



# Financing public sector investment

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## 1 INTRODUCTION

Globally, there is a massive shortfall in infrastructure investment. This is the result of a combination of several factors: (i) the continued rise in the global population; (ii) the ongoing process of urbanisation; (iii) a shortage of public spending on infrastructures due to the legacy effects of the Great Recession and the need to consolidate public budgets; and (iv) new challenges such as climate change and the IT revolution that require additional investments. The infrastructure gap is felt in developed countries as much as in emerging market and developing countries. In Europe, public investment at the municipal level has been hit particularly hard. In spite of substantial interest from the private sector, shortages of funding continue to be a major (though not the only) bottleneck on the path towards higher investment volumes. Using the example of Berlin, this article looks at some trends in urban infrastructure policies and discusses alternative sources of financing.

## 2 THE ROLE OF CITIES

Currently, more than 50% of the global population live in urban areas. By 2050, 70% of the global population and 86% of the OECD population will live in cities (OECD, 2012). This is not only an unprecedented development in the history of humankind, but is also a reflection of the extent to which cities are a representation of modern forms of living.

Most large cities are growing fast – they are magnets. Berlin, for example, has gained around 50,000 new citizens annually since 2011. The attractiveness of cities extends to a multitude of different groups. Cities attract internationally mobile knowledge workers as well as economic migrants looking for a better life. Industries that thrive on human network effects – such as advertising, finance, software engineering and consulting – cluster in cities, and so do research and academic institutions that benefit from knowledge spillovers.

Given their importance, cities will inevitably be the locus where the challenges for mankind manifest themselves distinctively and in stark form. At the same time, cities have characteristics that predestine them to providing solutions to these challenges. They are the natural locus for testing new technologies (“smart cities”) and for combating climate change (“green cities”). Similarly, as so often in the past, cities are not only the preferred destination for migrants, but, given their diversity, they are arguably also the best place for the integration of those migrants into society. More generally, cities appear to better at combatting poverty than rural areas (UN Habitat, 2011:13).

Considering the unabated growth in the global population, cities, with their higher population density, offer unique chances for the optimization of resource use. The challenge here is to make cities more compact without reducing their liveability. The more compact a city lay-out the less degradation of farmland takes place because urban sprawl is reduced, and the less is the environmental burden of commuter traffic. Compact cities also increase the efficiency of network infrastructures, as they offer a higher user density.

Compact, efficient network infrastructures also make it easier to implement new technologies and to finance such changes. This holds true for private as well as public capital. For private capital, cities with their high numbers of potential users facilitate the investment case for large network investments as investment per user shrinks and revenues quickly reach critical mass. For public capital, too, per capita investment costs are lower. In addition, cities usually also have some authority over the financing mechanism associated with such investment projects – which is not only important for the financing of the project per se, but can also be used as a steering mechanism to influence user behaviour: Thus, e.g., toll schemes for city centres simultaneously raise financing and influence road usage. Also, looking beyond finance, cities usually have decisive authority over local infrastructure projects and are therefore well-placed to guide the course on the environmental and sustainable aspects of such projects (Merk et al., 2012:7).

Yet, while cities are the answer to many economic, social, and environmental challenges, they are limited in their capacity to play this role: while cities are often economic powerhouses, they also tend to attract a disproportionately large share of economically and socially weaker citizens. This puts a marked burden on social spending. At the same time, continued migration into the cities requires substantial investment into expanding and upgrading public infrastructure – which, of course, comes on top of the normal requirement to continually renew the existing infrastructure. All of these demands on cities' budgets come at a time, when public sector infrastructure is already strained after the economic impact of the Great Recession after 2008, decades of lean government, and neoliberal thinking.

### 3 REMUNICIPALISATION

As regards the latter, there has been a substantial shift of opinion in recent years in Germany. After a long period during which privatisation of public-sector entities was *de rigueur*, municipalities and cities have rediscovered their interest in owning companies providing public infrastructure.

