

Infrastructure, the crisis, and pension funds

by

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1. Introduction

Infrastructure investment has been an important element in the economic stimulus packages introduced to try and deal with the effects of the recession. It is reinforced by the need to develop sustainable energy sources, and by the development needs of countries in the south. Public sector finance – tax revenues and bonds – remain the main way of financing such investment. The use of PPP projects to finance and operate infrastructure services, and the development of infrastructure funds as a way of investing in them, are both dangerous and unnecessary.

2. Infrastructure and economy

2.1. Economic stimulus and infrastructure spending

The economic crisis has required governments to deliberately increase their budget deficits – contrary to the official wisdom of the last 30 years – in order to increase demand and so maintain the level of economic activity higher than before. At the end of 2009, governments continue to plan for continued economic stimulus, despite increasing rhetoric about the need to plan ‘exit routes’ by cutting public spending. In France, there are plans to issue a special ‘national bond’ to finance €35 billion of investment in infrastructure and research and development.¹ In Germany, Chancellor Merkel has decided to provide a continued stimulus in the form of higher budget deficit, but through tax cuts of €24 billion rather than infrastructure spending.²

The stimulus has been achieved not just by deliberate new ‘packages’, but also, in countries with large public spending, the automatic downward adjustment of taxes and the upward increase in benefits, which absorbs up to half the effect of the recession – known as the ‘automatic stabilisers’ (see Annex 2 for a further note).

Table 1. Economic stimulus: government deficit increases 2009

G-20 countries, change compared with 2007, as % of GDP

Country	Change in government/fiscal deficit as % GDP	Of which:	
		Crisis-related discretionary measures	Other factors (automatic stabilisers etc.)
Argentina	-1.8	-1.5	-0.3
Australia	-5.8	-2.9	-2.9
Brazil	-1.0	-0.6	-0.4
Canada	-6.5	-1.9	-4.6
China	-4.8	-3.1	-1.7
France	-5.6	-0.7	-5.0
Germany	-3.7	-1.6	-2.1
India	-6.0	-0.6	-5.4
Indonesia	-1.4	-1.4	0.0
Italy	-4.1	-0.2	-3.9
Japan	-7.4	-2.4	-5.0
Korea	-6.2	-3.6	-2.6
Mexico	-3.5	-1.5	-2.0
Russia	-13.4	-4.1	-9.3
Saudi Arabia	-10.8	-3.3	-7.5
South Africa	-5.6	-3.0	-2.6
Turkey	-4.9	-1.2	-3.7
United Kingdom	-8.9	-1.6	-7.4
United States	-6.4	-2.0	-4.4
All G-20 Countries (GDP PPP weighted)	-5.9	-2.0	-3.9
Advanced G-20 economies	-6.3	-1.9	-4.4
Emerging G-20 economies	-5.4	-2.2	-3.2

Source: IMF The State of Public Finances SPN/09/25 Annex Table 2. November 3, 2009

2.2. Tax cuts, benefits or spending?

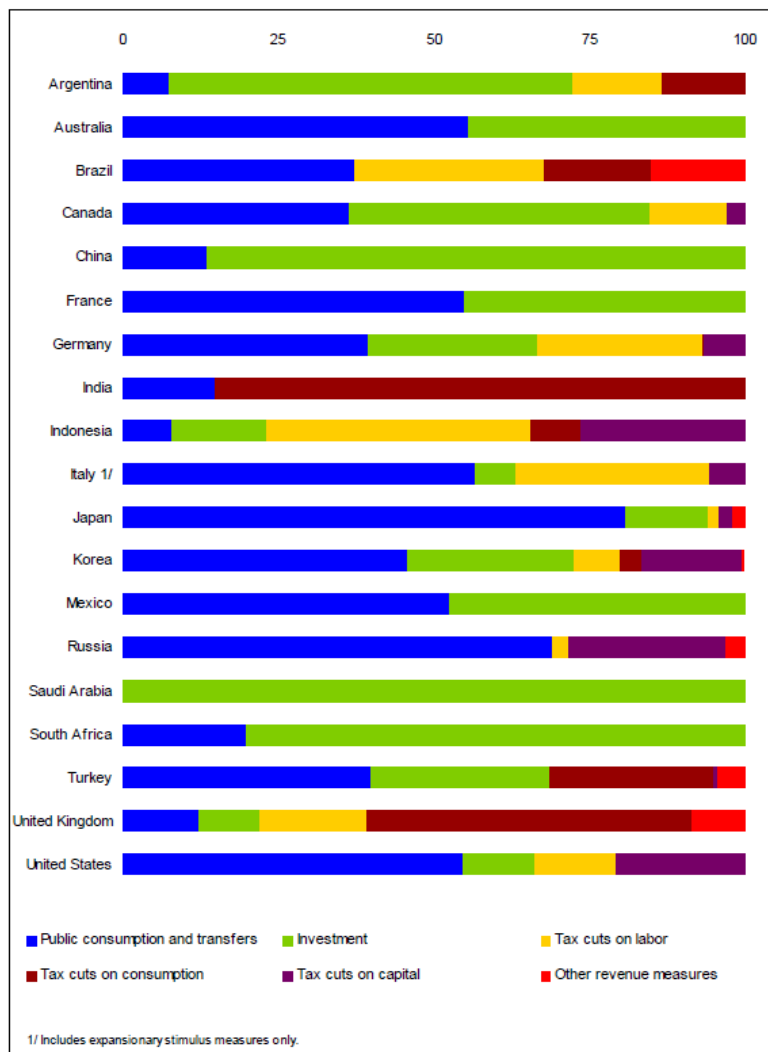
The budget deficit can be used in different ways. One possibility is to leave spending unchanged, and reduce taxes, expecting that people and companies will spend more as a result. Another possibility is to maintain taxes, and spend more by increasing benefits to the poor – again, expecting that they will then spend more. Another possibility is to increase spending on public services or public assets – by employing more people, or buying more goods and services – or by investing in new infrastructure.

