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Public Banks + Public Water = SDG 6?

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ABSTRACT: Sustainable Development Goal 6 aims to achieve universal access to water and sanitation services by 2030; this is expected to cost an estimated US$150 billion per year. Where will this funding come from? One possibility is private finance in the form of direct equity investment from private water companies and lending from commercial banks. Evidence suggests, however, that private investments in water and sanitation have not materialised as planned due to the sector's risk – return profile. Water and sanitation are considered 'too risky' by private investors and returns insufficiently rewarding. One alternative that may help to fill the water supply and sanitation (WSS) funding gap is an as yet untapped source of public finance: public banks. There are over 900 public banks in the world, with US$49 trillion in assets; they have, however, been largely underestimated as an important source of water and sanitation funding and have also been neglected by academic research and by mainstream policy organisations such as the World Bank. There is a need to better understand how public banks can be mobilised as effective funders of public water. In this article we provide a brief history of public banking practices in the water sector, review their pros and cons, and discuss the significance of the emergence of a new type of public water operator and the potential these entities offer for financing in this sector.

KEYWORDS: Public banks, public water, finance, SDGs, remunicipalisation

INTRODUCTION

> *It is clear that the world will not achieve the Sustainable Development Goals without a fundamental shift in the international financial system.*
>
> UN Secretary-General Guterres (IATF, 2019: iii)

There is a need to rethink how essential services and infrastructure are financed. This is perhaps nowhere more urgent than in the provision of universal access to water supply and sanitation (WSS), one of the world's most important and long-standing challenges. Nearly 2.1 billion people lack access to safe, readily available water at home, and 4.5 billion people lack safely managed sanitation (WHO/UNICEF, 2017). Sustainable Development Goal 6 (SDG 6) is intended to address these gaps.

It will be an expensive undertaking. It is expected to cost an estimated US$150 billion per year to meet SDG targets 6.1 (universal and equitable access to safe and affordable drinking water) and 6.2 (adequate and equitable sanitation and hygiene for all) (World Bank, 2017: 52). It will cost considerably more to meet the additional SDG 6 targets such as reducing water pollution, implementing integrated water resources management, and protecting water-related ecosystems; the total global WSS infrastructure

development needs are estimated to require US$6.7 trillion by 2030 and US$22.6 trillion by 2050 (Ajami et al., 2018: 5). The most pressing needs are in the Global South, but high-income countries are also in serious deficit situations (Hutton, 2016); the United States, for example, requires an estimated US$1 trillion in WSS investment over the next 20 years (Tiemann, 2017: 9).

Covid-19 has further highlighted the urgency of expanding safe and affordable water services. On 23 April 2020, the World Health Organization stated that the "provision of safe water (…) is essential for protecting human health during all infectious disease outbreaks" including Covid-19 (WHO, 2020). The pandemic and its economic consequences have also contributed to a liquidity crisis for many public water operators due to falling revenues and increased costs, underscoring the urgent need for supportive financial assistance. According to the World Bank (2020: 4), finding the resources to finance water utilities is "one of the most important actions that policy makers can take in response to the COVID-19 crisis".

Increased funding alone will not solve these WSS infrastructure problems, of course, but the need for massive amounts of new funding for WSS is undeniable, particularly in middle- and low-income countries where spending will need to be "2-5 times larger than current practice" (Alaerts, 2019: 2).

Where will all this money come from? This paper investigates a source of finance that has been neglected in the literature: public banks. While public banks played an important role in the development of essential infrastructure in the 19th and 20th centuries, they fell out of favour with the pro-privatisation agenda of the 1990s. As more and more governments turn back to state-centred solutions in the post-2008 economy, public banks are resurgent; we know relatively little, however, about their role in funding water and sanitation services. This paper aims to help fill that gap, pointing to their potential as an underutilised source of finance for water and sanitation services.

The paper proceeds as follows. First, we review the available literature on financing water and sanitation services, arguing that existing sources of investment – private water companies, private banks and official development finance – are simply not happening at the scale or pace required and are unlikely to do so in the near future. Second, the paper assesses the potential for public banks to fill the financing gap, providing a brief history of public banking practices in the water sector. Third, we review the potential benefits of public banks in WSS financing, discuss the significance of the emergence of a new type of 'public' water operator, and consider the challenges these entities raise for public banks as citizens demand better accountability, participation, transparency, equity and sustainability. We conclude with a brief discussion of the need for future research into public banks as they relate to public water and sanitation.

EXISTING SOURCES OF FINANCE IN WSS

One of the principal rationales for water privatisation has long been that, in locations where public funding is inadequate, private water companies have vast sums of finance available to invest in badly needed WSS infrastructure. On paper this is true; for example, Veolia, the French multinational, had revenues of €24.4 billion (bn) in 2016, with assets of €37.9 bn, equity of €7.6 bn, and more than 163,000 employees (Veolia, 2016), making it a larger economy than almost half of the world's countries. Private water companies are also providing WSS to a growing number of people around the world, with the total population that is "served to some extent by private sector contracts" growing from 335 million in 2000, to 971 million in 2012, to 1.1 billion in 2015 (Arup, 2015: 5).

Since full divestiture is uncommon in the WSS sector, the vast majority of private sector involvement comes in the form public-private partnerships (PPPs); globally, between 1987 and 2015, more than 1900 large PPP agreements have been signed in the water sector (ibid), plus there have been a myriad of smaller-scale contracts for shorter-term agreements. Because each agreement has its own unique terms of reference, it is difficult to know definitively which party is responsible for what type of investment.

Piecing this scattered information together into a dependable compilation is thus virtually impossible and this is compounded by the fact that many contracts are not (fully) available to the public.

A growing number of PPPs, moreover, does not necessarily mean an increase in private sector spending on infrastructure; in fact, the "shift towards more 'asset light' and less capital intensive PPP models" arguably means that less private money is being spent now than in earlier phases of private sector engagement (WWC and OECD, 2015: 9). There may be more private contracts in the water sector today than 30 years ago, but capital spending has become the responsibility of the public sector, while private companies focus on operating expenses.

Investment in WSS by private water companies is also highly skewed geographically. At the high end are England and Wales with 100% private sector delivery, France with 67% of its WSS delivered by the private sector, and Spain with 63%. Delivery of WSS by the private sector has grown in China and Brazil, but water and sanitation in most countries in the world is still predominantly provided by public agencies. In the US only 15% of water is delivered by private companies, while in Germany 12% is private and in Italy it is 11% (Arup, 2015: 38). Most low-income countries are serviced predominantly by public water agencies, with private water companies showing little interest in serving these markets and showing "greater selectivity (…) in their overseas ventures" (WWC and OECD, 2015: 9). In the end, PPPs play only a peripheral role in capital investments in the water sector and they "struggle to provide more than a tiny portion of the infrastructure investment in the world" (Hall, 2015: 10).

Private banks

Can private banks provide the necessary funding? As of mid-2020, there were over 31,000 private banks in the world with more than US$230 trillion in combined assets (Orbis 2020); the largest among these are the Mitsubishi Group, HSBC and JPMorgan Chase, which together manage assets of just over US$8.2 trillion. Private banks, however, are not particularly transparent about their activities in the water sector; while there are instances of banks advertising corporate social responsibility initiatives (such as the Bank of America's US$5 million zero-interest loan to WaterEquity's programme on water and sanitation services in Asia) the amounts of capital involved are relatively minor (Bank of America, n.d.).

As a result of this lack of transparency, little is known about actual financing volumes or practices, although it is generally understood that private-bank lending for WSS is extremely low and has "declined markedly" since the financial crisis of 2008 (WWC and OECD, 2015: 27). Some private banks "have abandoned [WSS] project finance completely; those remaining have found it less profitable and their customers are finding it more expensive" (ibid). Financialisation has exacerbated the trend as nearly four decades of financial liberalisation have opened up a world market of short-term, high-return opportunities in which private banks can invest (Mazzucato, 2018). In the water sector, by contrast, there is a perceived "shortage of 'bankable' projects and creditworthy water businesses and institutions" (WWC and OECD, 2015: 54).

