



Public asset corporation: A new vehicle for urban regeneration and infrastructure finance

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ABSTRACT

This article presents a hybrid model of managing and financing urban redevelopment and public infrastructure: the Public Asset Corporation (PAC). The model has evolved through the example of Copenhagen City & Port Development Corporation (By og Havn, n.d.), a publicly owned privately managed institution that leverages public assets through land value capture and Public-Private Partnerships. In addition, City & Port leases and sells land to private investors at market prices. The yield serves public benefit by funding a city-wide metro system. Through a mandate by national law to always maximize the yield, City & Port is sheltered from political interference. Thus, it is the blend between public and private ownership, management, and financing that distinguishes the PAC model as it evolved from the case study of City & Port. In contrast, much literature on public ownership and management focuses upon the operational inefficiencies, bureaucracy, and lack of accountability of public organizations, while literature on private organizations is concerned with the amassment of profits accrued by private investors, despite originating from profit generating public sector-driven initiatives, including value appreciation arising from re-zoning, infrastructure, and other public investments.

1. Introduction

Cities across the world are facing increasing demands for public infrastructure and other public goods at a time when public resources are under enormous pressure (Ingram & Hong, 2012). With new cities emerging and urban populations growing, demands for public infrastructure (e.g., water, energy, public transit) are also increasing (The Guardian, 2016; The Guardian, 2018). At the same time, many older cities are challenged by legacy infrastructure, but also have former industrial and port areas ripe for redevelopment. With public budgets overstretched and tax increases often contentious, governments face difficulties financing the investments required for urban growth and development (Ingram & Hong, 2012).

Against this backdrop, the article presents public asset corporation (PAC) as a model for conducting large-scale urban regeneration and financing city-wide infrastructure investments without using scarce tax revenues. The existing academic literature distinguishes between public and private, emphasizing how public ownership and management affect operational inefficiencies and how privately held development corporations reap profit from the creation of a public good. The PAC model developed through the case study of Copenhagen City & Port Development Corporation (City & Port) provides a solution to the distinct pitfalls of public or private ownership. This article argues that the

PAC model provides an alternative way forward that is politically sheltered, publicly accountable, cost efficient, revenue maximizing (for the public), and maintains a long-term outlook to see projects through to completion.

The article presents an introduction to the topic and the case study that lays the ground for the model of public asset corporation. The literature review provides a discussion on public versus private ownership and presents different finance mechanisms including: taxes, land value capture, tax increment financing and public-private partnerships. These are alternative ways to finance and deliver large-scale urban regeneration, infrastructure, and other public projects. The empirical analysis of City & Port that follows focuses on the aspects of public and private ownership, and the management and finance mechanisms presented in the literature review. The contours of the PAC model through its evolution at City & Port, particularly how it addresses ownership, management, and finance, illustrate this case study. The subsequent analysis demonstrates how the PAC has been adapted to other European and US cities using the examples of Hamburg and Philadelphia. Finally, the article concludes by summarizing the distinctive elements of the PAC and revisiting the existing literature presented earlier in the article.

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1.1. Introduction to City & Port

City & Port is a hybrid organization; it is a publicly owned, yet privately managed organization. Through its public-private blend, City & Port deploys a broad suite of public-private delivery and finance mechanisms. This is in contrast to how most urban redevelopment organizations are generally managed as either entirely public or private organizations. City & Port uses land value capture to leverage the value of public assets through re-zoning and infrastructure investments. Land value capture is a finance mechanism available to public organizations that own or control public land, possess re-zoning authority, and have the financial resources to invest in large-scale infrastructure projects. Simultaneously, City & Port enters into Public-Private Partnerships (PPPs) frequently deployed by both public and private organizations. Lastly, City & Port establishes joint-ventures with private investors and developers to manage developments and maximize profits, which is a finance mechanism commonly available to private organizations.

City & Port operates under a national statutory mandate to maximize revenue to fund large-scale urban regeneration and city-wide infrastructure. This mandate shelters City & Port from political interference by obliging City & Port to always choose the investment proposition that yields the most revenue. The revenue yield is used to service the debt on the city-wide metro system. In this way, City & Port has a holistic approach to regenerating the entire city that came about at a crucial moment in the city's history.

In the mid-to-late 1980s, Copenhagen experienced unemployment as high as 17.5%. The tax base of the city had dried up, as there was extensive out-migration to the suburbs of Copenhagen. The municipality incentivized this out-migration by selling off land in the suburbs to private developers that built primarily one-family homes since the 1950s. In addition, the out-migration was enabled by the expansion of individual automobile. As resourceful citizens moved out, the city became overrepresented by pensioners and young people attending public universities, neither of whom contributed greatly to the city's tax revenue. By the late 1980s, the city was struggling with annual budget shortfalls of \$750 million. Emblematic of the severity of the situation, in 1995, local government decided to halt all construction of new social housing, as every newly built social housing apartment increased public spending by 15,000 USD annually (Kramer-Mikkelsen, 2016, interview).

The urgency of the situation heightened as the manufacturing base of the city, centered at Copenhagen's harbor, slowly withered from the late 1980s. A study of the industrial activities in the harbor concluded that the harbor only utilized 5% of its existing landmass at any one given time. In addition, with the construction of Øresundsbroen, the bridge connecting Copenhagen to Southern Sweden, the study estimated that activities in the harbor would draw down a further 25% by 2000. The harbor also struggled with large pension liabilities. Harbor management began selling off waterfront land in a piecemeal manner to balance their annual budgets (Maskell & Füssel, 1989).

In 1990, a historic alliance consisting of representatives from both national and local governments and from across the political spectrum came together to re-envision the city and create a large-scale plan for its urban regeneration. In 1992, Ørestad Development Corporation was established by the municipality of Copenhagen with 55% and the national finance ministry with 45% shares of the ownership. While, the national government allocated the land, local government re-zoned it for residential and commercial use. Ørestad Development Corporation was a publicly owned privately managed organization tasked with regenerating 1.2 mi² of former military land coined Ørestad. The land of Ørestad is strategically located between the city of Copenhagen, the airport, and the bridge to Sweden.

In 2007, local government made the decision for Ørestad Development Corporation to be restructured into City & Port tasked with regenerating the vast port areas of Copenhagen. In the process, City & Port absorbed Ørestad Development Corporation and the port

authorities. The new corporation also spun off separate purpose-driven organizations to manage the commercial activities. Copenhagen Malmö Ports became tasked with managing the port operations and the Metro Construction Corporation managed metro construction activities.

The subsequent regeneration changed the city forever. In 2014, World Bank Group counted Copenhagen amongst the top ten wealthiest cities in the world (The World Bank, 2018). Most noticeably, the Danish economy was the only top ten economy that did not rely on natural resource extraction, the financial sector or gambling on the World Bank Group list (ibis). In 2016, Business Insider reported that consultancy Arcadis named Copenhagen the third richest city in the world when considering measures of “people, planet and profit” (Business Insider, 2016).

City & Port, as a vehicle for the urban regeneration of Copenhagen, should be viewed as a financially vehicle for economic development that was able to spur growth without spending scarce tax revenue and with a good plan and execution. Thus, since its creation in 2007, City & Port has, with just 120 employees, overseen half of all redevelopment projects in Copenhagen (Kramer-Mikkelsen, 2016, interview).