All such spending creates demand and employment directly, and has a greater ‘multiplier’ effect than tax cuts, because less is saved (see Annexe 3). Investing in infrastructure has two extra attractions compared with other forms of public spending. Firstly, it helps boost the economy anyway, by providing better transport or energy systems, for example; and secondly, the spending does not last forever, it ends when the new asset is completed, and then the budget can return to normal – by which time the economy will also have returned to normal, it is hoped.

2.3. Infrastructure as proportion

There are various estimates of how much of the stimulus is represented by infrastructure investment. The largest guesstimate was offered by a World Bank official in March 2009, claiming that “So far, announced infrastructure spending for 2009 represents on average 64 percent of the total stimulus in emerging market economies and 22 percent of the total stimulus in high income economies”.³ The chart below represents the estimates of the IMF as at November 2009 (the green segments represent ‘investment’, in effect spending on infrastructure), but the IMF itself acknowledges that it is not based on clear or consistent data. A different assessment of the proportions in EU countries is attached at Annexe 1.

Chart A. Composition of fiscal stimulus planned in 2009



Source: IMF The State of Public Finances SPN/09/25Annex Table 2. November 3, 2009

2.4. Infrastructure: climate change and economic development and

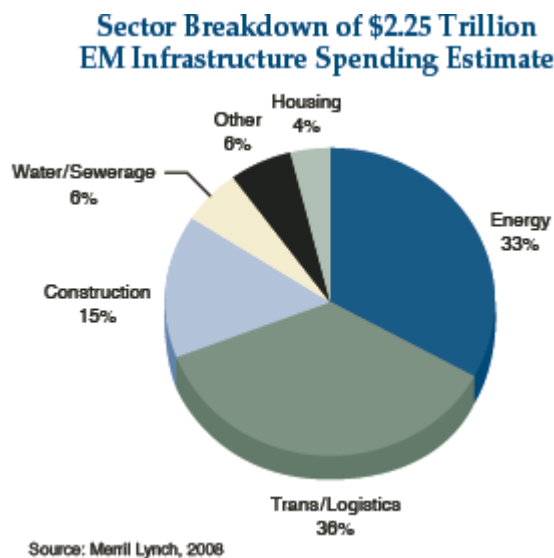
Two additional factors are driving a growth in infrastructure investment.

One is the response to climate change, which requires a range of measures. These include investment in renewable energy sources to shift the balance of primary fuels away from hydrocarbons such as coal and gas; investment in energy efficiency and building insulation; and investment in public transport to reduce emissions of private car travel. In a number of countries, for example the USA and France, these 'green' investments have been brought forward or increased as part of the stimulus packages.

The second is economic and social development, which requires the development of infrastructures. This means building transport systems, including roads and railways; electricity networks; telecoms networks; and social infrastructure including housing, water and sanitation. Again, the crisis has enabled countries to use public borrowing to accelerate their programmes of infrastructure investment, which had previously been strongly opposed by development banks.

Global estimates of planned infrastructure investments in developing countries expect about 1/3 in transport (roads and railways), 1/3 in energy, especially electricity networks, and 1/3 in the rest, including water and housing.⁴

Chart B. Estimated infrastructure investments in developing countries 2009-2011



3. Financing infrastructure investment

3.1. Infrastructure as investment opportunity

There are a number of ways for pension funds – or other savings institutions, or people themselves – to invest their money in infrastructure. The actual possibilities depend on how governments decide to finance such investment. In all cases, a principal attraction for investors is that investments in this sector, whether public or private, are invariably underpinned by government guarantees, because the systems are too important to fail.

Much investment in infrastructure is made directly from taxation or from the operating surplus of utilities and similar companies. In the USA, for example, federal investment in roads through the Highways Trust Fund has been financed from a flow of tax receipts worth €39 billion in 2007.⁵ In west European countries in the 1960s, for example, around 40% or more of investment by public sector infrastructure companies was financed from the surplus of the companies.⁶ The same revenue streams pay for all the interest, dividends and capital gains of any money invested by pension funds or others.