Private banks also only lend to WSS providers who have a reliable cash surplus with which to repay financing costs; however, many WSS operators, including those in high-income countries, do not cover their operating expenses. In low-income countries the problem is endemic, with only 15% of utilities matching operational expenditures or generating a cash surplus (World Bank and UNICEF, 2017: 14); simply put, many public water operators cannot repay their loans using their own revenues. Due to the highly localised nature of WSS services, many water operators also service small, dispersed populations. As a result, "individual investment needs are often not large enough to attract private banks, except at high interest rates, and are too small for borrowing on capital markets to be cost-effective" (Leigland et al., 2016: 3); this is particularly true in rural areas where water operators may supply only a few thousand people (Cotruvo et al., 2018).

Timelines are also a concern, with private banks and public water operators being largely out of sync and with financiers, in general, retaining power over setting terms and conditions (Bracking, 2016). Banks

want to "maintain their ability to shift quickly into different investments by keeping maturities on bank loans short, particularly if they are uncertain about the creditworthiness of their borrowers (…). By contrast, water utility borrowers have the opposite priority" (Leigland et al., 2016: 3-4).

Banks may also lack the necessary expertise to accurately assess water projects. Research shows that private banks in the water sector "tend to treat utilities and other water service providers as a subset of normal commercial lending, and offer only expensive, short-term loans (1-3 years)" (ibid: 7). This mismatch of priorities has contributed to a "lack of understanding of the water sector" on the part of private banks, particularly in countries in the Global South (ibid: 6). According to one study, "the financial industry and the water sector are rather separate epistemic communities with different language, interests and procedures" (Alaerts, 2019: 130).

Official development finance

Official development finance (ODF) refers to loans and grants from publicly owned and controlled bilateral and multilateral agencies such as USAID and the Asian Development Bank. Although ODF financing for water and sanitation rose from an annual allocation of just US$6 bn in 2003 to more than US$18 bn in 2014 (Kolker et al., 2016: 2; Ajami et al., 2018: 19), ODF remains a minor part of most countries' WSS budget. ODF funding for WSS is also "rising much more slowly than for other sectors" (Alaerts, 2019: 8); this is true even though in some countries it can be critical, such as in Haiti where the "the donor community finances all water and sanitation investments and 30 percent of the sector's operating expenditures" (World Bank, 2017: 53-4).

The bulk of WSS-related ODF funding is also funnelled through multilateral agencies, particularly the World Bank Group (Kolker et al., 2016: 3), with the World Bank Water Global Practice managing a lending portfolio that includes "177 projects totalling $24.5 billion, accounting for about 11 percent of total World Bank lending" (World Bank, 2017: 53). This is important because it allows international financial institutions (IFIs), especially the World Bank, to act as gatekeepers on WSS policy. Although IFIs may be "a minor source [of WSS finance] in absolute terms, they have a disproportionate influence [on WSS policy] through their 'halo' effect on other lenders" (WWC and OECD, 2015: 20). These multilateral institutions have enormous resources for publications and conferences, as well as providing advice in the water sector; rather than leveraging this position of authority to promote public financing options, however, the World Bank and other IFIs have used this power to promote private financing, in part through the continued use of pro-privatisation conditionalities in their lending to the WSS sector, with more than 70% of IFI financing in water and sanitation coming in the form of conditional loans (Kolker et al., 2016: 2).

Having recognised these challenges, international organisations such as the World Bank have been promoting policies of "blended finance", that is, "the strategic use of public taxes, development grants and concessional loans to mobilize private capital flows" (World Bank and UNICEF, 2017: vii). Blended finance is now the centrepiece of the World Bank's "billions to trillions" SDG agenda and its related "Maximizing Finance for Development" strategy; even though the emphasis has been on emerging and frontier markets where private investments are lowest, public incentives for private finance can be found in virtually every part of the world.

The UN Inter-agency Task Force on Financing for Development writes that, "[b]y shifting some of the risk or cost of a project from the private to the public sector, blended finance can enhance risk-return profiles for private creditors or investors" (IATF, 2019: 86). The aims are to "leverage additional funds for the sector and reduce borrowing costs compared to a fully commercial arrangement" (ibid). In the water sector it is argued that blended finance will "help overcome affordability and/or political constraints to borrowing (…) [and] can create new relationships and opportunities between the water and financial sectors, which can promote the long-term goal of increasing commercial financing" (World Bank and UNICEF, 2017: vii). There is nothing particularly original about this model, although there are new actors

and new financing vehicles such as web-based 'fintech', as well as expanded social mandates such as green financing; there is also an increased emphasis on microlending, particularly in low-income countries (Advani, 2016; Ikeda and Liffiton, 2019; Asian Development Bank, 2017; World Bank and UNICEF, 2017).

Novelty aside, evidence suggests that blended finance is having little impact on WSS, particularly in the countries it aims to target most.

To date, blended finance in developing economies has not been widely used at scale in the water sector. A few isolated experiences have been supported by international donors, but these have mostly been in middle-income countries and they have so far failed to be replicated at scale (Leigland et al., 2016: 4).

Most blended finance flows to a small cluster of middle-income countries such as Turkey, Nigeria, India, Brazil and China, with much of this being concentrated in highly profitable sectors such as financial services and energy. Only 2% of this amount is allocated to WSS (IFC, 2017; Benn et al., 2017). Data from the Inter-agency Task Force on Financing for Development (IATF) reinforces these claims; it shows that flows to middle-income countries are nearly ten times those to lower-income and least-developed countries, while only 7% of blended finance in water is aligned with SDG 6 as "most blended deals are concentrated in sectors with significant potential for economic returns" (IATF, 2019: 87-88).

Similar to other forms of private finance, the lacklustre performance of blended financing demonstrates the enormous challenges of trying to entice private capital into the water and sanitation sector – even with "comforts of various kinds" (WWC and OECD, 2015: 58) – particularly given the volume of investment required for meeting the SDGs in water and sanitation (WWC and OECD, 2015: 58; Meeks, 2017).

Private sector finance unlikely to materialise

Private sector funding for WSS therefore falls far short of the amounts for which its proponents had hoped. A recent study concluded that while international organisations continue to call for greater activity from investors, on average "private-sector finance for water has remained minor" (Alaerts, 2019: 8). While important in a few high-income countries like France and the UK, private finance does not appear to be capable of meeting the financing needs of SDG 6. This seems particularly true in the Global South where research suggests that private sector financing accounts for only "7 percent of total spending on water and sanitation"; in sub-Saharan Africa, the amount comes to less than 1% (Leigland et al., 2016: 4).

World Bank research confirms these conclusions. A 2015 study found that, globally, the WSS sector represented only 4% of total private sector infrastructure spending; this totalled only US$4.1 bn, with the bulk of it being spent in China and Brazil (Kolker et al., 2016: 3; *cf*. Wu et al., 2016). The United Nations Inter-agency Task Force on Financing for Sustainable Development (the body tasked with addressing the financing needs of the 2030 SDGs) notes, moreover, that private sector investment appears to be decreasing and is "well below the peak reached in 2012" (IATF, 2019: 61). The World Bank draws the sobering conclusion that for most public water operators, "private finance is almost non-existent" (Kolker et al., 2016: 1).

Why has the expected level of private finance failed to materialise? The reasons are various, and they speak to the structural barriers to increased private sector investment in water services. Much of this aversion stems from risk-return considerations. Early expectations of high returns and of trillions of dollars of potential revenues quickly evaporated in all but the wealthiest countries or in locations where guaranteed rates of profit had been negotiated (Bakker, 2010). Today, low levels of cost recovery and the political challenges of collecting payments from low-income households have meant that many private water companies have scaled back activities in risky locations, changed tactics to focus on more value-added niche markets and services (such as desalination), or simply withdrawn altogether from money-

losing contracts (Bauby, 2014). From the perspective of private investors, this makes sense; their remit is not to maximise public goods for the community, but to maintain and increase private returns for their shareholders (*cf.* Lazonick and Shin, 2020).