2. Literature review

There are two prevalent ways of delivering large-scale urban regeneration and infrastructure investments: either through the public sector or the private sector. Current literature on how cities conduct large-scale investments explores how cities deliver either through the public or private sectors and with either public finance (e.g., taxes, bonds and credit) or private finance such as Public-Private Partnerships (PPPs). In the literature, there is a defined boundary between public versus private ownership and management, and public versus private financing.

2.1. Institutional ownership

2.1.1. Public ownership

Since the 1980s, much literature has focused on the deficiencies and limitations of public authorities; for example, Mitchell (1993) focuses on the extent to which public authorities are less efficient, less innovative, and less accountable than private or other forms of ownership and management. Mitchell (1993) argues that the decisions of public authorities are often subject to the short-term political considerations of elected officials. This lack of political insulation lessens the ability of public organizations to respond to shifts in market dynamics, demographic preferences, and demands for public sector creativity (Mitchell, 1993). There is a juxtaposition between the short-termism of politically elected officials and the long-term perspective that cities must adapt for large-scale urban development.

Beyond political interference, public authorities must listen and respond to a multitude of public opinions and societal groups. Local policymakers find themselves negotiating with citizens, neighboring communities, and competitive markets in a fragmented governance system. This negotiation with a multitude of stakeholders further slows decision-making, increases bureaucracy, and adds transactional costs to the dealings of public authorities (Pagano & Perry, 2008).

This intrinsic negotiation reflects local government's focus on accountability vis-à-vis the city's stakeholders. Accountability is an important theme in public ownership and management, and in an effort to achieve accountability public authorities are challenged by navigating between multiple and often competing political pressures (Borras, Hall, Scoones, White, & Wolford, 2011; Mitchell, 1993). The importance of accountability for public authorities takes precedence to most other demands. As a result, Mitchell (1993) found that 75% of public authority directors ranked “direction and control” as their most important functions.

Gianakis (2002) points out that, for the purpose of measuring public administrations' use of resources, performance measurements were

introduced as central components of New Public Management: an approach introduced by Margaret Thatcher in the 1980s. Today, New Public Management is still prevalent in public sectors across the world. Performance measurements can also deflect political pressure rooted in citizens' criticism of public sector inefficiencies. By demonstrating their efficiency—through the use of performance measurements—public administrations can circumvent public demand for privatizing their operations.

As New Public Management swept across the world, public administrations became confined to acting within narrowly defined remits of public service delivery. [Asad \(2001\)](#) illustrates this by pointing out that public sectors were no longer permitted to engage in trade strategizing and business development, which were the responsibilities of private sector actors. Public sectors became predominately confined to a regulatory role. Acknowledging this, governments deployed private sector actors to partake in roles of growth creation and wealth distribution ([Asad, 2001](#)).

[Gianakis \(2002\)](#) points out that the standardization of performance measurement systems is not sufficiently responsive and therefore not compatible with societal moods and political priorities. In sum, there is a schism between the accountability and agility of public authorities; on the one hand, public authorities must be held accountable to their electorate constituency, and on the other hand, public authorities must be flexible and agile vis-à-vis the market in order to, for instance, grow the local economy ([Gianakis, 2002](#)).

Brenner et al. explain that while there have been attempts to coordinate planning and decision making in US metropolitan areas through the introduction of second tier governance structures (e.g., metropolitan planning organizations), the proliferation of separate local public authorities at the city and municipal level results in the balkanization of power and fragmentation of governance ([Brenner, 2002](#)). This institutional fragmentation of local public sectors deters the establishment of development corporations that rely on the merging of local public authorities into one unified development corporation that manages a clustering of assets ([Robinson, 2011](#)).

2.1.2. Private ownership

[De Fraja \(1991\)](#) recounts two main arguments in support of privatization: 1) for-profit is the most effective way to reduce inefficiencies in production, and 2) increased individual firm efficiency improves overall industry efficiency. However, [De Fraja \(1991\)](#) argues that unless there are high levels of inefficiencies in the pre-privatized entity, the potential cost reduction and efficiency gain achieved through privatization will come at a price; namely, the reduction of output.

[Ikenberry \(1990\)](#) specifies that the most prevalent pro-private ownership argument in the academic discourse centers on the inefficiency of public institutions. Thus, [Asad \(2001\)](#) argues that privatization enhances the competitiveness and efficiency of publicly owned institutions and reduces public debts. Interestingly, [Asad \(2001\)](#) believes that a better price equilibrium will be found and more prosperity will be generated through privatization and private ownership. However, without sufficient redistributive mechanisms, such wealth will remain in private hands rather than serve public purposes.

According to [Pack \(1987\)](#), the privatization of ownership of public assets has been driven by multiple factors: 1) political opposition to further growth of the public sector, 2) the belief that the private sector is a more efficient producer and provider of services, and 3) the need to reduce costs. [Pack \(1987\)](#) presents evidence from an empirical survey of the privatization of state and local government goods, services, and production by Poole and Fixler (as cited in [Pack, 1987](#)). The survey found the following recurring pitfalls of private corporations trying to obtain and maintain concessions: 1) corruption; 2) low initial bids to get a foot in the door; 3) poor quality; and 4) reduced service to the neediest, such as the poor, elderly, and ill, who do not present a convincing business case.

Importantly, [Pack \(1987\)](#) identifies an additional deficiency,

namely that contracts are incomplete and cannot account for all eventualities, which makes municipal monitoring costly. These deficiencies of incomplete contracting and future unpredictability also impact public–private partnerships (PPPs) increasing the costs of transaction.

In the realm of local finance, there is another deficiency to consider. The privatization of ownership often leads to the privatization of “profits”, primarily reflected in the appreciation in land value. This prevents the public from accessing and reinvesting the revenue stemming from land value appreciation that local government helps create (through land use and zoning, localized infrastructure investments, etc.).

[Ingram and Hong \(2012\)](#) explains that private land and property owners in the US tend to believe that they possess the entirety of their assets, including the value appreciation generated from re-zoning. Hence, [Ingram and Hong \(2012\)](#) warn that attempts to make private owners pay for increased development rights could create political opposition. However, this should be seen in relation to the original productivity of the land combined with the bargaining power of public authorities vis-à-vis private owners.

Yet, [Fainstein \(2012\)](#) argues that once ownership of land and property has been assigned to private owners it is difficult to convert those rights and redistribute wealth beyond private ownership, despite the fact that cities are created through the collective efforts of all their citizens and value appreciation may occur through local government re-zoning and repurposing land, and making public investments, such as in public infrastructure ([Fainstein, 2012](#); [Lefebvre, 1991](#)).

[McGreal, Adair, Berry, Deddis, and Hirst \(2000\)](#) emphasize that private investors require a tangible outcome in the form of real estate in urban regenerative initiatives. They also propose that while private investors seek opportunities for capital appreciation, the public sector plays a more supportive role in delivering wider societal benefits ([McGreal et al., 2000](#)). In this way, [McGreal et al. \(2000\)](#) clearly reinforce the dilemma of public versus private ownership: private investors must have a solid business proposition with a clear capital appreciation, while the public sector does not access this capital appreciation but relies on tax revenue to invest in the delivery of provisions that do not yield profits.

[McGreal et al. \(2000\)](#) recognize that regenerating land and buildings requires considerable capital, and in deprived neighborhoods and deindustrialized areas such capital must be willing to carry considerable risks. Thus, in their survey of the motivations of private investors in urban regeneration, they find that the single most dominant motive for private investors is the perceived total return of investment, while the prevailing argument not to invest is the lack or low rates of capital appreciation ([McGreal et al., 2000](#)).