The channels for pension fund investment can be divided into three:

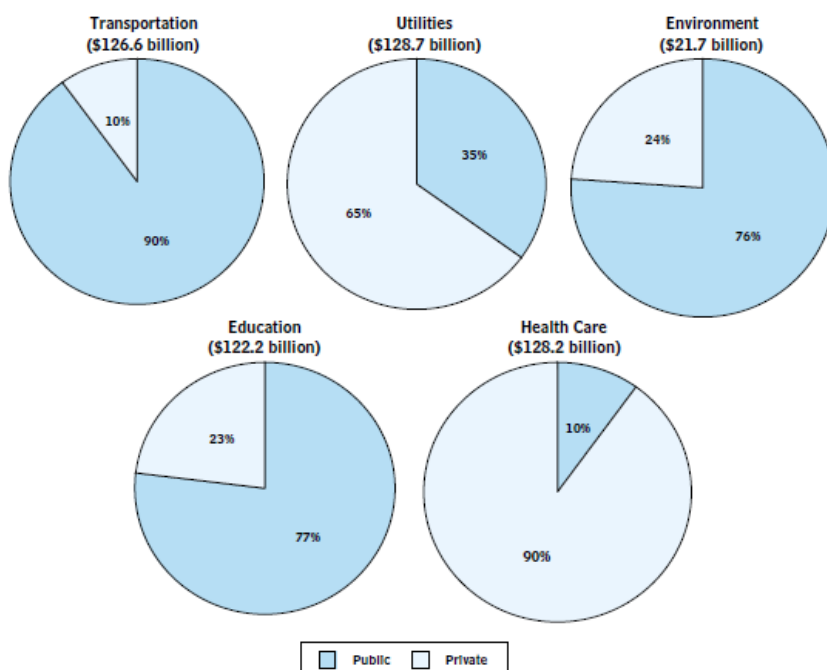
- investing in public sector infrastructure
- investing in private companies
- investing in infrastructure funds

3.2. Public sector

The principal mechanism for financing infrastructure development, worldwide, is still through government and public sector. According to a global survey by Siemens in 2007, PPPs only account for about 4% of all public sector investment: and “public sector loan financing is widely expected to remain the key financing instrument across Europe.”⁷ The reasons for this have long been recognised by economists: “A country, e.g. the United States, may feel the need for railways in connection with production; nevertheless the direct advantage arising from them for production may be too small for the investment to appear as anything but *sunk capital*. Then capital shifts the burden on to the shoulders of the state”⁸.

Even in the USA, where the role of the state is relatively small, the great majority of investments in transport, education, and environment are public – and even 35% of utility investment is public sector, despite the high levels of private operation in electricity and gas; only in health care is the public proportion low.

Chart C. Capital spending on USA infrastructure 2007



Source: CBO 2009 Subsidizing Infrastructure Investment with Tax-Preferred Bonds
<http://www.cbo.gov/ftpdocs/106xx/doc10667/10-26-TaxPreferredBonds.pdf>

3.2.1. Public sector bonds.

The principal avenue for financing public sector infrastructure investment is by investment in bonds issued by governments, development banks, or public corporations, relating to infrastructure projects or activities

The great majority of pension funds hold government and public sector bonds, through their normal portfolios: indeed this has historically formed the core form of investment for pension funds in many countries. It is thus certainly true that pension funds are, in this way, financing a great deal of infrastructure investment around the world. In the USA, pension funds have traditionally not invested in municipal bonds,

because of their tax-exempt status; but the new economic stimulus law has created a new class of bonds ('Building America Bonds' - BABs) with a different status - in the first 5 months of the new law, up to September 2009, over \$29 billion of BABs had been issued.⁹

This form of investment is usually ignored in discussions of the sector, which prefer to focus on opportunities for investment in private companies or PPPs. For example, the recent OECD paper on 'Pension Fund Investment in Infrastructure' does not even mention investment in government and public sector bonds.

Bonds are a source of finance for governments, municipalities, and companies, globally. Since the second half of 2008, it has been very difficult for companies to raise finance through bonds, but governments have continued to do so and there continues to be demand for such bonds. There has been a particular growth in local currency bonds issued in east Asia, where the majority of bonds are issued by governments, and even the corporate bonds are mainly issued by public sector, companies or those with strong government support, such as utilities and banks. China is now planning to raise \$2.9 billion through a 50-year bond at an expected yield of 4.5%.¹⁰ The value of east Asian local currency bonds is now equivalent to the combined value of the outstanding bonds of Germany and the UK.