Political backlash against water privatisation may also help to explain why private water companies and financiers have reduced their financial exposure in the sector; widespread and often violent protests have served to erode expected returns (and sully the reputations) of many private water companies (Spronk, 2007; Castro, 2008; Barlow and Clarke, 2017). The growing trend towards remunicipalising water services (that is, making them public after a period of private sector delivery) has created additional concerns in the private water market, particularly after high profile cities such as Paris made their water services public once again (with French multinationals Veolia and Suez losing these contracts within France) (Le Strat, 2014; Valdovinos, 2012). Private water firms have, until now, been relatively silent on the matter, but there are signs that they are increasingly worried about what remunicipalisation means for their future (McDonald, 2019; Umler and Gerlak, 2019).

With a growing political backlash and a difficult risk-return outlook, it is little wonder that private water companies are unwilling to invest more in a sector with shrinking opportunities for recovering costs and with political threats to their very existence. These realities speak to the "serious structural constraints" of relying on private capital to fund WSS needs (Leigland et al., 2016: 2). Most private investors "[see] water as a financial risk" and for that reason have not invested in the sector (Jägerskog et al., 2016).

As a result, the vast majority of WSS funding continues to come from the public sector; public finance "remains the overwhelmingly predominant model worldwide, providing for well over 90 percent of infrastructure investment" (Hall, 2015: 10). This is affirmed by the World Bank, which notes that "sustainable and equitable [WSS] services will hinge on substantial public investment" (2017: 51). According to the High Level Panel on Water (convened by the World Water Council and the OECD), "private money can rarely fully substitute for public finance in major water infrastructure – it can only be a junior partner in most cases, and even then will need comforts of various kinds" (WWC and OECD, 2015: 58). It is common practice for water and sanitation to be "largely funded from domestic resources, principally tariff payments by users and public finance derived from taxation" (Bartram et al., 2018: 3). As concluded from a UN survey of 25 countries, 90% of water budgets come from a combination of cost recovery from consumers and government spending; only 8% comes from repayable finance and 2% from external sources (GLAAS, 2017).

Even so, the vast majority of academic and policy literature on financing WSS continues to focus on the private sector. Although aware of the dominance of public funding, the World Bank insists that it is "essential to mobilize up-front financing from private or commercial sources" (Leigland et al., 2016: 1). This emphasis on private financial solutions is also reflected generally in the finance and infrastructure literature. A comprehensive survey of the literature found that more than 75% of publications written on the topic between 1989 and 2015 focused on private sector financing of various kinds, while only 5% examined public investment (Kumari and Sharma, 2017). Clearly, more research is needed on potential public sources of financing.

PUBLIC BANKS TO THE RESCUE?

Given the reluctance of private entities to invest in WSS, are there other sources of public funds that could help governments and water operators with their growing financial needs? In this section of the paper we look at public banks as possible alternative sources.

Public banks are financial institutions that are owned and controlled by the state or some other public entity, governed under public law, or function according to a public mandate; they operate at a municipal, national and even international level (Schmit et al., 2011; OMFIF, 2017). Public banks function according

to differing logics and under different mandates. There are public banks that are highly commercialised and neoliberal in their orientation, with explicit profit-maximising mandates (such as the public universal banks in Turkey; see Yalman et al., 2018). There are others for whom profits are secondary to development and which support the provisioning of more 'patient' finance (such as with several Brazilian, Indian and German public banks; see Scherrer, 2017). Still others have mandates which put social returns on par with financial ones (such as the Banco Popular in Costa Rica or the Council of Europe Development Bank).

It is important to recognise this diversity. To date, the economics literature has tended to conceptualise banks in stark 'public versus private' terms. Neoclassical 'political' views argue that public banks persist because politicians use them for personal gain; they argue that "bureaucrats make bad bankers" (La Porta et al., 2002; Barth et al., 2006; Demirgüç-Kunt and Servén, 2010; Calomiris and Haber, 2014). By contrast, Keynesian 'development' views hold that public banks persist because they are meant to fill financing gaps in private sector lending to socially significant but low-return public good projects, especially infrastructure (Griffith-Jones and Ocampo, 2018; Naqvi et al., 2018).

Arguments around the efficiency of public banks are also divided. Neoclassical case studies and large-scale quantitative research concludes that public banks generate economic inefficiencies, underdevelopment and corruption (La Porta et al., 2002; Cull et al., 2017); meanwhile, heterodox case studies and large-scale quantitative research concludes the opposite, namely that public banks facilitate economic stabilisation, engage in counter-cyclical lending at times of crisis, and are associated with higher average growth rates in national economies (Andrianova et al., 2012; Griffith-Jones and Ocampo, 2018). From both points of view, however, public 'ownership' is a primary and fixed determinant of institutional function; that is to say, ownership form precedes institutional function.

Our conceptual framework is different. It is not public ownership, per se, that determines how public banks operate; instead, we reverse causality, focusing first on how institutional functions shape and reshape public bank activities (Marois and Güngen, 2016; Marois, forthcoming). In this alternative 'dynamic' view of public banks, the focus is on what public banks do, how they function, and why. This conceptualisation is not based on fixed notions of public versus private; rather, it allows us to excavate otherwise invisible information on causal relationships between different types of public banks, sources of funding, and governance structures, in relation to how specific public banks and public water authorities concretely manage (or do not manage) the trade-offs between being 'bankable' and enabling equitable access. The focus is on how public banks function in concrete – not abstract – socio-economic contexts.

This reconceptualisation of public banks is critical if we are to understand their potential scope and variety. It is also important to see them in relation to other financing sources and to realise that public banks can play a much larger role in the global economy than is commonly recognised. As of mid-2020, there were an estimated 910 public banks around the world (excluding central and multilateral banks); collectively, they held US$48.71 trillion in assets (Orbis 2020).[1] In total, public banks account for about 17% of global banking resources, which is equal to about 34% of the 2019 global GDP.

There is no finance sector with such substantial assets about which we know so little. There is, however, a resurgent interest in public banks since their critical role in overcoming the 2008 global financial crisis. Many academics, NGOs, activists and policy makers have come to see public banks as catalytic institutions that are able to confront major societal challenges such as climate change (Mazzucato and Semieniuk, 2017; Brown, 2019; Steinfort and Kishimoto, 2019; Berry and Macfarlane, 2019; UNCTAD, 2019). It is also important to note that public banks, like all public enterprises, were swept up in the post-1980s neoliberal privatisation drive, with their *raison d'être* being fundamentally called

[1] Specifically, the data accounts for the following Orbis-designated financial specialisations: commercial banks, savings banks, cooperative banks, real estate and mortgage banks, investment banks, Islamic banks, other non-banking credit institutions, specialised governmental credit institutions, microfinance institutions, and private banking/asset management companies.

into question in the light of market fundamentalism (Barth et al., 2006). Many public banks disappeared, and their total assets fell from around 40% of global banking resources to today's 17% (although these figures are relative, given that total private banking assets have grown phenomenally with post-1980s financial liberalisation). Public banks have persisted, however, and governing authorities worldwide have begun to create new ones. Finance in Common (a global network of public development banks which will hold its first summit in late 2020 as part of the Paris Peace Forum) has identified 450 public development banks; of these, 30 per cent have been founded since 2000 (FiC, 2020), and they continue to grow in size and number (de Luna-Martínez et al., 2018; Griffith-Jones and Ocampo, 2018; UNCTAD, 2019).