2.2. Financing

2.2.1. Public financing

2.2.1.1. Taxes. Much literature explores the declining reliability of public taxes as a source of infrastructure finance due to political disputes, voter revolts, and the competing demands presented by other social and fiscal priorities (e.g., rising share of elderly populations and pension fund liabilities) ([Ingram & Hong, 2012](#); [Steuerle, 2014](#)). The concept of “going to the voters” is widely used in the US to prioritize and raise tax revenues for investments spanning early childhood education, infrastructure and other public goods. In this way, voters in the city and county of Los Angeles successfully passed a public referendum in 2016 to increase local sales taxes in order to finance investments in a light-rail system. However, in Nashville voters rejected a similar referendum in 2018 ([Katz & Nowak, 2018](#)).

Other literature focuses on different sources of public revenue. For example, [Pagano and Perry \(2008\)](#) presents a definitive account of the principal sources of public infrastructure finance in the US between 1972 and 2002: 1) one-third from user fees and charges, 2) one-third

from property taxes, and 3) one-third from local sales and income taxes. This represents a shift away from a long-standing tradition to source public revenue from predominately property taxes. The shift was driven by a tax revolt against property taxes stemming back to the 1970s and Proposition 13 in California (Pagano & Perry, 2008).

Ingram and Hong (2012) point out that not only is it difficult for local governments to keep up with the increasing demands for public services and infrastructure provisions, local governments often do not control tax revenue, which is managed by higher-level government. Therefore, for some city governments, deploying local tax revenues as a source of local finance is de facto off limits (Ingram & Hong, 2012). Lastly, Ingram and Hong (2012) explain how in much of the industrialized world higher-level governments have curtailed financial assistance to cities due to the recent economic recession (Ingram & Hong, 2012). Therefore, there is an emergent need for new finance models that allow cities to raise investment capital locally and without raising taxes.

In terms of public revenue, Pagano and Perry (2008) propose to move to a market-based finance system for infrastructure where the beneficiaries are obligated to pay for the costs of the infrastructure service via user fees. Yet, user fees as an alternative means of revenue to taxes is a regressive means of funding infrastructure, since it falls heaviest on those with a low or moderate income, who would be the users of the public infrastructure (Pagano & Perry, 2008). Also, it does not adequately address the question of how to access investment capital upfront, prior to investment.

2.2.1.2. Land value capture and tax increment financing. Ingram and Hong (2012) shed light on a number of factors that impact the value of land: 1) public investments in infrastructure and other social services at close proximity, 2) changes in land use regulations and the re-zoning of land, 3) population growth and economic development, 4) private investments that increase land value, and 5) the original productivity and use of the land (Ingram & Hong, 2012; Hong & Brubaker, 2010).

Mulhall (2018) states that in recent years, land value capture has gained renewed interest. In the wake of the global financial crisis, governments are looking for ways to compensate for the cost of infrastructure investment and other public goods. Mulhall (2018) states that there are two primary types of land value capture: 1) the granting of development rights through the planning permission system, and 2) the recouping of land value benefits accumulated by land owners through infrastructure investments. In this way, local governments tax private developers based on the economic opportunities granted either through re-zoning, public infrastructure or other public investments.

Ingram and Hong (2012) explain that in fixing the taxation of land value, the challenge is to separate the land from the buildings, and the value generated by the public authorities (e.g., re-zoning or infrastructure) from the value generated by the private investors (e.g., building developments). Yet, Mulhall says a key challenge of land value capture is that “harnessing land assets to deliver infrastructure [...] seeks to balance the rights of the individual land owner with the interest of the collective community to achieve an equitable outcome” (Mulhall, 2018). In sum, with the use of land value capture, local governments can increase their tax revenue based on the increased value of the land deriving from re-zoning, infrastructure, or other public investments. In turn, the increased tax revenue can finance further public investments.

In the US, the practice of tax increment financing (TIFs) is comparable to the land value capture in that TIFs allow local governments to issue bonds (TIF bonds) based on future tax revenue increases (Brooks & Meltzer, 2010). TIFs are used in cases, where the public does not own the land, but it is entitled to the property tax revenue. In that way, TIFs built on the presumption that urban regeneration can be financed by bonds that are serviced and repaid by future tax increments. Thus, the proceeds of the TIF bonds are used to stimulate economic development through investments in urban regeneration, infrastructure

and other public goods. The bonds are repaid with future incremental tax revenue, mainly property taxes, resulting from investments and development activities (Brooks & Meltzer, 2010). The challenge arises when the public investments do not yield incremental tax revenue paid by private owners. In such cases, local governments are still obliged to repay the bonds, as the bonds are government guaranteed.

Conventionally, in the US, local property taxes fund elementary and secondly education, supplemented by federal and state contributions. However, when future property taxes are used for financing infrastructure, in effect, public investment capital is flowing from elementary and secondly education to infrastructure and other development activities in order to secure projected tax increment. Thus, while TIFs create new economic development opportunities in one area, such as derelict neighborhoods, it is hollowing out potential future investments in another area of public investment, such as education (Katz & Nowak, 2018).

In most instances, private developers in the US pay for their own infrastructure to be installed in their developments. The notion of TIFs is that in derelict areas (e.g., Tax Increment Financing Districts – TIFDs), there is a struggle to attract private investors without public incentives, such as infrastructure investments (Brooks & Meltzer, 2010). Yet, Brooks et al. state “regardless of who initiates the project, it is the investment of public monies in a private-sector project that is one of the most controversial aspects of TIF” (Brooks & Meltzer, 2010).

Previous attempts to deploy land value capture in the UK have been jeopardized by 1) operational complexity or 2) unintended consequences, such as a stalling of private investments and market driven developments through the prospect of future tax increments (Mulhall, 2018). The former can be reduced by increased transparency of operations in that governments should announce their intention to tax land value benefits enabling purchasers to adjust their bidding price (Mulhall, 2018). In alignment with this, the Chicago TIF Reform Panel (2011) found that even though TIFs are strong instruments for supporting businesses, creating jobs and building neighborhoods, these goals can only be achieved through a long-term mission, transparent processes and strong municipal oversight (TIF Reform Panel, 2011). Having a strong institutional base seems crucial in order to meet these goals.

Peterson (2008) points out that for developing countries access to finance is yet another challenge. Local governments in developing countries often lack access to finance due to rules prohibiting borrowing or low creditworthiness. Volatile financial markets and inflation rates further complicate the issue. The financial instabilities have implications for prospective tenants and home owners as well as governments. This, in turn, complicates the estimation of the value of public assets and predicted returns on investment for investors (Peterson, 2008).

Lack of regulation is a second challenge, according to Peterson (2008): In developing countries, governments are often authorized to acquire land from private landowners at below-market prices through compulsory purchases. Consequently, many local governments also sell land at below market value. Peterson, therefore, recommends fair and transparent rules for acquisitions and sales following market rules and pricing (Kin, 1997).

In China, local governments are allowed to raise revenue through leasing state-owned land to private developers. Chongqing local government has, since the late 2000s, used an infrastructure finance mechanism, where local government allocates land through leasing or sales to private infrastructure companies. The companies use the land as collateral to take out loans with state banks. These loans finance urban development and infrastructure. The yield stemming from urban development is used both to service the loans and finance further investments. Chongqing local government has also used this model to finance affordable housing and social service provisions (Shatkin, 2016). However, in an effort to support these efforts, national government conducted large-scale interventions, seeing the eviction and

displacement of an estimated 60–75 million rural dwellers into cities from 1990 to 2007 (Hsing, 2010; Shatkin, 2016).