Table 2. Local currency bonds, emerging east Asian countries, 3rd quarter 2009

	Total value (USD \$billion)	% share
Total	4212	100.0
Government	2998	71.2
Corporate	1214	28.8

Source: ADB 2009¹¹

Table 3. Global breakdown of local currency bonds by country

Country	Bonds outstanding (\$USD billion)	% of world total
USA	24962	42.3
Japan	10289	17.4
France	2824	4.8
Germany	2570	4.4
UK	1268	2.1
Emerging east Asia	3658	6.2
<i>of which China:</i>	2192	3.7
Brazil	893	1.5
India	450	0.8

Source: ADB 2009¹²

3.2.2. National Development Banks and other funds¹³

National development banks are another vehicle for investing in infrastructure. They are typically state-owned, with public policy objectives. These objectives invariably include long-term investments in infrastructure for economic and social development, but they may carry out other functions, for example investment in production industries or agriculture, and development of the financial sector. A UN report defines them as "Financial institutions primarily concerned with offering long-term capital finance to projects generating positive externalities and hence underfinanced by private creditors". While many have been privatised and become commercial banks, they remain widely used in developing countries. Examples include the Banco Nacional de Desenvolvimento Economico e Social (BNDES) in Brazil, the Development Bank of Southern Africa (DBSA) in South Africa.

Development banks may raise finance from the private sector as well as from government. Some raise finance internationally, and the table shows those NDBs which have received a S&P rating for foreign currency loans. In nearly all cases, it is identical to the government's credit rating.

Table 4. National development banks

National development bank		Country	S&P rating foreign currency 2006
Banco Nacional de Desenvolvimento Economico e Social	BNDES	Brazil	BB
Hrvatska Banka za Obnovu i Razvitak	HBOR	Croatia	BBB
Instituto de Credito Oficial	ICO	Spain	AAA
Kreditanstalt fur Wiederaufbau	KfW	Germany	AAA
Landwirtschaftliche Rentenbank	LRB	Germany	AAA
Nederlandse Fin -Maatschappij voor Ontwikkelingslanden N V	FMO	Netherlands	AAA
Russian Bank for Development	RBD	Russia	BBB
Vnesheconombank	VEB	Russia	BBB+
China Development Bank	CDB	China	A
Development Bank of Japan	DBJ	Japan	AA-
Development Bank of Kazakhstan	DBK	Kazakhstan	BBB-
Korea Development Bank	KDB	S. Korea	A
Development Bank of Southern Africa	DBSA	S. Africa	BBB+

Source: Standard and Poor's 2006

Arising out of the crisis and the stimulus measures, there have been proposals to create development funds in the USA and UK. In the USA for example it has been suggested that pension funds and others could provide finance for a National Infrastructure Investment Fund (NIIF), getting returns on their investment from user charges and tolls.¹⁴

3.3. Private companies

If utilities or services are run by private companies, there are two ways of investing in them, depending on whether they are 'listed' companies whose shares are bought and sold by investors on the stock exchange, or private companies. In countries where services are run by the public sector, neither of these forms of investment are possible – but pension funds can still invest via bonds issued by governments or by the public sector utilities themselves, as above.

3.3.1. Investments in listed companies' shares and bonds

This category consists of direct investment in corporate equities or bonds of companies (or PPPs) operating in the infrastructure sectors, such as utilities, telecoms, water, which are listed on stock exchanges.

Virtually all pension funds invest in companies operating in the 'infrastructure sectors', simply by investing in shares of stock exchange listed utility companies such as Suez and E.on. The UK local government pension funds, for example, invest £2.8 billion – 2% of their entire portfolio – in stock exchange listed water and energy companies.¹⁵ The shares of such infrastructure companies, both global and regional, have outperformed stock market indices since 2002, and continue to do so through the crisis.

3.3.2. Private companies: private equity ownership

Pension funds can also make direct controlling investments, in the manner of private equity investments, in companies operating in infrastructure. The fund then becomes the main owner, or one of the main owners, of such companies. This can be done by buying stakes in traditional utility companies, or by becoming one of the major shareholders in a new or existing PPP. The risks involved in such direct investments demand specialised teams, and it is unusual for a pension fund to invest directly in this way.

The OECD notes that the leading example of a pension fund engaging in such direct investments is the Ontario Teachers' Pension Plan (OTPP), which has a dedicated infrastructure investment vehicle – Teachers' Private Equity – with a staff of 50.¹⁶ Its investments include controlling stakes in a number of Chilean water companies. (This type of investment is not restricted to the infrastructure sector, of course.)