The driving force for this development has been a substantial disenchantment with the privatisation of these services. Instead of delivering better services and lower prices, privatised general public service companies have often offered low service quality, have neglected investment, and have misused their monopoly positions. The latter has been particularly problematic in the case of network industries such as energy distribution, water supply and sewage, which have the characteristic of a natural monopoly and are therefore particularly prone to the exploitation of monopoly power (Höffler, 2013:72-73). Regulation, which was expected to keep these potential downsides of privatisation in check, has often proved to be too weak or inadequate, or has been captured by private interests.

At the same time, over recent years, regional and municipal governments have often improved their administrative capacity, introduced modern management techniques and increased the efficiency of public service provision. They are hence not only more confident, but also actually more able to match the quality

and efficiency of private sector companies in the supply of such services. In addition, municipal and regional governments have realised that many of the public policy objectives such as fighting climate change can be mastered more effectively if local governments do not only regulate but are actually the owners of the means of production or distribution (Höffler, 2013:76-77).

Against this background, in Berlin, too, the city government has been active on this front:

- The public housing associations are increasing their housing stock – from 300,000 apartments a few years ago to 400,000 in 2025.
- The water supply is state-owned again. We repurchased the “Berliner Wasserbetriebe”, since then running the company each year with a surplus and at the same time increasing investment significantly.
- We founded a new municipal utility for energy, competing for the concession to distribute electricity and gas, and another unit to increase the speed of de-carbonisation.

Even before these moves, Berlin had already been a sizeable economic actor in its own right. The city is the (majority) owner of more than 50 companies with a combined turnover of EUR 8.1bn, an equity of EUR 10.1bn, EUR 54bn in total assets and employing 50,700 people (on an FTE basis). In 2016, these companies turned in a profit of EUR 708m and invested more than EUR 2bn (Senatsverwaltung für Finanzen, 2017). For comparison: investment from the city’s budget directly amounted to EUR 1.7bn. The city government’s objective is to raise both to a level of EUR 2.2bn.<sup>1</sup>

#### 4 FINANCIAL SITUATION OF MUNICIPALITIES IN GERMANY

A precondition for a higher level of economic activity by communities is financial soundness. But the budgetary room for public investments is within tight limits for most cities.

While the financial situation of municipalities has, on the back of a benign overall economic environment and higher employment levels in particular, improved considerably in recent years in line with the improved fiscal situation of the public sector in Germany in general, the financial status of many municipalities continues to be precarious. Overall, Germany’s municipalities have posted a solid financial surplus of more than EUR 4bn in 2016 and EUR 9.7bn in 2017 (Deutscher Städtetag, 2017:5; Destatis, 2018). But many municipalities and even some of the Länder (states) face structural deficits. Problems are concentrated in those municipalities that suffer from high unemployment, negative demographics, and high exposure to social problems with a large share of dependent citizens. Thus, financial constraints and indebtedness of municipalities are concentrated in parts of North Rhine-Westphalia, Rhineland-Palatinate, Hesse, and large parts of Eastern Germany.

<sup>1</sup> This involves some double counting, as part of the investment by firms is re-financed by apportionments from the city’s budget.

Many of these municipalities have resorted to using short-term credit lines to cover structural deficits exposing them to a severe interest risk as well as debt problem. If their finances improve, financially weak municipalities will, therefore, tend to reduce their debt rather than expand investment, even in the full knowledge that this will impede their long-term growth opportunities. Already today, however, the contrast in investment levels between municipalities is indeed stark: In 2016, e.g., physical investment of Bavarian municipalities stood at EUR 517 per capita, whereas those in North Rhine-Westphalia clocked only EUR 196. More generally, municipalities in the former West Germany recorded per capita investment of EUR 327, those in the former East Germany EUR 235 (Deutscher Städtetag, 2017:17; Destatis, 2018). A structurally similar pattern has been evident for at least a decade. This will aggravate the divergence between stronger and weaker municipalities. It is therefore advisable that, when the national or the federal-state (Länder) level advances funds for investment purposes to the municipal level, these funds are being tied to specific purposes ensuring that they actually flow into investments.