In short, both land value capture and tax increment financing rely on projected revenue: 1) land value capture increases the value of public assets through re-zoning, infrastructure and other investments; the public land is subsequently sold or leased. 2) Tax increment financing issues bonds to raise capital and make investments that will incentivize private investors and grow future property taxes. Public investments are made today based on the value increment of tomorrow. In sum, challenges include 1) separating the value increment of public land from privately financed developments such as buildings, 2) justifying public investments in markets that allow private investors to reap the economic benefits of those investments, 3) using property tax revenue for development activities of a neighborhood rather than alternative investments, such as education, 4) spending public funds to repay the bonds, when the market defaults, and 5) building a long-term mission with transparent processes and strong municipal oversight. In addition to these challenges, developing countries face challenges of unstable financial markets, rampant inflation rates, and below-market rate compulsory purchase by government.

2.3. Private financing

2.3.1. Public–private partnership

Definitions of public-private partnerships center on the contractual agreement between a public agency and a private sector entity that can be used to finance, build, and operate the project (Investopedia, 2018). Another characteristic of PPPs is that they result in greater private sector participation in the delivery and financing of projects (Brookings, 2011). An important distinction is that the literature on PPPs focuses on single project financing. Therefore, it does not recognize the gains of deploying the revenue from one project to another project. In contrast, City & Port reinvests the revenue from urban regeneration in city-wide infrastructure expansion.

Warsen, Nederhand, Klijn, Grotenbreg, and Koppenjan (2018) recognize that there are multiple definitions and concepts of PPPs (Warsen et al., 2018; Hodge & Greve, 2007). Nonetheless, certain aspects are commonly used to characterize PPPs, including durable cooperation between public and private entities, shared risks and joint production of either services or products (Warsen et al., 2018).

The World Bank Group helps sharpen the scope of PPPs by stating what they are *not*: PPPs do not include service or turnkey construction contracts, which are categorized as public procurement projects and are subject to public tendering, nor do they include privatization of utilities where there is a limited ongoing role for the public sector (World Bank Group, 2018). PPPs are especially prevalent in the transport infrastructure sector where projects are often confronted with time delays and cost overruns (Flyvbjerg, 2007; Warsen et al., 2018).

Generally, PPPs seek to build mutually beneficial durable cooperation between public and private partners. Due to difficulties arising from trying to stipulate future eventualities, PPPs rely a great deal on trust and personal relations (Warsen et al., 2018; Noring, 2007). In some ways, PPPs build on a blend of public and private competencies, as public and private partners co-deliver and co-finance. PPPs rely on “hard” aspects, such as contracts, negotiations on price and time, and on “soft” aspects, such as trust and personal relations. In this way, PPPs are contract-based partnerships seeking to bridge contractual and personal relationships for co-delivering and co-financing production of public services and products (Noring, 2007).

PPPs can take myriad shapes and forms ranging from contracting out and NGO–government alliances, to community–local government cooperation (Brinkerhoff & Brinkerhoff, 2011). Kwak, Chic, and Ibbs (2009) describe how PPPs span the continuum from pure public to pure private. Noring and Nygaard (2018) present a continuum of PPPs from loose to tight collaboration starting with transaction-based collaboration, Memorandum of Understanding (MoU), purpose-driven contracts,

outsourcing, strategic partnerships, and finally joint-ventures. This article presents various City & Port PPPs including: joint-ventures with private developers for spatial optimization, and with pension funds for financing of large property developments.

Kwak et al. (2009) present three main benefits of deploying PPPs for major infrastructure delivery: 1) alleviating the financial burden of rising infrastructure costs, 2) transferring risks from the public sector to the private, and 3) increasing the value proposition in infrastructure delivery by providing greater efficiency, lower costs, and more reliable services than the public sector. Van Heerde and Bosson (2009) recount how the shift to PPPs is driven by private sector actors increasingly assuming public functions that public sector actors are either unwilling or unable to provide for growing populations with increasing demands for public services.

Despite being perceived as more innovative, and more efficient than traditional procurement forms, PPPs rarely render the promised rewards (Hodge, Greve, & Boardman, 2010; Kwak et al., 2009; Noring, 2007; Warsen et al., 2018). The reasons for this include: 1) different expectations between the public and private sectors, 2) lack of clear government objectives and commitment, 3) complex decision-making, 4) poorly defined policies, 5) inadequate regulatory frameworks, 6) poor risk management, 7) deficient local capital markets, 8) lack of mechanisms to attach long-term finance for private sources, and 9) poor transparency. In short, PPPs are challenged by the fact that nobody can foresee and account for all future eventualities.

Osei-Kyei and Chan (2017) conducted a survey of public and private actors in PPPs. They found that while the public sector actors considered open and constant communication amongst the PPP stakeholders the most critical success factor, the private sector actors were more concerned with effective management of operational risks, including the agility by which it was possible to change private stakeholders in PPP consortiums. Osei-Kyei and Chan (2017) also state that the success of a PPP hinges on the public and private stakeholders' ability to successfully manage the different project lifecycles. In particular, the operational phase of the project lifecycle is important, as it is the largest phase (Osei-Kyei & Chan, 2017; Ismail & Azzahra, 2014).

Sclar (2015) lists three sources of revenue that private investors engaged in PPP enjoy: 1) return on invested capital, 2) equity appreciation, and 3) fee income as project service managers. The equity appreciation concerns the increased value of assets after public and private investments have been conducted. In this way, PPPs benefit from land value capture, including value appreciation stemming from re-zoning and infrastructure investments. Sclar (2015) points out that private investors in public infrastructure were passive investors of government-guaranteed bonds before the rise of PPP in the 1980s. After the 1980s, private investors in PPPs became the active service managers, while the public sector's role was reduced to being a service purchaser.

In this way, as Williamson (1999) points out, the public sector is vested with new transactional costs and operational risks that are mitigated through striking a contractual balance between the PPP partners. However, these costs and risks must be reflected in the price of operations of the PPP. Ultimately, the costs are internalized by the public and private partners as the costs of doing business that eventually increase the end price (De Fraja, 1991). In this way, as many costs as possible are transferred to the public partners in order for private partners to maximize profits. To sum up, the challenge concerns how are the interests of both public and private partners to be aligned, when the public land owner requires to act in the public interest and the private sector motive is driven by the need to maximize returns.

2.4. Conclusions on the literature review

The ownership literature focuses on public inefficiency and the demand for public organizations to be accountable to the citizens. In the quest for accountability, some public organizations establish rigid

procedures, that, in turn, generate bureaucracy. In addition, public organizations must navigate demands from multiple stakeholders, shifts in governments and priorities, all of which led to increased politicization and bureaucracy. The literature on private organizations emphasizes private sector operational efficiency that leads to increased investment value, but it criticizes the accumulation of profits accruing private partners, rather than public partners. In short, the prevalent argument presented in the literature on public ownership and management center on operational inefficiencies and political interference of public organizations, while the argument concerning private organizations address challenges of profits accruing solely to private investors.