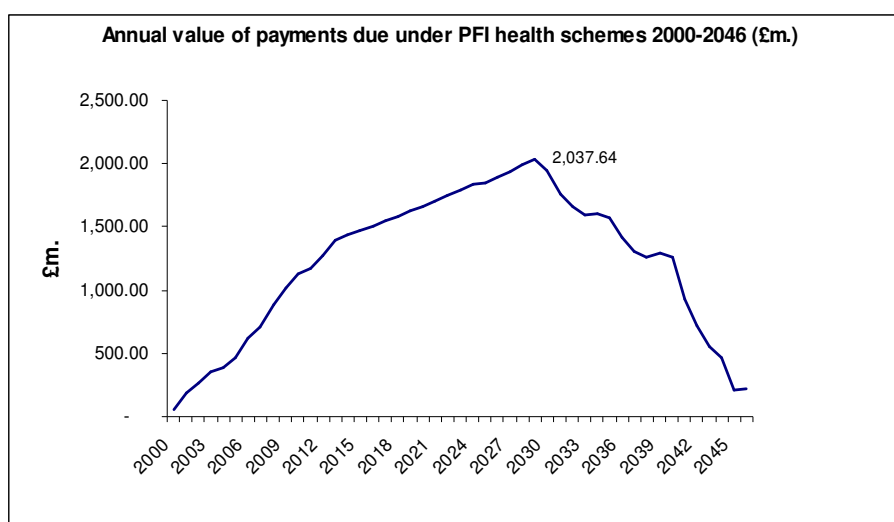
3.3.3. Problems with PPPs in infrastructure

Much of the investment opportunities of this type have arisen only because of the growth of PPPs (usually known in the UK as PFI – private finance initiative). These have been used in both high income and

developing countries. Even from an investor's perspective, they are subject to quite intense political risk, because there is almost universal distrust and resentment of them, and constant pressure to renegotiate or terminate.

From the perspective of public services, PPPs have many problems. PPP contracts cut across democratic control systems: road PPPs in the USA, for example, include clauses giving the companies the right to object to any other new road or public transport system proposed during the life of the contract, and claim compensation.¹⁷ They are a more expensive way of raising capital finance, typically with a small slice of equity, and as much as 90% debt, but ultimately underwritten by government guarantees: "With such a structure, it is apparent that public-private partnerships are, in effect, just another way of raising debt finance. The State could have taken this debt onto its own balance sheet....[and] debt issued by a PPP...is usually 2-3% more expensive than public debt".¹⁸ The contracts themselves are often kept secret from elected councillors, yet PPPs create contractual claims on public revenues for many years to come. A cumulative series of PPPs has the effect of creating a future peak of national resources which are earmarked for the PPP company, as illustrated by the chart of healthcare PPPs in the UK.

Chart D. Long-term costs of PPPs: the case of UK PFI schemes in health sector



Source: PSIRU calculation from Treasury PFI projects list http://www.hm-treasury.gov.uk/documents/public_private_partnerships/ppp_pfi_stats.cfm

3.4. Infrastructure funds

This category consists of investment in or infrastructure funds, or private equity funds targeting infrastructure, which in turn invest in PPPs or companies in high income or developing countries. These funds are a recent development, but reports by official bodies and consultancies often talk as though they were the only possible form of investment in infrastructure. This is not true.

Unlisted funds are structured along the lines of private equity funds, holding a portfolio of investments and charging fees to investing institutions. Investors in these funds are not investing directly in the infrastructure company or asset, so it is an illusion to think that the returns on this investment come from the secure revenues of utilities, for example. The infrastructure fund decides on the companies and projects in which it invests, and the returns to investors are determined by the fees and policies of the fund managers – not the finances of the utilities.

Listed infrastructure funds may include pooled investments in such funds, as well as investments in equity of companies operating in e.g. the utilities sector. The OECD gives the example of the listed fund Macquarie Airports, which has 2/3 of its assets invested in the unlisted fund, Macquarie Assets Group, and the rest consist of a 50% stake in Bristol Airport.¹⁹ Most pension funds have preferred to invest in these infrastructure funds, rather than take direct private equity stakes. The Dutch pension fund ABP, for example, has allocated 2% of its assets to investing in infrastructure funds.²⁰

3.4.1. Problems with infrastructure funds

The infrastructure fund model is the subject of a number of criticisms.

In 2006, even before the credit crisis and recession, Standard and Poor's warned that it was the subject of exaggerated claims, was attracting far too much money, and creating a bubble: "the infrastructure sector is in danger of suffering from the dual curse of overvaluation and excessive leverage.... It is estimated that \$100 billion-\$150 billion of fund money has been raised globally and is waiting to be placed in suitable assets in the infrastructure sector."²¹

The growth of the funds however continued. By mid-2008 the 10 largest infrastructure funds had raised over \$28 billions (see table) and in May 2009 there was still aggressive marketing to investors (the New York Times reported one fund manager as claiming that "There's a tremendous amount of interest right now; a lot of investors have noticed strong attributes of infrastructure investing"²²).