Overall, between 1991 and 2013, within 12 years, the proportion of investments in the overall budget of municipalities was halved and totalled only 10% at the end of the period. Closer analysis reveals that this is the result of several factors: first, some reduction is a natural corollary of the phasing-out of the post-unification boom. As the infrastructure in Eastern Germany was gradually brought up to Western standards over the 1990s and early 2000s, investment outlays could be reduced. Second, the steady expansion of social spending, which has expanded in economically good as well as in bad times, has eclipsed investment spending. Thirdly, highly indebted municipalities are legally obliged to bring their finances back into order and are closely supervised on the ensuing consolidation path. As investment spending is a “soft target” in budget consolidation, it is usually hit disproportionately when municipalities try to rebalance their budgets.

While public investment patterns vary across European countries, the financial weakness of the municipalities is particularly grave as most of the investment takes place at that level. According to the EIB, roughly 50% of public infrastructure investment takes place at the municipal level. Against this background it is a matter of concern that more than a third of municipalities report that investment over the last five years has been below needs (EIB, 2017:12).

## 5 CONSTITUTIONAL DEBT BRAKE

In Germany, efforts to push up investment levels quickly are hindered not only by financial and administrative but also by institutional constraints. In 2009, the federal level and the Länder decided to change Germany’s constitution (the Basic Law) by adding a new clause that requires the Federal Republic and the Länder to balance their budgets.<sup>2</sup> In principle, budgets will henceforth have to be balanced

<sup>2</sup> For an overview, see e.g. Bundesfinanzministerium (2015).

without the assumption of new debt. Unlike earlier incarnations of debt brake mechanisms the new debt brake will no longer distinguish between consumption spending and investment spending; both types of expenditures will have to be financed out of current revenues.<sup>3</sup>

After a long transition period, this provision will take full effect in 2020. The debt brake marks a substantial break with the past and will require a fundamentally changed attitude towards and new techniques for budget policies, in general, and the financing of public services and infrastructures, in particular.

Unlike the national and the federal-state (Länder) levels, German municipalities are not covered by the constitutional debt brake. In principle, therefore, they will still be able to finance investment by issuing new debt even after 2020, subject to their creditworthiness still being intact, of course.<sup>4</sup> It should also be noted, though, that municipalities may be affected indirectly by the debt brake if their respective Land is forced, in order to balance its own books, to reduce its financial allocations to the municipal level.

However, the three German city-Länder (Berlin, Hamburg, and Bremen) fully fall under the debt brake provisions. For them, financing investment after 2020 will become more challenging and will inevitably require that all available funding sources will be used. For some time now, this has led to an active search for financing models beyond traditional debt finance.

## 6 ALTERNATIVE FINANCING MODELS

Looking at the possible alternatives, the following options to improve the financial situation of cities are available: increase of tax income, improvement of tax collection, regrouping budget allocations from consumption to investment, use of budget surpluses, user-based financing, mobilising private funding and external funds (inter alia EU funds, such as the European Fund for Strategic Investments – EFSI). They are, of course, not mutually exclusive, but should be used in sensible combinations to increase public-sector investment. When choosing, the choice made by any given city will depend, inter alia, on the overall financial situation of the city, the project to be financed, and the sophistication of financial markets.

### 6.1 INCREASING TAX INCOME

Higher tax revenues are the most obvious choice to finance an increase in the volume of public investment. Higher tax revenues can, of course, be the result of either higher growth and employment or increases in tax rates. Fortunately, in Germany and in Berlin, tax revenues have increased substantially over the recent

<sup>3</sup> Previously, the federal level as well as many Länder had constitutional provisions, which allowed governments to run deficits up to a maximum volume that was equivalent to the volume of investment. However, such rules were frequently evaded by flexible and imprecise definitions of what constitutes public investment.