City & Port is sheltered from politics, including electoral shifts in governments and political priorities, through its mandate to maximize profits. Thus, when confronted with multiple investment propositions and political priorities, City & Port must pursue the proposition that yields the most revenue. In regards to operational inefficiencies commonly discussed in the literature on public organizations, City & Port is run as a relatively small organization with just 113 employees overseeing development projects accumulating to an annual budget of \$72 million. It is able to do so by engaging in PPPs with private partners that have specialized competencies, such as developers of retail spaces or pension funds able to take on large investments. Lastly, the argument concerning private investors accruing profits sometimes stemming from the value appreciation resulting from re-zoning, infrastructure and other public investments, City & Port maximizes profits to amass investment capital for the city-wide metro system. Thereby, City & Port serves a broader public purpose.

3. Research method

This research is based on two large empirical studies. The first study investigated Copenhagen City & Port Development Corporation (By og Havn, n.d.) as an institutional vehicle for urban development and infrastructure finance (Katz & Noring, 2017). In a subsequent research study, Noring, Verdis, and Katz (2018) investigated the adaptation of the PAC across four European cities: Copenhagen, Hamburg, Helsinki, and Lyon. Separate research was conducted for the case study of Philadelphia. The research method involved analyzing publicly available documents from the cities, development corporations and PPPs, newspaper articles, and other public reports.

The author conducted semi-structured interviews with development corporation CEOs, project managers, heads of department, and other project stakeholders, such as private developers in Copenhagen, Hamburg, Helsinki and Lyon. For the research of the Philadelphia case study, the author interviewed Bruce Katz, who has conducted research over several decades in Philadelphia, including the Navy Yard regeneration (Katz, 2018, interview). In the Copenhagen case study, interviews were carried out with City & Port members of the board of directors and with pension funds backing the investments of City & Port. In total, 16 interviews were carried out for the Copenhagen case study. For the Hamburg case study, three study trips were held and 15 semi-structured interviews were conducted. The author conducted all of the interviews between May 2016 to January 2018. The author relied on qualitative content analysis techniques to analyze the interviews. The case studies were published by The Brookings Institution (Katz & Noring, 2017) and La Fabrique de la Cité (Noring et al., 2018).

The PAC model was developed through iterative thematic analysis grounded in the interviews with the CEO, project managers, heads of department, and other project stakeholders of City & Port, alongside engagement with the academic literature for guidance. Subsequently, the PAC model was tested in our analyses on Hamburg, Helsinki, Lyon and Philadelphia. This required adjustments to the PAC model to accurately describe the development process in these cities; this comparative analysis differentiated the Copenhagen model from the models developed for Hamburg, Helsinki, Lyon and Philadelphia. Thus, though,

the Helsinki and Lyon case studies are not presented in this article, they help inform and shape the concept of the PAC as it evolved in Copenhagen. All data, draft analyses, and final reports were verified and approved by the management of the development corporations before publication.

4. Empirical study of Copenhagen City & Port Development Corporation

The subsequent empirical analysis homes in on the ownership and management of City & Port that is a blend of public ownership and private management. Furthermore, City & Port finance mechanisms stemming both from the public and private sectors, such as land value capture, PPPs and joint-ventures, are presented.

4.1. Publicly owned privately managed

City & Port has a relatively flat organizational structure to facilitate a lean and efficient approach to reporting and decision-making. Thus, all employees are no more than two levels away from top management, and most departments function in a highly independent manner and answer only to the CEO. Many projects are developed through public and private partners, which allows City & Port to function with only 113 employees. This is a relatively small staff considering its annual budget of \$72 million. Of the 113 employees, 86 are salaried professionals with individually negotiated wages, leaving 27 primarily blue-collar workers paid according to union-agreed pay scales. By operating like a private entity, City & Port is not subject to public-sector regulations, such as tendering rules and prohibitions against establishing subsidiaries and joint-ventures with private sector partners.

By national law, City & Port must always maximize revenue. This means that when there are disputes over which investments the corporation should undertake, City & Port demonstrates which investment it believes will yield the most revenue to justify its course of action (Kramer-Mikkelsen, 2016, interview). This is because the broader purpose of City & Port investments in regeneration is to finance the city-wide metro construction that will serve the whole of the city and its citizens.

Also illustrative of private management and the insulation of local politics is that during the recent recession in 2008–2011, national and local governments wanted City & Port to reduce land prices in North Harbor in order to maintain sales and revenues at a high level. However, City & Port insisted this was a bad business decision for predominately two reasons: 1) only the very wealthy pension funds would be able to purchase land during the recession, and 2) the pension funds are so wealthy that they would have sat on the land and waited out the recession—in which case the sales would not have led to the increased economic activity that the governments had hoped for (Kramer-Mikkelsen, 2016, interview). City & Port CEO Kramer-Mikkelsen (2016) also pointed out that reducing prices would have created a bad precedent and distorted market pricing for several subsequent years. In this way, due to the mandate by national law to always optimize prices and thereby revenue, City & Port was able to shelter itself from political pressure (Kramer-Mikkelsen, 2016, interview; Soetmann, 2016, interview).

Emblematic of City & Port's ability to maximize revenue, it invented a new revenue stream with the North Harbor development. This development is partly built on surplus soil pulled up from underground during the metro construction and deposited within a concrete structure extending into the sea. City & Port charges \$7.50 per ton of clean soil disposed. The area within the borders allows for 20 million tons of soil to be deposited, generating \$150 million and creating space for another one-million-square meters of buildings. With the large demand for soil disposal, City & Port has raised the level of the new land by a meter to better prepare North Harbor for climate change and rising sea levels (Kramer-Mikkelsen, 2016, interview; Soetmann, 2016,

interview).

Depositing soil in North Harbor solves multiple problems for Copenhagen. The removal of underground soil creates space for the expansion of the metro, while new landfill creates space for urban expansion. City & Port decided not to begin this expansion of the landmass, however, until it had a tenant that was interested in the land. It found one in the Copenhagen Malmö Port AB ([Copenhagen Malmö Port, n.d.](#)), which has committed to leasing the land on a long-term basis in order to add a fourth cruise terminal to its existing three terminals.

While private financing often centers on one project, location, or transaction, City & Port is able to take a city-wide holistic view of urban regeneration by aggregating individual projects, locations, and transactions into a large cross-city long-term strategy. In this way, City & Port postponed redeveloping South Harbor until North Harbor had gained a strong foothold on the market. The sequencing of market supply allowed City & Port to manage prices of leases and sales to optimize revenue.

4.2. Public financing

4.2.1. Land value capture

In order to build the metro system before the full development of the land, City & Port takes out loans against the increased value of its re-zoned and repurposed land assets to fund both the construction of the metro, basic amenities, and public infrastructure development (e.g., water, energy, roads, etc.). In this way, City & Port relies on land value capture commonly deployed in the public sector for reaping the value of public assets.

As metro construction in Copenhagen is on-going, City & Port includes contract clauses that stipulate private owners will pay an additional property tax once the metro opens to capture land value appreciation. This provides the corporation additional revenue by charging an additional \$11.41 per square meter for office buildings and \$5.71 per square meter for residential property annually for a period of 60 years after a metro station opens within a 50-meter radius. It is a profit-sharing mechanism in the sense that City & Port will receive a portion of the property value increase generated by the proximity to new metro stations. In this way, City & Port both receives the sales and lease revenue stemming from re-zoning and repurposing land and completed infrastructure, in addition to receiving future tax revenue from future infrastructure investments ([Rohde, 2016](#), interview).