Germany, for example, has established at least nine new regional development banks in recent years. In 2012, France created BPI France (Banque publique d'investissement), and in 2013 it set up SFIL. In 2017, the Canada Infrastructure Bank came into being and, in 2009, the PT Sarana Multi Infrastruktur Bank was created in Indonesia. In 2013, the Development Bank of Nigeria was established and, in 2018, the Territorial Bank of Western Samoa was set up. Myanmar, Angola and Ghana are also considering establishing new national public development banks (de Luna-Martínez et al., 2018: 15).

Not all of these new public banks have a WSS or infrastructure mandate. Many that do have adopted a PPP. approach, with some having been explicitly established as commercial banks with the objective of lending to private companies and leveraging private money for the financing of public services; an example of this is the new Canada Infrastructure Bank (Whiteside, 2018; Loxley and Haier, 2019). There is, in other words, nothing inherently 'public' about public banks or their functions; rather, these ultimately 'dynamic' public financial institutions are shaped and reshaped by power relations, the wider context, social forces, their institutional structure, and governing priorities (Marois and Güngen, 2016; UNCTAD, 2019; Marois, forthcoming).

Many public banks nevertheless have explicit mandates to finance water services, with some having done so for decades. The Nederlandse Waterschapsbank NV (NWB), for example, was formed in 1954 with the sole mandate of lending to the country's public water authorities. Its mission is to "help clients create added value for society"; it also has a sustainable investment agenda that is "the key element of NWB's mission" and includes "climate adaptation, climate mitigation and improving biodiversity". The NWB aims to "keep the public sector's financing costs as low as possible" via its own efficient operations and through leveraging its "AAA/Aaa ratings to raise funds in an inexpensive and sustainable way" (NWB, 2018: 27). In 2018, it provided €7.4 bn in new lending for various water-related infrastructure in the Netherlands.

The German Kreditanstalt für Wiederaufbau (KfW) is another example. Founded in 1948 as part of the Marshall Plan for reconstructing post-war Europe, KfW has since expanded its scope of activities to a wide range of social, infrastructural and ecological mandates, as well as lending to low-income countries around the world (Deeg, 1999; Naqvi et al., 2018). With an asset base of €485 bn in 2018, KfW is Germany's third-largest banking institution (KfW, 2019). Water and sanitation are a major part of its lending portfolio at home and abroad; it finances projects as diverse as water for refugee camps in Jordan, compost toilets in Germany, and initiatives to advance the human right to water (KfW, n.d.). Cumulative figures are not available for its level of water financing, but KfW's Power, Renewables and Water sector is growing. Its commitment to sustainable forms of infrastructure has been particularly evident in the role it has played in the shift to renewable energy in Germany over the past 15 years, which has also served to highlight the ability of public banks to reorient their mandates over time (Marois, 2017; KfW, 2019).

NEED FOR A NEW RESEARCH AGENDA

This (potential) role of public banks in financing water and sanitation has not gone unnoticed by international policy organisations. The World Water Council and the OECD, for example, have noted the increase in public banks over the past 20 years, noting that they "will continue to grow" and "will remain

a main source of funds" for investments in WSS (WWC and OECD, 2015: 37); the World Bank also acknowledges the "important role" that public banks play in infrastructure development in general, noting that "a greater understanding of their role and operating methods is crucial to enhancing their effectiveness and contribution to development" (de Luna-Martínez et al., 2018: 7). The United Nations Conference on Trade and Development (UNCTAD) "Trade and Development Report 2019" devotes a full chapter to public bank alternatives, signalling both the contemporary renaissance in these institutions and the need for effective public alternatives in the face of limited private responses to SDG financing (UNCTAD, 2019: Chapter VI).

Despite a growing recognition of the need for more comparative, evidence-based research on public banks, there has been little in the way of follow-up. The World Bank, for example, has called for a "study of national [public banks] on a systematic and comprehensive basis", but its work to date has been limited to two surveys of a small proportion of public banks; these surveys were based on quantitative questionnaires that told little about public bank involvement in WSS financing (de Luna-Martínez et al., 2018: 10; de Luna-Martínez and Vicente, 2012).

Public banks, as a result, are largely ignored or marginalised in the literature on financing WSS, including in the majority of papers cited in this article. A 48-page document about WSS funding by the World Bank and UNICEF (2017) entitled "How Can the Financing Gap Be Filled?" does not make a single reference to public banks; a 201-page United Nations report on "Financing for Development" committed only a single paragraph to the topic while the bulk of the report was dedicated to an exploration of how "countries should continue to work to build competitive business environments, and develop project pipelines and investible projects" for private finance (IATF, 2018: 61).

Research that does discuss public banks tends to focus on their pitfalls rather than their prospects; they are often dismissed as "sclerotic", "backward", "inefficient" and "corrupt" (*The Economist*, 2019; La Porta et al., 2002; Calabria, 2015). Recent IMF and World Bank reports admit that national public banks are relevant, but for the most part their mood is negative; the majority of the commentary focuses on concerns which include "nonperforming loans that undermine their long-term solvency and profitability", "independent board members [that] are limited or nonexistent", the lack of a "well-defined development mandate", "crowd[ing] out [of] other market participants", a "lack of tools and analytical capability to assess their economic and development impact", and lending rates that are not shaped by market forces (de Luna-Martínez et al., 2018: 6-7, 45; *cf*. Cull et al., 2017). Even as public bank lending has ramped up during the Covid-19 crisis, the 2020 IMF Fiscal Monitor repeats these same 'political' views, acknowledging the need for public banks in the recovery process but criticising them for delivering lower returns than private banks (IMF, 2020: Chapter 3).

To be sure, many public banks have fallen prey to problems of elite use and abuse as well as poor operational procedures. As the Roosevelt Institute notes in its efforts to promote municipally owned public banks in the US, concerns over the risks of corruption and inefficiency

> must be rigorously addressed. In particular, it is necessary to ensure that [public banks] will not be captured by 'insider interests' that might direct resources toward projects that fail to conform to [its] founding objectives or that pursue high-risk lending activities, eroding requisite underwriting standards (Beitel, 2016: 9).

Research has also pointed to concerns over the ways in which politicians have used public banks not for personal gain but for ideologically driven structural transformation, notably to help force through otherwise unpopular transitions to neoliberalism (Marois and Güngen, 2016).

Rather than assuming the worst, however – that is, conjuring up images of self-interested managers and elites gaming the system without the checks and balances of market forces – advocates of public banks point to the potential of "enforcing compliance" with social, political, economic and environmental mandates (Beitel, 2016: 9). This is not to blindly support public banks simply because they are public;

public ownership does not determine how institutions function, but it does open up alternative possibilities. There is a need to rethink what 'public' means in an effort to improve transparency, increase citizens' participation in decision-making, and develop clearer mandates for improving the public good through public finance (Romero, 2017; Steinfort and Kishimoto, 2019).

THE POTENTIAL BENEFITS OF PUBLIC BANKS

Despite this bias, there are many potential benefits of public banks playing a heightened role in the financing of WSS (and other sectors). In addition to the examples of actual public banks funding public water, as outlined briefly above, the literature highlights a wide range of potential pro-public benefits. We summarise these here in three categories: definancialisation, decarbonisation and democratisation (Marois, forthcoming).

Definancialisation

If financialisation is about short-term, high-return imperatives, then *definancialisation* is about the possibility of public banks mitigating and reversing this tendency (Bayliss, 2014; Karwowski, 2019; Loftus et al., 2019). First and foremost, because public banks are shielded by the public sphere they need not, and often do not, operate according to a profit-maximising motive (though they can, of course, if commanded to do so); instead, they are more often oriented towards a development mandate or 'patient finance' mission (Micco et al., 2007; McCarthy et al., 2016; Barrowclough and Gottschalk, 2018; Griffith-Jones and Ocampo, 2018; Mazzucato and Macfarlane, 2019). This simple difference enables public banks to undertake a whole range of activities that are contrary to financialisation. They can, for example, act counter-cyclically, which is to say they can lend into a financial crisis when times are bad and at a point when private banks are constricting (Brei and Schclarek, 2013); in contrast to more volatile private flows of finance, public banks can also privilege long-term and stable lending (Griffiths and Romero, 2018). Finally, by focusing on the project and mandate, public banks can better coordinate lending to reduce the cost of borrowing and generate cost savings for governing authorities (ALIDE, 2018: 17); this ability is linked to how public banks benefit from sovereign guarantees, which lowers their cost of borrowing in financial markets.