<sup>4</sup> Incidentally, the fact that municipalities are not covered by the debt-brake provision may actually induce Länder to shift tasks and the corresponding financing obligations to the municipal level. Cf., e.g. Brandt (2015:54).

years on the back of the benign macroeconomic environment without any need to resort to changes in the tax-code.<sup>5</sup> Between 2010 and 2017 total tax revenues at the federal, Länder and municipal level rose from EUR 530.6bn to an estimated EUR 734.5bn (+38%). Total tax revenues are projected to increase to EUR 858bn by 2021 (Bundesfinanzministerium, 2017:21), providing ample fiscal space for public sector investment if funds are allocated accordingly.

However, increased tax revenues are obviously not available exclusively for higher investment. There are other substantial demands for spending on the budget, which must also be met. Apart from the usual drift in spending, which is driven by higher wage demands by public sector employees and inflation in general, social spending in particular is increasing in spite of the benign conditions in labour markets in Germany. The widening of income inequality and the increase in the number of precarious work contracts are probably to blame for this. In addition, additional expenditures for the admission and integration of refugees constitute a considerable demand on public funds, which amounts to roughly EUR 1bn (in 2016, projected to be less in the following years) in the case of Berlin alone.

## 6.2 IMPROVING TAX COLLECTION

The Panama Papers and other leaks have, once again, revealed the extent of international tax avoidance. Zucman (2014:56), e.g., estimates that tax evasion results in lost tax revenues on private wealth of EUR 130bn annually. The publication of such evidence comes at a time, when public opinion towards tax avoidance and tax evasion appears to be changing. They are no longer considered trivial offences, but instead are regarded as unfair behaviour that shows a lack of solidarity with the community at large. Tax intake that the state is denied is money that is missing to finance public services – and this gap is felt by the citizens on a daily basis.

Considerable efforts are being made, especially at the level of the OECD and at EU level, to stamp out the most egregious forms of tax evasion and tax avoidance. The OECD's *Base Erosion and Profit Shifting* (BEPS) aims at reducing the ability of firms to shift profits to low-tax jurisdictions. Similarly, the EU employs a "name and shame" approach to pillory non-cooperative tax havens. While these efforts are laudable as much as overdue, it is obvious that they will not result in a substantial increase in tax revenues in the short-term. They are therefore unlikely to be a major funding source for investments any time soon.

## 6.3 ALTERING COMPOSITION OF BUDGET

The budget consolidation in the past few years – especially at the level of the federal states and municipalities – was to the detriment of investments. As the EIB

<sup>5</sup> Actually, the fact that tax rates were not lowered in spite of the strong growth in tax revenues contributed to the strong rise in tax intake, of course. The reluctance to lower taxes probably is a positive side effect of the debt brake as it discourages governments to risk revenues. Even in the ongoing coalition negotiations at the federal level plans for potential tax reductions were and are strictly limited to a volume which would not compromise the objective of a balanced budget. Deficit-enhancing tax reforms such as the one currently designed in the US apparently are anathema under the debt brake regime.

(2017:11) notes: “Infrastructure investment has been hit by fiscal consolidation that has been biased against capital expenditure, with prioritisation given to current expenditure such as social transfers.” The reason is political: scaling back investments is – at least in the short term – easier to pull through politically than social spending, as the effects are not felt immediately by the citizens.

However, if such a strategy is pursued over an extended period (such as in the years of fiscal consolidation following the public debt crisis in Europe, starting in 2011), public infrastructure will start to deteriorate markedly. Today, the public is much more aware that such neglect is harmful. Keeping the state lean may be a desirable objective – starving the state certainly is not, especially not for the poorer members of society that do not have access to privately funded alternatives, such as private schools, gated communities, and helicopters.

Still, there is a limit to shifting funds within budgets in favour of a greater share of investment: consumptive expenditure is to a large extent legally prescribed and, hence, cannot be scaled back without politically difficult legal changes (if at all). Similarly, expenses for personnel cannot be reduced in the short term and with increasing public services this is not even desirable.