Table 5. Top 10 infrastructure funds mid-2008

Figure 3: Capitalization of private equity funds targeted to infrastructure (as of May 2008)

Fund Name	Parent	Amount (M) Raised/Target	Vintage Year/Status	Geographic Target
GS Infrastructure Partners I	Goldman Sachs	\$6,500	2006	Global
Macquarie European Infrastructure Fund II	Macquarie Bank	€4,600	2006	Europe
Macquarie Infrastructure Partners	Macquarie Bank	\$4,000	2007	North America
Alinda Capital Partners I	Alinda Capital Partners	\$3,000	2007	North America
AIG Highstar III	AIG Highstar	\$3,000	In Market	Global
Citigroup Infrastructure Investors	Citigroup Alternative Investments	\$3,000	In Market	Developed Markets
Morgan Stanley Infrastructure	Morgan Stanley	\$3,000	In Market	Global
RREEF Pan-European Infrastructure Fund	Deutsche-RREEF	€2,000	In Market	Europe
Abraaj Infrastructure and Growth Capital Fund	Abraaj Capital	\$2,000	In Market	Global
Babcock & Brown Infrastructure Fund	Babcock & Brown	\$2,000	In Market	North America

Source: Little 2009²³

The fundamental basis on which the funds are run has been publicly questioned by a number of authorities, reported in a number of publications. This business model included the high levels of debt typical of private equity investments; complex deals involving a web of relationships between different Macquarie funds and advisors; overpaying for assets, in order to inflate fees payable by investors; and a readiness to pay more out in dividends and fees than the total profits of the companies: so dividends were being paid out of new debt.

Fortune magazine quoted a Merrill Lynch analyst pointing out that "none of five large publicly traded Macquarie funds can fully fund their distributions", and Jim Chanos, another analyst, as saying publicly: "borrowing future growth to pay investors today bears the hallmarks of a Ponzi scheme".²⁴

A detailed analysis by two Australian researchers noted the misleading nature of the name 'infrastructure fund': "the predictable and steadily growing cash flow associated with infrastructure assets is commonly highlighted as a basis for providing an attractive, and steady, yield. However, the yield delivered by several infrastructure funds is sourced from operating cash flows of the fund's assets *and* from capital." They also identified: "a series of issues related to the sustainability of the model; a danger of overpaying for assets; fee structures that provide an incentive to increase a fund's size without sufficient regard to returns; and accounting practices that have the capacity to provide an overly robust picture of a fund's profitability.... a series of governance concerns with the infrastructure model....for instance, the existence of 'special shares' in some funds which entitle the external manager to appoint a majority of the fund's director."²⁵

Professor Richard Little summarised the position earlier in 2009 in fairly gentle terms:

"the long term sustainability of the Macquarie Model has been called into question because shareholder dividends often exceed current revenues and the difference is paid out of capital. In light of increased financial scrutiny and the tightness and cost of commercial credit experienced during the autumn 2008 financial crisis, many have questioned the long-term viability of the model".²⁶

The Economist was more brutal:

“Their entire business models now seem headed for the scrap heap.... [Macquarie Investment Group’s] long-standing practice of paying out more in distributions to shareholders than it received from the underlying investments worked when it was cheap to borrow money. It no longer is.”²⁷

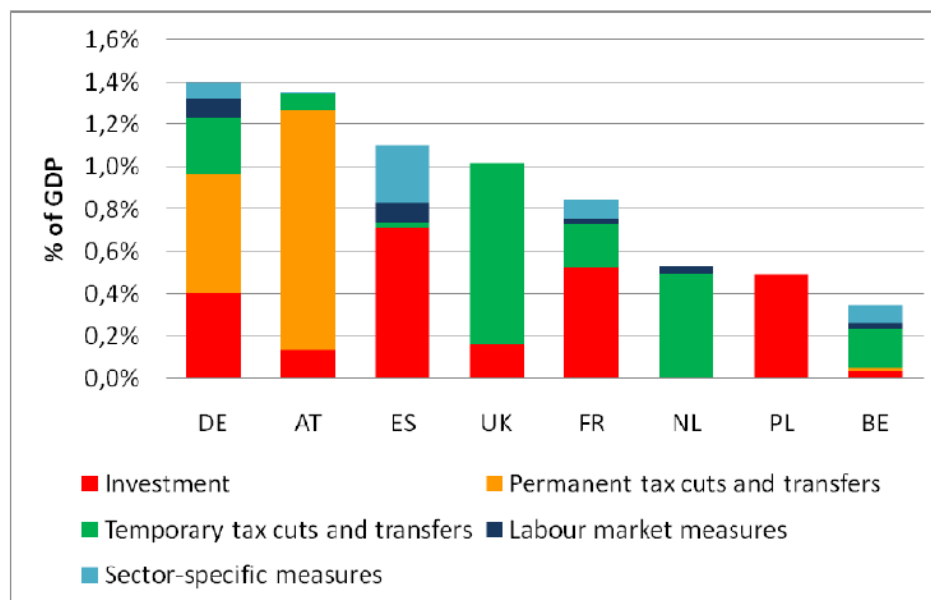
4. Some conclusions

- Public sector bond finance continues to be a secure and effective way of investing in infrastructure
- There is no reason to assume that PPPs are a superior way of providing infrastructure investment. Recent global evidence, from the water sector in developing countries to the public transport sector in the UK, strongly suggests it is both expensive and high risk.
- the investment practices of infrastructure funds are not sustainable, especially paying dividends and fees by taking on more debt