Through the use of a fractional reserve system, that is to say lending over and above the actual cash reserves held, public banks can also offer a powerful fiscal advantage to state authorities (von Mettenheim, 2010). This can decrease dependence on short-term, hot flows of capital and can reduce the monopoly power of large banks (Kodrzycki and Elmatad, 2011). Public banks are also adept at spatial integration; through domestic branch networks and their regional and national developmental mandates they are able to link town and country, as well as capital rich and capital poor regions (Myrdal, 1963; Marois, 2012; ALIDE, 2018).

The fact that public banks typically operate by specific public sector laws also means they must often follow clear operational rules and reporting guidelines; these rules constrain – although do not entirely eliminate – speculation by public bank management using the bank's resources. The bank's activity is instead geared towards national priorities and, in this way, they can help to develop financial expertise within and for the public sector. India's countrywide National Bank for Agriculture and Rural Development, for example, provides specialist financial and regulatory services for the government while channelling capital from capital rich to capital poor regions (NABARD, 2019).

Decarbonisation

The potential of public banks is perhaps nowhere more urgent than in the global decarbonisation agenda. Widespread agreement around the failure of private banks to resolve the climate crisis has made room for the potentially catalytic role of public banks to respond in new and innovative ways. Public banks

have, in particular, shown the ability to respond, restructure and reorient themselves in line with the decarbonisation challenge (Mazzucato and Semieniuk, 2017; Marois, forthcoming). Empirical evidence points to how "public investors are playing an increasingly important role in financing the deployment of RE [renewable energy] technologies and are the only reason that RE asset finance has experienced any growth at all between the onset of the 2008 financial crisis and 2014" (Mazzucato and Semieniuk, 2018: 14). Their potential to develop more carbon-neutral practices in the water sector has not been studied; further study could, however, reveal potential ecological advantages arising from funding of WSS by public banks that are not demonstrated by traditional 'big-infrastructure' practices.

Democratisation

Public banks provide the potential for democratisation, that is, for society to have a meaningful say over how financial resources are used; in fact, democratised governance can be *the* causal force behind public banks' definancialising and decarbonising operations. Democratisation is a process that can, among other things, drive governance innovation and social inclusion through internalising the public interest and mobilising towards identified societal priorities. The democratisation of finance is a central and recurrent demand made by academics and community groups critical of financialised capitalism; it is highlighted, for example, in the core text of the proposed Green New Deal that is being championed by a growing number of American politicians and in the framing of the new Scottish National Investment Bank (Bernasconi-Osterwalder and Hunter, 2002; Bracking, 2016; Romero, 2017; Brown, 2019; Mazzucato and Macfarlane, 2019).

Public banks *can* have a public focus even in the context of neoliberal structural and ideological pressures. This potential is evidenced in the little-known North American Development Bank (NADB) that was created in the context of the North American Free Trade Agreement (NAFTA). While many NAFTA side agreements (such as the Commission for Environmental Cooperation) have tended to institutionalise and stifle socio-economic dissent (Marois, 2009), the NADB was purposively designed to confront social and environmental problems through new infrastructure development (Carter and Ortolano, 2000: 691). According to Hinojosa-Ojeda (1994: 301-2), the NADB was a "new type of institution designed for democratically based regional planning"; it was a bottom-up response to the problematic "lack of democratic and participatory forums in local communities" among the Mexico/US border communities (ibid). Its operations are largely focused on infrastructure, particularly WSS; from 1995 to 2018, the bank supported 57 water supply projects, 91 wastewater projects, 24 water conservation projects, and three storm drainage projects along the border region (NADB n.d.a). In order to help develop projects in communities where the necessary (public or private) funding would otherwise not have been available, the NADB employs a mix of affordable loans (including loans at concessional, below-market rates), official grants, and some private sector investment. It also provides technical assistance to utilities, state and local authorities, and other project sponsors to ensure sustainability and financial viability.

The NADB works in tandem with the Border Environment Cooperation Commission (BECC) in the selection of projects and funding decisions (Carter and Ortolano, 2000: 693). Both the NADB and the BECC accept that projects should have public involvement in the development phase and be subject to local control thereafter. Within the NADB itself, decisions on financing rest with the 10-member board of directors; this includes five US and five Mexican members, with the chairperson alternating yearly between countries. Most board members are government representatives, though its composition in mid-2019 included personnel from government agencies and academic appointments (NADB n.d.b). Initial assessments of decision-making processes highlighted the importance of the wider NADB and BECC advisory committee structure for facilitating bottom-up input from local governments, community groups and the private sector: "This participatory governance structure of NADBANK and the BECC is integral to the mission of these institutions: to develop a new type of responsive public financial entity" (Hinojosa-Ojeda, 1994: 303). Research by Carter and Ortolano (2000) underscores the importance of such community participation but also suggests that more could be done.

CHALLENGES AHEAD

Potential advantages aside, it is important to also ask where the money for public banks will come from. The first point to note is that, as outlined above, they already have vast sums of funds available and thus could make a significant impact on WSS investments in relatively short order. Governments can also channel more direct funding through public banks, which these banks can in turn magnify via the fractional reserve system, lending anywhere from two to ten times the capital injected. By building up their own capacity and their own mass of capital over time, public banks can fund public water using their own capital. At the same time, subsidies granted to polluting industries such as oil and gas can be redirected to SDG-compliant projects. In lower-income countries, national and regional public banks can be effective conduits for international development aid and grants, as well as for borrowing directly from multilaterals and large development banks on favourable terms, in this way magnifying and channelling international resources into local WSS projects. Public banks with solid enough credit ratings can also access domestic and foreign capital markets.

There is also enormous scope for strategically tapping other public funds within the public sphere, for example, from central banks, sovereign wealth funds, pension funds, insurers, and from public services and enterprises themselves (either via investments or by mandating public banks as public sector depository institutions). These ways of sourcing capital are not exotic, they are standard practice. No doubt there are more options and new innovative ways of sourcing recurrent capital flows; these may include levies of certain services, taxing tax avoidance, carbon-tax income streams and polluter-pays mechanisms, all of which are already under discussion in international policy circles (Romero, 2017; OECD, 2017).

It is also important to ask how public banks will react to a newly emerging breed of public water operators who are making accountability, transparency, participation and social equity a priority and who are opening up decision-making to a wide swathe of citizens, focusing on subsidies for low-income households, and insisting on stronger equity mandates (McDonald and Ruiters, 2012; Kishimoto et al., 2017). Many of these public water operators are at the cutting edge of a growing global pro-public movement; this movement is often being driven from the ground up by a diverse range of citizen groups that are suspicious of state engagement and hold negative views of the finance sector (Beck, 2018). How will public banks respond to these more radical demands for change, particularly in the water sector where calls for enhanced forms of publicness have been particularly strong? To what extent will they be able to learn from each other and share practices with other public institutions?

Of particular interest is the question of how public banks will respond to the growing trend towards remunicipalisation. Over the past 20 years, in more than 40 countries, there have been at least 311 cases of WSS remunicipalisation, affecting more than 100 million people (Kishimoto et al., 2017, 2020). The trend appears to be accelerating and there are hundreds of municipalities around the world that will be making decisions over the coming decade about whether or not to renew private sector contracts, with some municipalities opting to end contracts early even if in doing so they incur a fine (Umler and Gerlak, 2019).