#### 6.4 USE OF BUDGET SURPLUSES

The sound condition of public budgets in Germany has sparked an intensive and controversial debate on how the resulting budget surpluses should be used. From an economic point of view, the starting point for any deliberation should be the recognition that unplanned budget surpluses are the result of unexpected higher revenues or lower expenditure than planned. The unexpected nature of these two sources suggests that such surpluses tend to be of a transitory nature. This, in turn, suggests that they should not be used to finance permanent expenditures.

If this logic is accepted, it follows that budget surpluses should, to the extent that they are not used to retire existing debt, be used for discretionary, additional investment purposes rather than for an increase of public consumption.<sup>6</sup> By doing so, the investment level can be re-adjusted should there be no surplus in the following year. Moreover, such a rule is also economically justified in light of the aforementioned fact that investment spending is usually the first victim in times of unexpected budget shortfalls.

Incidentally, Berlin is following such a strategy: in 2014, the city passed a law stipulating that budget surpluses be allocated, at the parliament’s discretion and subject to the obligations Berlin has for consolidating its budget, to additional investments and the retirement of existing debt. In addition, a reserve fund (“sustainability fund”) has been established and filled with a target volume of 1% of

<sup>6</sup> Incidentally, this has also been one of the recommendations by the Expert Group on Strengthening Investment in Germany (the so-called Fratzscher-Group) that was set up by the Federal Ministry for Economic Affairs (Expertenkommission, 2015:38).

total budget volume (currently EUR 290m). This fund is designed to serve as a reserve for the years after 2020 to cover unexpected shortfalls in tax revenues during a recession. To illustrate: in 2016, out of the total budget surplus of ca EUR 1.3bn, EUR 870m was allocated to the investment fund, EUR 137m went into the retirement of legacy debt, and EUR 290m was put into the sustainability fund.

### 6.5 USER-FINANCED MODELS

As yet another financing mechanism, cities can impose user fees on their public services. User fees actually serve two purposes simultaneously: (i) they provide funds to finance those services, (ii) they can be used to steer the behaviour of (potential) users.

Cities have some discretion over the design of user fees. Specifically, these can be fine-tuned to achieve desired policy-outcomes. Thus, e.g., congestion charges, variable parking fees and differentiated property taxes can exert considerable influence over transport modes, user behaviour and land use.

Moreover, user fees and local taxes or charges can be combined effectively to achieve the desired outcomes. User charges on road congestion, for example, are likely to be more effective when combined with attractive public transport services and prices (Hammer, 2011:76). Charges and taxes can then be used either to finance investments in public transport services or to subsidise user fees for such services.

Having said this, a differentiation needs to be made between models in which user fees are cost-covering and those where this is not the case. Full cost recovery can be found in the areas of telecommunication, energy (pipelines, electricity), but also with fairs, water supply and sewage. In those cases, debt financing is often a possibility as a complementary source of funds.

In contrast, user fees only partially cover costs in areas such as urban public transport, theatres, and operas. While coverage rates vary, usually user fees only cover current operating costs, but do not cover depreciation and investments. For instance, Berlin's public transport company, the BVG, had a turnover of EUR 672m, which covered personnel costs (EUR 600m), but did not cover other operating costs (EUR 370m), or interest payments (more than EUR 36m), or depreciation (EUR 212m).

In those cases, cities cover shortfalls either by cross-subsidising public sector services within a holding structure (typically, profits made by water companies are used to subsidise public transport<sup>7</sup>) or allocate funds from the general budget to the transport company (in Berlin's case ca EUR 500m p.a.).

<sup>7</sup> As Höfler (2013:74) argues, such a cross-subsidy can actually be an efficient pricing model according to the Ramsey-Boiteux-rule.

**Case study: Berlin's BVG**

The BVG is facing huge challenges in the coming years. While on the one hand, the number of inhabitants and user numbers are rising markedly, BVG's fleet of underground vehicles is on average 24 to 26 years old. The renewal and expansion of the underground wagon fleet will cost around EUR 3.1bn, an investment that will need to be recouped over the next 35 years. The BVG itself will invest into the fleet, but will leave the financing arrangement to a finance company. This company will be a fully owned subsidiary of BVG. It will be responsible for attracting external capital for the necessary investment.