5. Annexes

Annexe 1: Alternative estimates of elements of stimulus packages in EU countries

Figure 1: Break-down of select EU stimulus packages by spending category



Source: Bruegel calculations

Source: David Saha and Jakob von Weizsäcker 2009 Estimating the size of the European stimulus packages for 2009: an update <http://aei.pitt.edu/10549/01/UPDATED-SIZE-OF-STIMULUS-FINAL.pdf>

Annex 2: Automatic stabilisers

The biggest boost to economies has not come from special additional government spending, but from the normal operation of taxation and public spending systems. Government deficits automatically increase in recessions, because taxes fall and spending on benefits and other. This deficit partially protects people from the fall in their incomes, and acts as an economic stimulus which partly offsets the effects of recession.

Table 6. Economic stimulus as % of GDP:

	2009		
	Automatic stabilisers	Discretionary policies	Total stimulus
	in 2009		
All G-20 countries	1.9	2.0	3.9
<i>Of which:</i>			
Advanced countries	2.4	1.9	4.3
Emerging market countries	1.1	2.2	3.3

Source: IMF 2009B^{28 29}

5.1.1. Developing countries and social security systems

The bigger the level of government spending and taxation, the bigger is the effect of the automatic stabilisers. The IMF estimates that the contribution in developing G-20 countries is only about half the effect in advanced countries, because developing countries have much weaker social security systems: low-income countries on average spend 2% of GDP on social security, while OECD countries spend 13%.

It is often assumed that such systems cannot be afforded by low-income countries, but a new publication by the ILO argues that it would be better economically, as well as socially, if even low-income countries

developed much larger systems, and that this can be afforded, even in poor countries: “Social security is about societal resource sharing – and nobody is too poor to share.”³⁰ Actual examples include the Bolsa Familia in Brazil and the public works employment guarantee in India.³¹

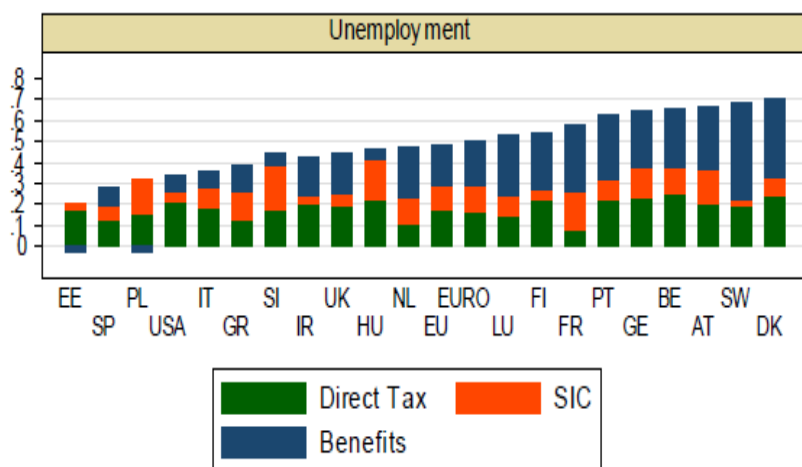
5.1.2. Variations: Europe and USA

The effect of the stabilisers is stronger in European countries than in the USA, because of relatively high levels of benefits in Europe.³² USA workers who lose their jobs have about one-third of their lost income cushioned by the tax/benefits system, whereas European workers have nearly half their income cushioned.³³

The effects within Europe vary from country to country. In countries with strong social protection systems, such as Denmark, Sweden, Austria, Belgium and Germany, between 65% and 70% of income loss is cushioned by the system; whereas in Estonia, Poland and Spain the protection is less than 30%, even lower than in the USA. There is no common automatic stabiliser effect at EU level, because there is little taxation or social security spending at EU level.³⁴

These differences reflect political choices: lower levels of benefits mean lower protection for individuals and the economy as a whole.

Chart E. Percentage of income protected for people becoming unemployed, EU countries



Source: Dolls et al 2009³⁵ Notes: SIC = social insurance contributions; figures show proportion of workers' loss of income cushioned by tax and unemployment benefit system.