Remunicipalisation can be expensive, with the city of Berlin being a prime example. In 2011, a coalition of activists forced a referendum on remunicipalisation in that city, demanding greater transparency and social equity from a public water provider. The referendum was successful, but legal wrangling and pressure from private capital forced the municipality to buy back the private shares of water providers at a cost of €30 bn; this reacquisition of public assets will be paid for through higher water bills for the next 30 years, "cast[ing] doubt on the sustainability of water operations [and] threatening to undermine the aspirations of the Berlin Water Table for affordable and socially equitable charges" (Lobina, 2017: 155). To what extent might public banks have played a role in this shift and to what extent are they willing to engage in remunicipalisation struggles elsewhere?

CONCLUSION

Unfortunately, no one knows the answers to these and many other questions about public banks funding public water; the required quantitative, qualitative and comparative research has simply not been conducted. The fixation of many international policy organisations on the downsides of public banks "has led to relatively little research and insight" into their positive potentials. Rather than "categorically dismiss[ing] public financing because some of the projects fail", it is important to ask what "well-designed policies for public financing" can look like (Mazzucato and Semieniuk, 2017: 43).

Better knowledge about the role of public banks in financing public water will only come with extensive, multifaceted and multiscalar research. Given the diversity of WSS needs, as well as the variety of water operators and the diverse meanings of water around the world, there will never be an 'ideal' type of public bank for financing public water, nor will public bank/public water relationships remain constant over time. It is necessary to develop an understanding of better practices and to create better policy awareness of the pros and cons of public bank financing. A more systematic, qualitative assessment of how existing public banks are working with public water operators is required, one that examines different contexts, different operational mandates and different outcomes.

In the process, existing public banks will need to open themselves up to closer scrutiny and to be prepared for critical assessments that go beyond the largely market-based quantitative performance indicators that have dominated their internal and external benchmarking to date (La Porta et al., 2002; Cull et al., 2017). So, too, must public water operators be willing to reassess their own practices of borrowing and to share positive and negative experiences with public banks; they must also be willing to explore new ways to collaborate with public banks and other public service institutions in expanding the scope of what it means to be 'public'.

Public banks may not be a panacea for resolving the global crisis in water and sanitation services; they could, however, play a much larger role in providing sustainable and stable financing for one of the most urgent global challenges of our time. In doing so, public banks could play a formative role in reshaping the future of public water services; they could also help respond to the climate crisis and, undoubtedly, to the crisis of Covid-19 and future pandemics. Progressive public water operators could, furthermore, extend their newfound principles of democratic engagement and equity to like-minded public banks, in this way helping to reverse a long-standing trend whereby finance dictates the character of water services rather than the other way around.

REFERENCES

Advani, R. 2016. *Scaling up blended financing of water and sanitation investments in Kenya*. Knowledge Note: Kenya, World Bank, Washington, DC.

Ajami, N.; Habicht, H.; Fewell, B.; Lattimer, T. and Ng, T. 2018. *Water finance: The imperative for water security and economic growth.* Stanford University: Standford. https://waterinthewest.stanford.edu/sites/default/files/water_finance_water_security_economic_growth.pdf (accessed July 2 2019)

Alaerts, G.J. 2019. Financing for water – Water for financing: A global review of policy and practice. *Sustainability*, 11(3): 821.

ALIDE. 2018. *Innovación financiera para el desarrollo local y territorial*. San Isidro, Peru: Asociación Latinoamericana de Instituciones Financieras para el Desarrollo (ALIDE).

Andrianova, S.; Demetriades, P. and Shortland, A. 2012. Government ownership of banks, institutions and economic growth. *Economica* 79(315): 449-469.

Arup. 2015. *inDepth Water Yearbook: Your Guide to Global Water Industry Data: 2014-15,* Arup, www.spml.co.in/Download/Reports/in-depth-water-year-book-2014-2015.pdf (accessed November 1, 2018)

Asian Development Bank. 2017. Catalyzing green finance: A concept for leveraging blended finance for green development. Manila: ADB. www.adb.org/publications/green-finance-catalyzing-facility

Bakker, K.J. 2010. *Privatizing water: Governance failure and the world's urban water crisis.* Ithaca, NY: Cornell University Press.

Bank of America. (n.d.). *Solving the world's safe water problem*. https://about.bankofamerica.com/en-us/what-guides-us/solving-the-worlds-safe-water-problem.html#fbid=78NUefskafD (accessed 15 August 2019)

Barlow, M. and Clarke, T. 2017. *Blue gold: The battle against corporate theft of the world's water*. Routledge: New York.

Barrowclough, D. and Gottschalk, R. 2018. Solidarity and the South: Supporting the new landscape of long-term development finance. *UNCTAD Research Paper*, No. 24 UNCTAD/SER.RP/2018/6. https://unctad.org/en/pages/publicationwebflyer.aspx?publicationid=2233 (accessed 29 June 2020)

Barth, J.R.; Caprio, G. Jr. and Levine, R. 2006. *Rethinking bank regulation: Till angels govern*. New York: Cambridge University Press.

Bartram, J.; Brocklehurst, C.; Bradley, D.; Muller, M. and Evans, B. 2018. Policy review of the means of implementation targets and indicators for the sustainable development goal for water and sanitation. *npj Clean Water* 1(3).

Bauby, P. 2014. Water globalization: The strategies of the two French "majors". In Schneider-Madanes, G. (Ed), *Globalized water*, pp. 45-61. Dordrecht, Netherlands: Springer Dordrecht.

Bayliss, K. 2014. The financialization of water. *Review of Radical Political Economics* 46(3): 292-307.

Beck, A. 2018. Water operator partnerships: Peer learning and the politics of solidarity in water and sanitation service provision. *WIREs Water* 6(1): e1234.

Beitel, K. 2016. *Municipal banking: An overview*. Roosevelt Institute: New York. https://rooseveltinstitute.org/wp-content/uploads/2016/04/municipal-banking-an-overview.pdf (accessed 12 May 2018)

Benn, J.; Sangaré, C. and Hos, T. 2017. Amounts mobilised from the private sector by official development finance interventions: Guarantees, syndicated loans, shares in collective investment vehicles, direct investment in companies, credit lines. OECD Development Co-operation Working Papers No. 36. Paris: OECD Publishing, https://doi.org/10.1787/8135abde-en.

Bernasconi-Osterwalder, N. and Hunter, D. 2002. Democratizing multilateral development banks. In Brunch, C. (Ed), *The new "public": The globalization of public participation*, pp. 151-165. Washington, DC: Environmental Law Institute.

Berry, C. and Macfarlane, L. 2019. A new public banking ecosystem: A report to the Labour Party commissioned by the Communication Workers Union and The Democracy Collaborative, Labour Party, http://labour.org.uk/wp-content/uploads/2019/03/Building-a-new-public-banking-ecosystem.pdf (accessed June 2019)

Bracking, S. 2016. *The financialisation of power: How financiers rule Africa*. Milton Park, Abingdon, Oxon, UK: Routledge.

Brei, M. and Schclarek, A. 2013. Public bank lending in times of crisis. *Journal of Financial Stability* 9(4): 820-830.

Brown, E. 2019. *Banking on the people: Democratizing money in the digital age*. Washington, DC: The Democracy Collaborative.

Calabria, M. 2015. Promises of public banks don't match reality. *American Banker*, March, www.americanbanker.com/opinion/promises-of-public-banks-dont-match-reality (accessed 28 May 2019)

Calomiris, C.W. and Haber, S. 2014. *Fragile by design: banking crises, scarce credit, and political bargains*. Washington, DC: International Monetary Fund.

Carter, N. and Ortolano, L. 2000. Working toward sustainable water and wastewater infrastructure in the US-Mexico border region: A perspective on BECC and NAD Bank. *International Journal of Water Resources Development* 16(4): 691-708.