City & Port borrows (generally with loans on favorable terms from the Denmark National Bank) based on the (increased) value of the land. CPH City & Port Development's AAA+ credit rating is a product of being publicly owned by the city of Copenhagen and the Danish national state. With such a credit rating, loans come at very favorable rates and, by operating like a private company, these loans are easily rent-guaranteed in the private market. As board director Carsten Koch noted, "The access to cheap loans and the ability to keep operating despite massive debts is the single most important feature of City & Port," Koch said. "Without that, we would have shared the destiny of other property developers during the recent recession, as we are just as vulnerable to market dynamics as other property developers" ([Koch, 2016](#), interview). In this way, the public ownership of City & Port grants favorable access to cheap loans against the increased value of its land, and it shelters City & Port from default despite accumulating large debts, while private management enables City & Port to operate at market terms, including optimizing revenue from its land through market pricing, PPPs and joint-ventures.

City & Port generates revenue from the leases and sales of the increased land value. It can do so, because it is an institutional vehicle that facilitates the re-zoning, infrastructure investments, and owns the land. Through land ownership, City & Port can harvest the increased value of re-zoning and the infrastructure investments directly through the disposition of its assets. The value of the land is further increased through a long-term regeneration strategy. In turn, this strategy is

implemented in collaboration with private investors.

4.3. Private financing

4.3.1. PPPs and joint-ventures

A crucial part of the reason why City & Port is able to maintain a small organization despite overseeing massive urban development projects is because it routinely enters into joint ventures with private sector partners. The corporation is required to seek permission for the establishment of joint ventures from its owners (e.g., the city and the national governments), which are given 14 days to object. To date, the owners have never opposed the establishment of a joint venture. Yet, every time City & Port creates a joint venture, decision-making competencies and power of operations are delegated even further from the corporation's owners. The wide acceptance of the deployment of joint ventures is a sign of trust by the owners in the management of the corporation.

One exemplary joint-venture is with Nordic Real Estate Partners ([NREP, n.d.](#)) on the commercial activity of the North Harbor, a partnership called RetReal North Harbor P/S. When City & Port sells a plot of land in the Århusgadekvarteret district of the North Harbor to property developers, the terms and conditions of the sale mandate that RetReal North Harbor P/S can repurchase the ground floors for commercial and retail development. RetReal North Harbor P/S retains the ground floors of the buildings in Århusgadekvarteret for continuous development of the commercial activity to ensure that the newly built neighborhoods become vibrant and buzzing with street life, including small shops, cafes and restaurants. In this way, the joint-venture with NREP helps increase and maintain the increased value of the land in North Harbor.

The joint-venture between City & Port and the pension fund ATP ([ATP, n.d.](#)) is another example of optimizing profits through engaging in activities most commonly delegated to private developers and investors. ATP was established by national law in 1964 to supplement the retirement income of senior citizens. Today, with 5 million members ATP is the fourth largest pension fund in Europe.

ATP's commercial property investment branch, ATP Real Estate, has \$5.2 billion invested in Denmark in 1.2 million square meters of office space. In addition, ATP Real Estate has invested almost \$2 billion in real estate abroad, including in the United States. To secure future obligations and minimize risk, ATP Real Estate is very conservative in its investment strategy, which is in alignment with City & Port's investment strategy. Thus, both partners typically enter into investment propositions late in the value chain, at the earliest after local building plans have been approved or after properties have been developed.

ATP Real Estate is involved in several of City & Port's projects, including the Langelinie, the Marble Pier and North Harbor ([Nielsen, 2016](#), interview). As early as in the late 1990s, ATP invested in Langelinie, which is part of the Copenhagen harbor front and adjacent to North Harbor. Today, ATP has several large of office buildings along Langelinie.

ATP owned the tip of Langelinie, while City & Port owned the tip of the Marble Pier, which is across the water. ATP Real Estate and City & Port established a joint-venture named Copenhagen Gate that merged the two land areas bridging Langelinie and Marble Pier. In total, 60,000 square meters of commercial space will be built. However, in line with its conservative strategy, the partners will not commence construction before tenants have been found for the premises.

In 2008, another joint-venture of City & Port and ATP Real Estate, called Harbor PS, began construction of the UN City. The partners recognized the long-term value of owning the UN City building, which had a secure tenant in the city of Copenhagen on a long-term lease. Given the considerable scale of the investment, another Danish pension fund, Pension Danmark ([Pension Danmark, n.d.](#)), was invited into the partnership. Pension Danmark and APT Pension both hold minority stakes in Harbor PS with City & Port controlling the majority ([Kramer-](#)

Mikkelsen, 2016, interview; Soetmann, 2016, interview; Nielsen, 2016, interview).

4.4. Conclusion on the Copenhagen PAC model

City & Port is able to combine public ownership with private management, two different models often viewed as conflicting approaches to urban regeneration and infrastructure investment. The PAC, as evolved from the City & Port study, is a hybrid model, which differs from public authorities or private corporations by being publicly owned and privately managed. City & Port is owned by the local government of Copenhagen with 95% and national government of Denmark with 5%. Yet, it is obliged by national law, to act on market premises on equal terms as any other private company for the purpose of optimizing revenue to maximize investment in the city-wide metro system. Thus, City & Port was established by local and national governments with the explicit purpose of using the revenues from redevelopment to finance construction of public infrastructure. The financing of infrastructure expansion is accomplished by leveraging and selling public assets. Repurposing the land from industrial to residential and commercial coupled with improvements in infrastructure increase the value of the assets and enable City & Port to invest and expand. In this way, City & Port deploys land value capture to engage a virtuous circle of leveraging assets, selling the assets at an increased value that then raises revenue invested in leveraging public assets, and so on.

Through its national legal mandate to always maximize profits and through its private management, City & Port is insulated from political interference concerning: 1) disputes on alternative investments in reflection of shifts in societal moods and political priorities, and 2) operational freedom granted by operating on free market terms, as opposed to following rigorous tendering regulations and refraining from establishing joint-venture with private investors and developers. City & Port optimizes revenue while channeling the yield back to the public owners in order the serve public purposes.

By setting up joint-ventures with NREP, ATP Real Estate and Pension Denmark to name but a few, City & Port is able to leverage public assets in ways that are not normally available to a public owned authority. With NREP, assets are leveraged through the creation of a mixed-used vibrant cityscape. With ATP Real Estate and Pension Denmark assets are leveraged by taking on tasks of building construction and ownership normally reserved to private investors and developers.

5. Adaptation to other cities

5.1. Adaptation to Hamburg

In August 1997, Hamburg Senate and Parliament decided that Corporation for Harbor and City Development (CHC) should move toward the urban redevelopment of Hafencity Hamburg (Hafencity Hamburg, n.d.). Hence, local government moved all the assets of Hafencity into a special asset class (SAC) (Bruns-Berentelg, 2017, interview). This allowed for the bundling and leveraging of public assets. The SAC is a legal entity, not a corporation. As such, the SAC does not undertake any activities or operations.

