strict ethnoracial segmentation of a management class mainly drawn from Western corporate ranks and a highly exploitable cheap labour force drawn largely from South Asia for construction and manual labour within ports and free trade zones. At the cargo show for the Middle East and North Africa (Cargo Show MENA), a recruitment agent from a British firm explained, 'we are looking to recruit the top managers from Europe and the US to work in Dubai's transport sector, here they can have competitive salaries, and a Disneyland lifestyle'.[9] In contrast to this 'Disneyland lifestyle', a short distance from Dubai's main metro stops, which are all named after the mega shopping malls or banks that line the central highway, there are the over-crowded labour camps that stretch into the dessert, which most visitors will never encounter. It is these masses of invisibilized workers that account for the fast pace construction of infrastructure.

Within newly constructed logistics cities and free trade zones, workers are housed in what are called 'labour villages' within the complexes. While these cut the arduous journeys from labour camps outside the city, they remain a form of labour control and discipline, by containing labour within the workspace. Entry to the port and free zone area itself is restricted through biometric gates and barriers that encircle the area, with guards stationed at all entrances. This overall security apparatus regulates and disciplines labour on the port. Global transport union federations, such as the International Transport Workers Federation (ITF), which developed noticeably in the broader Middle East and North Africa region in the post-uprisings period of 2011 (Anderson, 2013) does not operate in Dubai's Jebel Ali Port owing to restrictions on trade unions.

In significant ways, the port geography itself is also a hindrance to labour contestation. Much like other newly developed mega ports, Jebel Ali Port is an isolated and securitized industrial complex. While in the past ports were built around communities, and dock workers were able to see their families and each other to

9 Interview with a recruitment agent at Cargo Show MENA, Dubai, April 2015.

organize, building what Sears (2014) has termed an ‘infrastructure of dissent’ that could sustain labour actions, these new highly automated mega ports are by design isolated and isolating. The trend towards automation is very significant and has become one of the cornerstones of DP World’s expansion internationally: the ability to implement new technologies reduces the number of workers needed. At the various logistics trade shows in Dubai it is rare to see even a single image of a human being operating machinery; the main emphasis is on technological innovation and automation. Although human labour continues to be essential to the operations of ports, its standardized exploitation in locations such as Dubai is not an auxiliary to ‘success’ in business logistics; indeed, it is precisely what makes Dubai attractive to firms wanting to avoid labour disruptions along supply chains. The Dubai model is attractive internationally precisely because of the coupling of high levels of automation and restrictive labour conditions.

Conclusion

This article has sought to take note of ‘the centrality of infrastructure in the construction of the city as “modern”, as a site of capitalist production and expansion, as constitutive of social relations of inequality, and as a space of environmental transformation’ (McFarlane and Rutherford, 2008: 363). By drawing on the emerging literature on logistics space and integrating more recent critical political economy accounts of Dubai, I trace the specificities of Dubai’s maritime port infrastructure and operating conglomerate, accounting for the city-state’s prominence in global logistics chains. The focus on Jebel Ali Port, its free zone and DP World reveals important detail about transnational logistics chains and the integration of repressive labour regimes within them.

There is without doubt a need for further research in this area, which takes seriously the impact of logistical infrastructures on the economic geography of Arabian Peninsula cities. Important considerations are the UAE’s highly devolved policy-making processes, which have led to competition with other emirates, who are diversifying their economies through trade infrastructure, building and expanding ports, airports and free zones. A similar process is taking place across the region through emerging mega ports in several states, most notably Oman’s Salalah Port, situated outside the Strait of Hormuz, which potentially offers a significant reduction in journey time for maritime transport. While officials at DP World were quick to dismiss such emerging competition, the question of port over-capacity is a serious one to consider at a regional scale. When asked if there were contingencies to deal with competition from other ports in neighbouring states, a Jafza official explained:

> Yes we have a team that watches out for such matters, but there is no other place in our region that can compete with Jebel Ali. We have been doing this for a long time, we have the most modern equipment, and Dubai has the most accommodating environment and lifestyle prospects to attract the necessary expertise to live in Dubai long term.[10]

This narrative is part and parcel of Dubai’s larger branding as the main expatriate destination in the region, which is said to afford its managerial class a lifestyle that is less restrictive than other Gulf states. Yet, as this article has shown, behind such narratives lies a far more complex story of globalization, capital accumulation and labour repression. Dubai’s port infrastructure—with Dubai conceived as the core of a multimodal transport hub that encompasses free trade zones, logistics cities and other infrastructure—has underpinned class formation in the emirate itself, linking

10 Interview with a recruitment agent at Cargo Show MENA, Dubai, April 2015.

various moments of accumulation across urban space. This process has been overseen by a particular configuration of state–capital relations, with large conglomerates as the primary owners (and beneficiaries) of these infrastructure networks. Simultaneously, Dubai's port infrastructure is rapidly extending throughout the wider global economy, constituting a key node in the circulatory movement of capital within international trade routes. Underlying both of these processes is a distinctive labour regime—based on repression and exclusion—which has conferred a particular advantage to Dubai's infrastructure growth. An understanding of these interconnected features of the logistics space is essential for explaining how and why infrastructure is at the core of Dubai's particular brand of capitalism, while also pointing out potentialities for future disruption.

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