Castro, J.E. 2008. Neoliberal water and sanitation policies as a failed development strategy: Lessons from developing countries. *Progress in Development Studies* 8(1): 63-83.

Cotruvo, J.; Craun, G.F. and Hearne, N. (Eds). 2018. *Providing safe drinking water in small systems: Technology, operations, and economics*. Routledge: New York.

Cox, A. and Borkey, P. 2015. Challenges and policy options for financing urban water and sanitation. In Aguilar-Barajas, I.; Mahlknecht, J.; Kaledin, J; Kjellén, M. and Mejía-Betancourt, A. (Eds), *Water and cities in Latin America, challenges for sustainable development,* pp. 46-67. Earthscan: London.

Cull, R.; Martinez Peria, M.S. and Verrier, J. 2017. Bank ownership: Trends and implications. *IMF Working Paper* WP/17/60. Washington, DC: International Monetary Fund.

de Luna-Martínez, J. and Vicente, C.L. 2012. *Global survey of development banks*. World Bank: Washington, DC. https://elibrary.worldbank.org/doi/pdf/10.1596/1813-9450-5969 (accessed 4 June 2019)

de Luna-Martínez, J.; Vicente, C.L.; Arshad, A.B.; Tatucu, R. and Song, J. 2018. *2017 Survey of National development banks (English).* Washington, DC: World Bank Group.

Deeg, R.E. 1999. *Finance capitalism unveiled: Banks and the German political economy*. Ann Arbor: University of Michigan Press.

Demirgüç-Kunt, A. and Detragiache, M.E. 2010. *Basel core principles and bank risk: does compliance matter?* No. 10-81. Washington, DC: International Monetary Fund.

The Economist. 2019. "Hindu Juggernaut". *The Economist*, May 25-31, p5.

FiC. 2020. *Finance in common: The first global summit of Public Development Banks*. Conference Booklet. https://wfdfi.net/2020/04/29/finance-in-common-2020-booklet-featuring-information-about-the-summit-and-public-development-banks/ (accessed 24 July 2020)

GLAAS (UN-Water Global Analysis and Assessment of Sanitation and Drinking-Water). 2017. *UN Water-GLAAS 2017: Financing Universal Water, Sanitation and Hygiene under the Sustainable Development Goals*. Geneva: United Nations, www.unwater.org/publications/un-water-glaas-2017-financing-universal-water-sanitation-hygiene-sustainable-development-goals/ (accessed 12 November 2018)

Griffith-Jones, S. and Ocampo, J.A. (Eds). 2018. *The future of national development banks*. Oxford: Oxford University Press.

Griffiths, J. and Romero, M.J. 2018. *Three compelling reasons why the G20's plan for an infrastructure asset class is fundamentally flawed.* Brussels: Eurodad.

Hall, D. 2015. Why public-private partnerships don't work: The many advantages of the public alternative. Public Services International Research Unit, www.world-psi.org/sites/default/files/rapport_eng_56pages_a4_lr.pdf

Hinojosa-Ojeda, R. 1994. The North American Development Bank: Forging new directions in regional integration policy. *Journal of the American Planning Association* 60(3): 301-304.

Hutton, G. 2016. Can we meet the costs of achieving safely managed drinking-water, sanitation and hygiene services under the new sustainable development goals? *Journal of Water, Sanitation and Hygiene for Development* 6(2): 191-194.

IATF [Inter-Agency Task Force on Financing for Development]. 2018. *Financing for development: Financing for development: Progress and prospects 2018*. New York: United Nations.

IATF [Inter-Agency Task Force on Financing for Development]. 2019. *Financing for Development Report 2019*. New York: United Nations.

IFC (International Finance Corporation) 2017. *DFI Working Group on Blended Concessional Finance for Private Sector Projects.* Washington: World Bank Group.

Ikeda, J. and Liffiton, K. 2019. *Fintech for the water Sector: Advancing financial inclusion for more equitable access to water*. World Bank, Washington, DC.

IMF. 2020. *Fiscal monitor: Policies to support people during the COVID-19 pandemic*. Washington: International Monetary Fund.

Jägerskog, A.; Lexén, K.; Clausen, T.J. and Engstrand-Neacsu, V. 2016. *The Water Report 2016.* Stockholm International Water Institute.

Karwowski, E. 2019. Towards (de-)financialisation: The role of the state. *Cambridge Journal of Economics* 43(4): 1001-27.

KfW Bank aus Verantwortung. n.d. Dossier Water. www.kfw.de/stories/dossier-wasser-2.html (accessed 15 August 2019)

KfW. 2019. Financial Report 2018. www.kfw.de/PDF/Download-Center/Finanzpublikationen/PDF-Dokumente-Berichte-etc/1_Gesch%C3%A4ftsberichte/KfW_Finanzbericht_2018-2.pdf (accessed 3 June 2019)

Kishimoto, S.; Petitjean, O. and Steinfort, L. 2017. *Reclaiming public services: How cities and citizens are turning back privatization*. Amsterdam: TNI.

Kishimoto, S.; Steinfort, L. and Petitjean, O. 2020. *The future is public: Towards democratic ownership of public services*. Transnational Institute: Amsterdam.

Kodrzycki, Y.K. and Elmatad, T. 2011. *The Bank of North Dakota: A model for Massachusetts and other states?* Boston: Federal Reserve Bank of Boston.

Kolker, J.; Kingdom, B.; Trémolet, S.; Winpenny, J. and Cardone, R. 2016. *Financing options for the 2030 water agenda.* Knowledge Brief, November. World Bank Group: Washington, DC.

Kumari, A. and Sharma, A.K. 2017. Infrastructure financing and development: A bibliometric review. *International Journal of Critical Infrastructure Protection* 16: 49-65.

La Porta, R.; Lopez-de-Silanes, F. and Shleifer, A. 2002. Government ownership of banks. *The Journal of Finance* 57(1): 265-301.

Lazonick, W. and Shin, J.-S. 2020. *Predatory value extraction: How the looting of the business corporation became the US norm and how sustainable prosperity can be restored*. Oxford University Press.

Leigland, J.; Trémolet, S. and Ikeda, J. 2016. *Achieving universal access to water and sanitation by 2030: The role of blended finance*. World Bank.

Le Strat, A. 2014. Discussion – The remunicipalisation of Paris's water supply service: A successful reform. *Water Policy* 16(1): 197-204.

Lobina, E. 2017. Water remunicipalisation: Between pendulum swings and paradigm advocacy. In Bell, S.; Allen, A.; Hofmann, P. and The, T.H. (Eds), Urban water trajectories, pp. 149-161. Basel, Switzerland: Springer International Publishing.

Loftus, A.; March, H. and Purcell, T.F. 2019. The political economy of water infrastructure: An introduction to financialization. *Wiley Interdisciplinary Reviews: Water* 6(1), e1326.

Loxley, J. and Hajer, J. 2019. Public-private partnerships, social impact bonds, and the erosion of the state in Canada. *Studies in Political Economy* 100(1): 18-40.

Mazzucato, M. 2018. *The value of everything: making and taking in the global economy*. London: Penguin-Allen Lane.

Marcelin, I. and Mathur, I. 2015. Privatization, financial development, property rights and growth. *Journal of Banking & Finance* 50: 528-46.

Marois, T. 2009. Un modelo neoliberal para institutionalizar el desacuerdo social: La comisión de cooperación ambiental del TLCAN. *Revista Vetas* (12)31: 57-66.

Marois, T. 2012. *States, banks, and crisis: Emerging finance capitalism in Mexico and Turkey*. Cheltenham, UK: Edward Elgar.