In 2004, Hamburg city government converted CHC into Hafencity Hamburg GmbH (HCH). Thus, since 2004, HCH is the operational corporation in charge of managing the SAC and overseeing the urban redevelopment of Hafencity. The motivation behind letting HCH manage the SAC was driven by a desire to insulate HCH from the politics of what the city considered vital long-term urban redevelopment. Illustrative of this de-politicization, the city-state government shifted the entire investment of \$2.8 billion for the metro construction of Hafencity to HCH to make sure that HCH could conduct the investment despite changes in local governments and political priorities. Thus, in Hamburg, the metro construction is financed by the city's tax revenue as

opposed to using the revenue generated from urban regeneration to finance infrastructure expansion as it is in Copenhagen.

The entire Hafencity development is scheduled to be completed by 2030 (Hafencity, 2016). When fully built, Hafencity will expand Hamburg's city center by 40% and will become a home for 14,000 people and provide workspaces for 45,000 people (Hafencity, 2017).

The redevelopment of Hafencity relies entirely on HCH as the management corporation of the SAC. HCH solicits loans from commercial banks using the assets of the SAC as collateral. The value of the assets is enhanced by re-zoning the land to residential and commercial purposes. By national law, Hamburg's government, as the owner of both the SAC and HCH, guarantees the loans and insures the assets. Since Hamburg enjoys a high credit rating, the loans come at favorable rates. The investment capital is mainly used for infrastructure (e.g., energy, sewers, roads) and basic public amenities (e.g., recreation areas, public kindergartens, public schools, and the public Hafencity University) within the areas being redeveloped by HCH. Both public infrastructure and amenities increase the value of the assets in Hafencity.

HCH is in direct and close contact with the Commission for Urban Development, and final decisions concerning all matters of the urban regeneration, including zoning, sales, leasing, tender, etc., are granted by the Urban Development and Housing Ministry. In addition, HCH informs the city-state government of its intended projects for the upcoming year. HCH operates with a budget of 20–30 years, but it estimates costs and revenues each year prior to engaging in budgetary negotiations with parliament. In this way, its long-term budget plan is adjusted annually (Noring et al., 2018; Noring & Nygaard, 2018).

Another difference from the Copenhagen example are continued port operations. With Hamburg's port still highly operational in close proximity to Hafencity, there have been difficulties regarding noise and air pollution (Bruns-Berentelg, 2018, interview). In this way, the co-existence of HCH and the port brings distinct challenges stemming from redeveloping a location near still existing industry. While the port has been obliged to scale back its physical parameters to make room for urban expansion, Hafencity feels the effects of its close proximity to the port and its industrial activities (Bruns-Berentelg, 2018, interview).

The recent introduction by Germany's federal government of an annual loan threshold of \$268 million on German states exemplifies the arm's-length relationship between federal government and cities. With a loan threshold, local government is forced to prioritize its investments, for instance, choosing between a new public school or the Hafencity redevelopment. However, due to the separation between the management corporation HCH and its asset in the SAC, HCH can restructure and embark on developments with not only public but also private assets (Bruns-Berentelg, 2018, interview).

5.1.1. Conclusion on the Hamburg adaptation

The most striking difference between redevelopment in Copenhagen and Hamburg is in the breadth of their respective mandates. City & Port finances the city-wide metro system in addition to financing the urban regeneration in its areas of responsibility. HCH has a more limited charge and only finances urban regeneration within the remits of the Hafencity, including the construction of the two metro stations. The rest of the city-wide metro construction is financed by the city's tax revenue even though the city transferred funds in a lump sum to HCH to secure the long-term strategy of metro construction. This illustrates how the organization of both HCH and City & Port shelter each entity from political interference, including shifts in political parties and priorities.

City & Port operates with its own budget, including making its own decisions concerning sales, leases, and entering joint-ventures with private developers and investors. In contrast, HCH is obliged to present its annual budget and receive budgetary approval by Hamburg state ministries and parliament. Also, HCH does not engage in joint-ventures with private developers and investors even though it engages in close dialogue with private developers and investors pre-tendering to tease

out the details of projects, including co-creating new concepts of living and working in the city.

Yet another difference is that City & Port has the national government as a founding partner and minority owner (originally with 45% and today with just 5% ownership). HCH is the product of the city-state government, consequently, it is subject to the introduction of the loan threshold by national government (Bruns-Berentelg, 2018, interview).

In this way, each city has adapted institutional and finance mechanisms in unique ways to respond to local contexts and political priorities. However, Copenhagen and Hamburg share one crucial commonality: the bundling of public assets under the management of one organization that is granted considerable freedom of operation in the market economy. This operational freedom both ensures that the development corporations are not derailed by political shifts and it grants each corporation the agility required to operate in market economies, including optimizing prices. Thus, even though the Hamburg model does not fund extensive infrastructure investments beyond the remits of its area of redevelopment, it does present a hybrid model of a publicly owned privately managed corporation that leverages the market to generate financing for urban redevelopment.

5.2. Adaptation to Philadelphia

The Philadelphia Industrial Development Corporation (PIDC, 2017) is a publicly owned privately managed organization established in 1958 to conduct urban regeneration in Philadelphia. Spurred by the mayor's office, the City Council created PIDC as a non-profit joint-venture between the City of Philadelphia and the Greater Philadelphia Chamber of Commerce to increase investment and business growth. The initial capitalization came equally from the City and the Chamber (*The Encyclopedia of Greater Philadelphia*, n.d.). The PIDC's thirty board members are appointed by the Mayor of Philadelphia and the president of the chamber of commerce. Since its establishment, PIDC has facilitated extensive redevelopment in Philadelphia, including the construction of a convention center, a new stadium, major hotels and industrial parks.

The example explored in this article is PIDC's role in redeveloping Philadelphia's US military Naval Complex. The PIDC has been working to repurpose and regenerate the 4.9 million m² area now known as The Navy Yard. The US Government decreased military spending after the Cold War, which included base closures and the drawdown of force numbers. The Defense Base Closure and Realignment Commission (BRAC) controlled this process (*The National Interest*, 2016). Throughout the early 1990s, unsuccessful attempts to save the Philadelphia yard through political and legal action eventually ended up before the US Supreme Court. Yet, the base closed in 1995. The two years leading up to the final closure saw the number of workers reduced from 12,000 to 2000 (*Politico Magazine*, 2016).

Subsequent efforts to repurpose the yard occurred simultaneous to attempts to save its federal funding. The City of Philadelphia contracted with a German firm Meyer Werft, before Governor Tom Ridge scuttled the agreement because of what he viewed as the lack of upfront investment required by the new tenant (Preble, 2005; Katz & Nowak, 2018). Eventually, the Norwegian firm Kvaerner ASA took over operations, but at a scale far below that required to save the former industrial base. In 2016, around 1000 employees labored in the shipyard back up from 330 in 2011 after an injection of \$42 million of city and state funds to subsidize shipbuilding (Preble, 2016).

In 2000, PIDC purchased the Navy Yard for \$2 million (Preble, 2016). The regeneration of The Navy Yard by the PIDC depends on cooperation with private developers and investors. PIDC selected the joint venture partners Liberty Property Trust (LPT) and Synterra Partners—a publicly traded property investment firm and a Philadelphia-based private real estate company respectively—through a competitive process in August 2002. In 2003, the three entities entered into a development agreement and began devising the Master Plan released the

following year. PIDC organizes the tax and other incentives; LPT/Synterra bring private capital, planning, and construction management; and the new tenants bring their own money (*American Architectural Foundation*, n.d.). For example, Urban Outfitters was one of the first business corporations to invest in a new office in The Navy Yard. In 2011, they invested another \$30 million buying three more buildings, those renovations financed by Urban Outfitters were estimated at \$50 million.