5.1.3. Social spending also stabilises

The IMF and others assume that unemployment benefits are the key part of government spending which increase automatically in a recession. But new research has found that other public spending, especially on healthcare and the elderly, also rises in response to recession, and so “automatic stabilization through all elements of social expenditure is about 3.5 times larger than the part coming from unemployment compensation alone.”³⁶ Social spending as a whole absorbs about 16% of an economic shock, on average, and the protection is strongest where social spending is highest: in Sweden, about 43% of a shock is absorbed by social spending.³⁷

This has two important implications. Firstly, the current attempts to cut public spending on the elderly risk undermining an important element in economic stability. Secondly, governments (and the EU and the IMF), which only take account of unemployment benefit, are not taking proper account of the automatic effect of recessions on this spending, and so the limits on government deficits are being applied too strictly. European Commission reports: “...downplay the automatic forces influencing the budget...the neglect of the cyclical implications of pensions, health expenditure and disability pay, especially in evaluating alternative reform packages, could be storing up problems for the control of budgets in the future.”³⁸

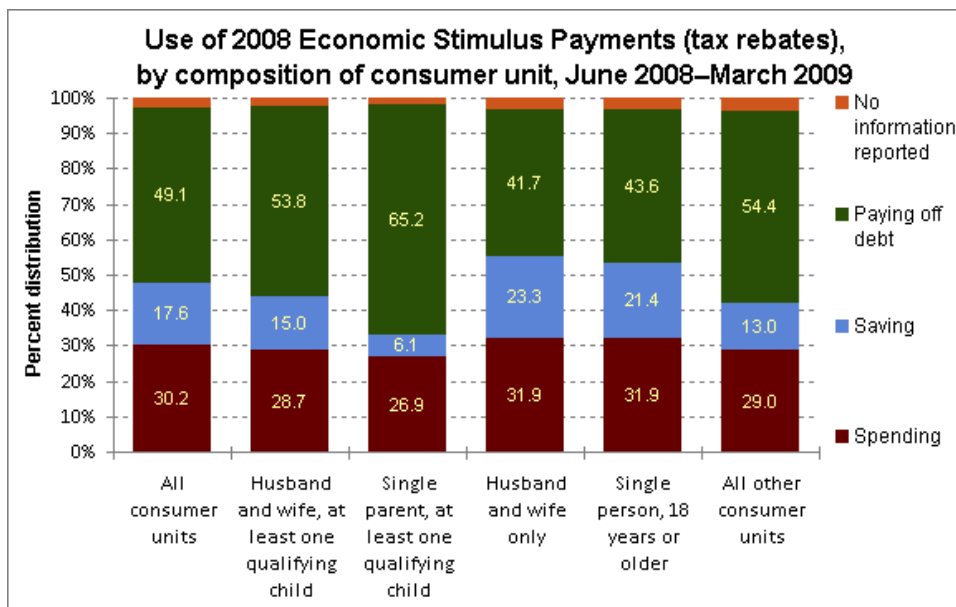
Annexe 3: Tax cuts less effective than public spending

New data from the USA demonstrates that tax cuts are a relatively poor way of stimulating demand in a recession – because people save a large proportion of them, instead of spending it. At an early stage in the

economic crisis, in May 2008, the Bush government in the USA tried to create an economic stimulus by tax rebates (which were even officially described as ‘economic stimulus payments’). But the chart shows that only about 30% of the money was actually spent by recipients: across all households, two-thirds or more of the money was saved or used to repay debts.

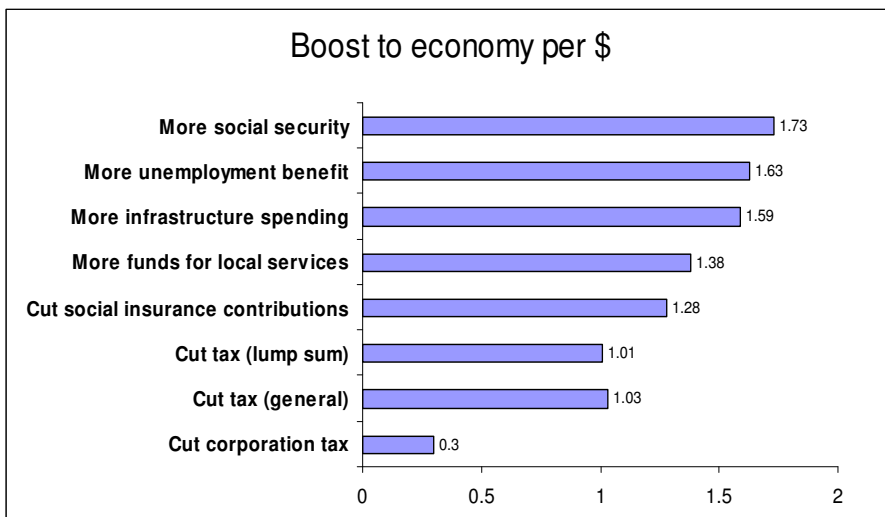
This is one reason why the economic effects of tax cuts are not so great. Estimates published by the ratings agency Moody’s suggest that increasing benefits has the greatest effect, because poorer people need to spend the extra money, followed by infrastructure financing: and in both cases, the second round effects are greater than following tax cuts.

Chart F. Tax rebates: saved, not spent



Source: USA Bureau of Labour Statistics. October 2009 pay off debt, spend, or save? The 2008 Economic Stimulus Payments http://www.bls.gov/opub/ted/2009/ted_20091023.htm

Chart G. Multiplier effect of tax cuts, benefit increases, and infrastructure spending



Source: Moody’s 2009³⁹

Notes

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