**6.6 MOBILISING PRIVATE CAPITAL<sup>8</sup>**

Recently, cities have also been highly successful in mobilising private capital. For private investors, investment in cities carry distinct advantages. Risks and opportunities of such investments are easier to predict than in rural areas, a critical mass of users is achieved more easily and contracts can be negotiated with a single administration rather than multiple actors. Cities, especially well-known global cities, also hold the prospect of being well-advertised show-cases where new technologies or financing structures can be put on display for a world-wide audience by technology companies and financiers.

In addition, in times of sustained low interest rates on the financial markets private investors are greatly interested in infrastructure investment. In these circumstances, insurance companies, pension funds, and the like are interested in investments with stable and predictable returns. Infrastructure investments are also attractive as a means of portfolio diversification as the correlation of returns is lower than for other asset classes. Finally, the asset class provides a hedge against inflation, as user fees and/or concession arrangements are usually linked to inflation rates (WEF, 2014:7).

In spite of this, however, privately funded infrastructure remains the exception rather than the rule: on the one hand, many private investors shy away from such investments as the framework conditions are not reliable enough (WEF, 2014:11). Regulations are often changed ex post, invalidating any ex ante calculation on the viability and profitability of such an investment (Laboul and della Croce, 2014:14).

On the other hand, there are reservations from the public side: as mentioned before, experiences with the privatisation of public infrastructure, especially when it comes to municipal services, are mixed. The public mood is leaning towards remunicipalisation.

<sup>8</sup> For reasons of brevity, "private capital" is used here as a catch-all for a diverse group of private capital, which encompasses, inter alia pension funds, insurance companies, family offices, and endowments. All of these have their specific characteristics which leads them to favour different combinations of debt and equity instruments and gives them different risk-return preferences (WEF, 2014:10).

This also holds true for public-private partnerships, or PPPs. In principle, these can be a useful instrument to finance public infrastructures, especially under the conditions of tight budgets. According to Hammer et al. (2011:120), PPPs are mostly used for financing transport infrastructure and to a slightly lesser extent water (30%) and buildings (21%). PPPs can be useful, but only under certain conditions. But as the OECD notes: “There is, however, no indication that PPPs would be better suited to achieve green growth goals than traditional procurement” (Hammer et al., 2011).<sup>9</sup> Specifically, PPPs are critical when they are only chosen because the implicit debt obligation of the state incurred in the context of a PPP project does not appear on the cities’ balance sheet and is therefore irrelevant for debt brake mechanisms.

Even if these reservations were not existent, private financing would not be suitable for all public infrastructure. Many areas, for example schools, are not at all attractive for private investors, and hence, this financing mechanism is not available for such projects.

### 6.7 EXTERNAL FINANCING/EU FUNDS

Funding from the European level has long been an important element in the financing of public infrastructure in EU member states. Two major sources have been the EU structural and cohesion funds for regions with below average p.c. incomes and EIB loans. More recently, the spectrum of potential sources available has been enriched by EFSI, which is part of the so-called Juncker Plan to increase the level of investment in post-crisis Europe.<sup>10</sup> Generally, the Juncker Plan is laudable and it is an important signal on the political priorities of the European Commission.

The Juncker Plan recognises the need of state measures to enhance investments; it is needless to say that recognising the important role that the state has to play has not always been part of the Commission’s philosophy. Furthermore, the Juncker Plan constitutes progress as it is a comprehensive plan; it does not only provide a financing mechanism (EFSI), but also puts emphasis on (i) improving the framework for investments by means of appropriate regulation and structural reforms, (ii) advisory services on how to run complex investment projects, and (iii) developing a project pipeline that not only prioritises projects, but also makes them publicly known so that private investors can express their interest.

The greatest value of EFSI lies in the fact that it aims at closing a gap in the financing spectrum that cannot be covered through the private capital market: EFSI is designed to focus on those kinds of investments that are likely to cover their costs,

<sup>9</sup> There is a heated debate in Germany currently on the use of PPP to finance the building of highways. The National Court of Auditors strongly rejects the use of PPP for this purpose arguing that this form of financing is too expensive.