The PIDC focuses on developing and marketing The Navy Yard for businesses rather than the mixed-used residential and commercial purposes as in Copenhagen and Hamburg. Today, there are 150 businesses at The Navy Yard. Currently, more than 12,000 employees are working in 697,000 m² of commercial office space (Katz & Nowak, 2018).

In Philadelphia, the redevelopment of The Navy Yard is financed by a patchwork of tax incentives, loans, subsidies, and bonds at the local, state, and federal levels in addition to private capital. For example, The Navy Yard is part of a Pennsylvania state initiative with its designation as a Keystone Opportunity Improvement Zone. The PIDC uses TIF, tax-exempt bonds, and New Markets Tax Credits guaranteed by the State of Pennsylvania. The PIDC also sells off land re-zoned for commercial development to raise capital. The relationship between public and private investment is partially apparent in the 2012 accounting of \$130 million of publicly funded improvements facilitating \$700 million in private capital investment (Preble, 2016). In 2017, PIDC through its various tax mechanisms provided \$1.9 billion in financing across Philadelphia in development projects and small business loans (PIDC, 2017). To date, public and private investments have accumulated to more than \$1 billion (Katz, 2018, interview).

With the TIF bonds, the city government foregoes on investing future tax revenue, as the revenue has previously been accounted for in order to service and repay the bonds. This means that future property taxes are already designated for the TIF bonds, rather than alternative investments, such as public education, social spending, or development in other areas of the city. In the case of tax-exempt bonds and tax credits, local government will altogether forego collecting that tax revenue.

The Navy Yard had fifty-two miles of existing roads and existing infrastructure when it changed ownership, which decreased the financial burden of redevelopment (Preble, 2016). Only recently, in 2018, PIDC is considering adding a public transit line to connect the Navy Yard to the city center and other neighborhoods. Yet, first the capital for infrastructure investment must be raised, possibly made easier with federal transportation grants (Katz & Nowak, 2018; Saks, 2015).

5.2.1. Conclusion on the Philadelphia adaptation

Comparable to the PAC model presented in this article, PIDC represents a publicly owned, privately managed organization that purchased land from the US Navy after federal government's budgetary cuts led to the closure of the US Navy Yard in Philadelphia. Similar to Copenhagen, Philadelphia regeneration took place in the context of a declining industrial economy and with the purpose of spurring urban growth.

PIDC manages a diverse loan portfolio. By offering TIF bonds, tax-exempt bonds and tax credits to private investors, the public foregoes what would otherwise have been public revenue in the form of property tax. This financial model transfers revenue generated by urban regeneration to the private sector; the public sector relinquishes future tax revenue to entice private investment and private businesses reap the profits. Thus, both Brooks and Meltzer (2010) and Mulhall (2018) share the concern that TIFs are problematic because the public sector invests and then surrenders revenue to the private sector. By offering TIF bonds, PIDC and the city government relinquish the opportunity of spending future property taxes for alternative investments. With the TIF model, property taxes are used for servicing and repaying the bonds

rather than, for instance, other community investments.

Lastly, PIDC is primarily targeting businesses, rather than developing a mixed-used area. Only recently, focus has been toward developing for residential use. For this purpose, it seems crucial to provide better connectivity between The Navy Yard and the city center and other neighborhoods. Yet, unlike the Copenhagen model, PIDC has not included infrastructure financing in its business model. Therefore, it must first find the funds for infrastructure investments, as it is not in the privileged situation of Hamburg that had the capital and was able to transfer it to its development corporation, HCH, in a lump sum. Thus, while both Copenhagen and Hamburg provide capital for infrastructure investments in different ways in order to create connectivity by public transit to the city center and other neighborhoods, The Navy Yard redevelopment has not considered this until recently.

In Philadelphia despite having undergone extensive redevelopment public funds for infrastructure investments remain scarce. Thus, cities like Philadelphia that rely on taxes to finance investments in regeneration and basic infrastructure (e.g. sewer and sanitation systems, energy, local road infrastructure, etc.), may find that years down the road alternative pressing investment propositions go unmet as the tax revenue has already been accounted for in the form of tax credits and tax increment financing (Brooks & Meltzer, 2010). PIDC must raise new funds for infrastructure that will connect The Navy Yard to the rest of city, as it did not consider this type of infrastructure investment upfront and the finance model based on tax credits and tax increment does not yield the capital for such investments.

6. Conclusion on the innovative aspect of the Copenhagen PAC model

Many cities have their assets spread out across a broad array of public authorities (Pagano & Perry, 2008). In the Copenhagen example prior to establishing a single publicly owned organization (e.g. Ørestad Development Corporation and later City & Port), the different public authorities sold off land and buildings in a piecemeal manner primarily to balance their annual accounts. Thus, in order to reap the maximum benefit of their assets, it is crucial that cities are able to bundle their assets under the management of one institution. This article contributes to the existing literature on ownership and finance in cities by documenting how City & Port is able to build and sustain a long-term mission and support strong municipal oversight through public ownership because it acts as a single unified owner and manager (City of Chicago, 2011).

Ideally, the public asset corporation model should optimize the contributions from both public and private stakeholders. While theoretical principles can be established, in practice there are many examples of weak public governance, exploitative private partners, risk returning back to the public body, cost overruns, delays in delivery and so on. For these reasons, establishing clear “rules of the road” between the public owner and the private investors and developers and its subsequent operational implementation are critical.

The experience in Copenhagen is important to convey for its success in doing this where the requirement to maximize revenue is a very discrete objective incentivizing the private investors and developers. The Copenhagen PAC model is the only one of the three cases presented in this article that has a mandate by national law to maximize revenue in order to maximize investment in public infrastructure. This insulates City & Port from electoral shifts and changes in political priorities as whenever there are disputes concerning which investment proposition to choose, City & Port is bound to select the proposition, it believes will yield the most revenue. The private management of City & Port means that it is not subject to public tendering rules and regulations, as it focuses entirely on selling at the highest price (*As a different discussion not pursued here, City & Port must comply with the rule to build 25% affordable and social housing. Yet, this rule also applies to private developers.*)

The Hamburg case study presents a model that operates with more

municipal oversight than City & Port. Thus, HCH is subject to public tendering - albeit an iterative process of co-developing functional and architectural plans with private investors and developers - and a prohibition on establishing joint-ventures with private investors and developers. In contrast, City & Port deploys joint-ventures with specialized partners, which enables it to leverage its assets more than it would be able to if it acted alone. This, in turn, helps maximize revenue for further regeneration and infrastructure investments.

The Philadelphia case study presents a model that uses tax increment financing to raise investment capital for the regeneration of the Navy Yard itself, but does not include a mechanism to finance infrastructure that connects the Navy Yard to the broader city. By building infrastructure investments into the City & Port business case upfront, future concerns regarding how to fund public infrastructure are preempted. In this way, the public sector recognizes the value appreciation that it helps generate for private owners through infrastructure investment. The fact that the Copenhagen model does not rely on scarce public tax funding means that it reduces the likelihood of political disputes over public investment priorities. It eliminates hard prioritization over whether to invest in schools or roads.

The public asset corporation model in general and the Copenhagen variant of the model in particular represents the kind of innovative institutional model and financial mechanisms that will be needed to grow cities in alignment with public priorities. Expanding research that compares and contrasts alternative approaches used by cities around the world would be welcome.

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