Marois, T. 2017. *How public banks can help finance a green and just energy transformation*. Public Alternatives Issue Brief. Amsterdam: TNI. www.tni.org/files/publication-downloads/how_public_banks_can_help_finance_a_green_and_just_energy_transformation.pdf (accessed 14 June 2019)

Marois, T. (forthcoming). *Public banks: Decarbonisation, definancialisation, and democratisation*. Cambridge University Press: Cambridge.

Marois, T. and Güngen, A.R. 2016. Credibility and class in the evolution of public banks: The case of Turkey. *Journal of Peasant Studies* (43)6: 1285-1309.

Mazzucato, M. and Macfarlane, L. 2019. *A mission-oriented framework for the Scottish National Investment Bank*. UCL Institute for Innovation and Public Purpose, Policy Paper (IIPP. WP 2019-02. www.ucl.ac.uk/bartlett/publicpurpose/wp2019-02 (accessed 14 July 2019)

Mazzucato, M. and Semieniuk, G. 2017. Public financing of innovation: New questions. *Oxford Review of Economic Policy* 33(1): 24-48.

Mazzucato, M. and Semieniuk, G. 2018. Financing renewable energy: Who is financing what and why it matters. *Technological Forecasting & Social Change* 127: 8-22.

McCarthy, M.A.; Sorsa, V.P. and van der Zwan, N. 2016. Investment preferences and patient capital: Financing, governance, and regulation in pension fund capitalism. *Socio-Economic Review* 14(4): 751-769.

McDonald, D.A. 2019. Will the empire strike back? Powerbrokers and remunicipalisation in the water sector. *Water Alternatives* 12(2): 348-359.

McDonald, D.A. and Ruiters, G. (Eds). 2012. *Alternatives to privatization: Options for service delivery in the global south*. New York: Routledge.

Meeks, P. 2017. *Mixed messages: The rhetoric and the reality of using blended finance to 'leave no-one behind'.* Brussels: Eurodad. www.eurodad.org (accessed 13 July 2019)

Micco, A.; Panizza, U. and Yanez, M. 2007. Bank ownership and performance. Does politics matter? *Journal of Banking & Finance* 31(1): 219-241.

Myrdal, G. 1963. [1957]. *Economic theory and under-developed regions.* London: Gerald Duckworth & Co. Ltd.

NABARD. 2019. *Annual Report 2018-19*. Mumbai, India: National Bank for Agriculture and Rural Development.

NADB (North American Development Bank) (n.d.a. *Infrastructure Projects*. www.nadb.org/our-projects/infrastructure-projects (accessed 17 July 2019)

NADB (North American Development Bank) (n.d.b. *Board of Directors*. www.nadb.org/about/board-of-directors (accessed 17 July 2019)

Naqvi, N.; Henow, A. and Chang, H.J. 2018. Kicking away the financial ladder? German development banking under economic globalisation. *Review of International Political Economy* 25(5): 672-98.

NWB [Nederlandse Waterschpsbank NV]. 2018. Annual Report 2018. www.nwbbank.com/media/uploaded/nwb-eng-jaarverslag_2018.pdf

OECD. 2015. *Annual survey of large pension funds and public pension reserve funds: Report on pension funds' long-term investments.* Paris: OECD. www.oecd.org/daf/fin/private-pensions/2015-large-pension-funds-survey.pdf (accessed 3 June 2019)

OECD. 2017. *Green investment banks: Innovative public financial institutions scaling up private, low-carbon investment*. OECD Environment Policy Paper No.6. Paris, France: OECD Publishing.

Orbis. 2020. Orbis BankFocus. Data update: 24/06/2020 (n° 1843).

OMFIF [Official Monetary and Financial Institutions Forum] 2017. *Global Public Investor 2017*. London: Official Monetary and Financial Institutions Forum.

Romero, M.J. 2017. *Public development banks: Towards a better model*. Brussels. www.eurodad.org/Public-Development-Banks-towards-a-better-model (accessed 14 July 2019)

Scherrer, C. (Ed). 2017. *Public banks in the age of financialization*. Cheltenham, UK: Edward Elgar Publishing.

Schmit, M.; Gheeraert, L.; Denuit, T. and Warny, C. 2011. *Public financial institutions in Europe.* Brussels: European Association of Public Banks.

Spronk, S. 2007. Roots of resistance to urban water privatization in Bolivia: The "new working class", the crisis of neoliberalism, and public services. *International Labor and Working-Class History* 71(1): 8-28.

Steinfort, L. and Kishimoto, S. (Eds). 2019. *Public finance for the future we want*. Amsterdam: Transnational Institute. www.tni.org/en/publicfinance (accessed 2 June 2019)

Tiemann, M. 2017. Drinking Water State Revolving Fund (DWSRF): Program overview and issues. *Congressional Research Service Report*, 7-5700, May 3, https://fas.org/sgp/crs/misc/RS22037.pdf (accessed 12 January 2019)

Umler, R. and Gerlak, A. 2019. The remunicipalization of water services in the United States. *Environment: Science and Policy for Sustainable Development* 61(4): 18-27.

UNCTAD. 2019. *Trade and development report 2019: Financing a global Green New Deal*. Geneva: United Nations Conference on Trade and Development.

Valdovinos, J. 2012. The remunicipalisation of Parisian water services: New challenges for local authorities and policy implications. *Water International* 37(2): 107-120.

Veolia. 2016. Annual and sustainability report 2016: Resourcing the world. www.veolia.com/sites/g/files/dvc2491/files/document/2017/04/veolia-annual-sustainability-report-2016.pdf (accessed 12 November 2018)

von Mettenheim, K. 2010. *Federal banking in Brazil: Policies and competitive advantages*. London: Pickering & Chatto Publishers.

WHO/UNICEF. 2017. Progress on drinking water, sanitation and hygiene: Joint Monitoring Programme 2017 update and SDG baselines, UNICEF: Geneva, www.who.int/water_sanitation_health/publications/jmp-2017/en/ (accessed 14 July 2019)

WHO [World Health Organization]. 2020. Water, sanitation, hygiene, and waste management for the COVID-19 virus: Interim guidance. April 23, https://apps.who.int/iris/bitstream/handle/10665/331846/WHO-2019-nCoV-IPC_WASH-2020.3-eng.pdf (accessed 20 August 2020)

Whiteside, H. 2018. Public works: Better, cheaper, faster infrastructure. *Studies in Political Economy* 99(1): 2-19.

World Bank and UNICEF. 2017. Water and sanitation for all: How can the financing gap be filled? Discussion Paper submitted to support the Sanitation and Water for All Finance Minister Meeting Preparatory Process, March, https://openknowledge.worldbank.org/bitstream/handle/10986/26458/114545-WP-P157523-PUBLIC-SWA-Country-Preparatory-Process-Discussion-Paper-8-Mar-17.pdf (accessed 19 May 2019)

World Bank. 2017. *Reducing inequalities in water supply, sanitation, and hygiene in the era of the sustainable development goals: Synthesis report of the WASH poverty diagnostic initiative.* World Bank Group: Washington, DC; https://openknowledge.worldbank.org/bitstream/handle/10986/27831/w17075.pdf?sequence=5&isallowed=y (accessed 19 May 2019)

World Bank. 2020. *Considerations for financial facilities to support water utilities in the COVID-19 crisis*. World Bank, Washington, DC.

Wu, X.; Schuyler House, R. and Peri, R. 2016. Public-private partnerships (PPPs) in water and sanitation in India: lessons from China. *Water Policy* 18(S1): 153-176.

WWC (World Water Council) and OECD (Organization for Economic Cooperation and Development). 2015. Water: Fit to finance? Catalyzing national growth through investment in water security. Paris: WWC and OECD, www.worldwatercouncil.org/sites/default/files/2017-10/WWC_OECD_Water-fit-to-finance_Report.pdf (accessed 10 April 2019)

Yalman, G. and Marois, T. and Güngen, A.R. (Eds). 2018. *The political economy of financial transformation in Turkey*. Abingdon; UK: Routledge.