<sup>10</sup> The Juncker-Plan was first presented by the European Commission (2014) in November 2014, and enacted by Regulation (EU) 2015/1017 of 25 June 2015.

including cost of capital, but which are either too risky or too low-yielding to attract private capital.<sup>11</sup>

It should be noted that by focussing on these kinds of projects, EFSI can lose money on individual projects. However, this is part of its conceptual design and should not be a cause for concern. Conceptually, EFSI is equivalent to a private equity fund and, hence, should not be expected to make a profit out of every investment, but to be profitable over its entire portfolio. Characterising EFSI as a private equity fund also implies, by the way, that the capital of EFSI should be increased regularly to keep its volume relative to the GDP on the same level.

## 7 CONCLUSIONS

The need for investment is not in doubt. Public investments are a catalyst for sustained and sustainable growth. However, to reap the benefits of a strong public sector infrastructure, cities need to invest with a long-term perspective and in a continuous manner. Arguably, continuity in public-sector investment that avoids boom-and-bust cycles is even more important than the actual level of investment.

The answer to the question of how to finance this investment is, however, less clear cut and has so far been given far less weight in discussions. If we compare the needs for investment with the capacity of the potential sources discussed above, one thing becomes clear: a mix of financing sources is needed to provide a steady stream of public sector investment. Each city needs to find its own mix, preferably one with the least negative trade-offs in terms of growth.

The public sector must also meet stronger requirements than the private sector. The conduct of business must be transparent, and a responsible use of taxpayers' money must be at the core of public enterprises. All public enterprises should produce positive returns when subsidies are paid, and the level of these subsidies must, of course, be defined *ex ante* so that companies have an incentive to improve their financial performance and produce positive results. Public enterprises also should not be capitalised with more equity than is needed.

Incidentally, meeting such high standards also protects public enterprises against debates on their privatisation. Providing high quality and efficient services leads to a high level of satisfaction on the part of citizens – and this satisfaction offers the best protection against the provision of such services by public enterprises being questioned.

<sup>11</sup> Incidentally, with respect to public-sector projects, it is a shame that this important group of low return investment projects (a typical example would be projects to increase energy-efficiency) were added to the list of eligible projects only after the intervention of the EU-Parliament and only in a relatively indirect way.

## REFERENCES

1. Brand, S. 2015. Paradigmenwechsel in der Kommunalfinanzierung – der lange Schatten der Finanzkrise. *Wirtschaftsdienst*, 95 (1), pp. 51-55. <https://doi.org/10.1007/s10273-015-1777-z>
2. Bundesfinanzministerium, 2015. *Germany's Federal Debt Brake*. Berlin: Federal Ministry of Finance. Available at: <[http://www.bundesfinanzministerium.de/Content/EN/Standardartikel/Topics/Fiscal\\_policy/Articles/2015-12-09-german-federal-debt-brake.pdf?\\_\\_blob=publicationFile&v=6](http://www.bundesfinanzministerium.de/Content/EN/Standardartikel/Topics/Fiscal_policy/Articles/2015-12-09-german-federal-debt-brake.pdf?__blob=publicationFile&v=6)>
3. Bundesfinanzministerium, 2017. Ergebnisse der Steuerschätzung vom 7. bis 9. November 2017. *Monatsbericht*, November, pp. 20-26.
4. Destatis, 2018. Kommunal Finanzen 2017: Rekordüberschuss von 10,7 Milliarden Euro. *Pressemitteilung*, Nr. 120. Available at: <[https://www.destatis.de/DE/PresseService/Presse/Pressemitteilungen/2018/04/PD18\\_120\\_71137.html](https://www.destatis.de/DE/PresseService/Presse/Pressemitteilungen/2018/04/PD18_120_71137.html)>
5. Deutscher Städtetag, 2017. Gemeindefinanzbericht 2017. Berlin / Köln. Available at: <[http://www.staedtetag.de/imperia/md/content/dst/veroeffentlichungen/gemeindefinanzbericht/gemeindefinanzbericht\\_2017\\_langfassung.pdf](http://www.staedtetag.de/imperia/md/content/dst/veroeffentlichungen/gemeindefinanzbericht/gemeindefinanzbericht_2017_langfassung.pdf)>
6. European Commission, 2014. An Investment Plan for Europe, COM(2014) 903 final.
7. European Investment Bank (EIB), 2017. *Investment Report 2017/2018: From Recovery to Sustainable Growth – Key Findings*. Luxemburg: EIB. Available at: <[http://www.eib.org/attachments/efs/economic\\_investment\\_report\\_2017\\_key\\_findings\\_en.pdf](http://www.eib.org/attachments/efs/economic_investment_report_2017_key_findings_en.pdf)>
8. Expertenkommission, 2015. Stärkung von Investitionen in Deutschland. München: PRpetuum GmbH. Available at: <[https://www.bmwi.de/Redaktion/DE/Publikationen/Studien/staerkung-von-investitionen-in-deutschland.pdf?\\_\\_blob=publicationFile&v=11](https://www.bmwi.de/Redaktion/DE/Publikationen/Studien/staerkung-von-investitionen-in-deutschland.pdf?__blob=publicationFile&v=11)>
9. Hammer, S. [et al.], 2011. Cities and Green Growth: A Conceptual Framework. *OECD Regional Development Working Papers*, 2011/08. <https://doi.org/10.1787/5kg0tflmzx34-en>
10. Höffler, F. [et al.], 2013. Renaissance öffentlicher Unternehmen? Ein Überblick zu Rekommunalisierungsstudien. *Wirtschaftsdienst*, 93(2), pp. 75-79. <https://doi.org/10.1007/s10273-013-1489-1>
11. Höffler, F., 2013. Rekommunalisierung – Eine Variation über das Thema „Staat oder Privat?“. *Wirtschaftsdienst*, 93(2), pp.71-75. <https://doi.org/10.1007/s10273-013-1489-1>
12. Laboul, A. and della Croce, R., 2014. *Private Financing and Government Support to Promote Long-term Investments in Infrastructure*. Paris: OECD. Available at: <<https://www.oecd.org/daf/fin/private-pensions/Private-financing-and-government-support-to-promote-LTI-in-infrastructure.pdf>>
13. Merk, O. [et al], 2012. Financing Green Urban Infrastructure. *OECD Regional Development Working Papers*, No. 2012/10. <https://doi.org/10.1787/5k92p0c6j6r0-en>

14. OECD, 2012. *Compact City Policies: A Comparative Assessment*. Paris: OECD. <https://doi.org/10.1787/9789264167865-en>
15. Senatsverwaltung für Finanzen, 2017. Beteiligungsbericht 2017 – Geschäftsjahr 2016. Berlin: Senatsverwaltung für Finanzen. Available at: <[https://www.berlin.de/sen/finanzen/dokumentendownload/vermoege/beteiligungsberichte/beteiligungsbericht-2017\\_fassung-nach-senatsbeschluss.pdf](https://www.berlin.de/sen/finanzen/dokumentendownload/vermoege/beteiligungsberichte/beteiligungsbericht-2017_fassung-nach-senatsbeschluss.pdf)>
16. UN Habitat, 2011. *The Economic Role of Cities*, Nairobi: UN Habitat. Available at: <<http://mirror.unhabitat.org/pmss/getElectronicVersion.aspx?nr=3260&alt=1>>
17. World Economic Forum (WEF), 2014. *Infrastructure Investment Policy Blueprint*. Geneva: WEF. Available at: <[http://www3.weforum.org/docs/WEF\\_II\\_InfrastructureInvestmentPolicyBlueprint\\_Report\\_2014.pdf](http://www3.weforum.org/docs/WEF_II_InfrastructureInvestmentPolicyBlueprint_Report_2014.pdf)>
18. Zucman, G., 2014. *Steueroasen – Wo der Wohlstand der Nationen versteckt wird*; Berlin.