MORE THAN BRICKS AND MORTAR

Infrastructure-as-asset-class:

Financing development or developing finance?

A Critical Look at Private Equity Infrastructure Funds[1]

by

Nicholas Hildyard

The Corner House[2]

1 Sources for further information, including hyperlinks, have been given throughout this report where possible. Website addresses were correct at the time of writing. Please notify The Corner House of any broken link: enquiries AT thecornerhouse.org.uk

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"When the capital development of a country becomes the by-product of the activities of a casino, the job is likely to be ill-done."

John Maynard Keynes,
General Theory of Employment, Interest and Money, 1936

"The last quarter century of 'deregulation' involved the introduction of a vast array of new legal mechanisms and regulations by national governments to protect the interests of investors and shareholders. This must be dismantled; and new legal mechanisms and regulations must be introduced nationally to subordinate investment capital to democratic requirements established in international human rights standards."

Peter Rossman and Gerard Greenfield,
Financialization: New Routes to Profit, New Challenges for Trade Unions, 2006[1]

Introduction

Political discourse is often conducted in code. Where policy proposals or actions are likely to engender strong opposition or cause affront to the public, euphemisms are used ("collateral damage" for "dead civilians", "land disturbance" for "mining", "environmental enhancement" for "canalising rivers")[2] or concepts are employed that direct the conversation elsewhere.

When therefore the World Bank focussed its 1994 *World Development Report*[3] on "Infrastructure", it should not have come as a surprise that the Report was not in fact about bridges and roads and dams, but about privatising public goods and services and reducing the role of the state in development.[4] But the "coding" extended beyond the crude, nod-and-a-wink use of "infrastructure" to mean "divesting state assets". By framing policy choices in terms of an either/or opposition between the "private sector", on the one hand, and "the state", on the other, the Report successfully hid its promotion of a new "state/private combo".[5] A realigned state became the lynchpin of a particular response to a growing crisis of overaccumulation within capitalism, in this instance creating new highly profitable investment opportunities by "selling off" state-owned enterprises ("the family silver" in the words of former British Prime Minister Harold Macmillan[6]) at knock-down prices.

Nearly twenty years later, the crisis of overaccumulation (too much capital chasing too few investment opportunities) is not only still with us but has deepened, erupting acne-like in various manifestations that financial analysts now refer to as the GFC (or

"global financial crisis"). Once again, "infrastructure" is back on the international policy agenda, with national governments, multilateral development banks[7] and international groupings, such as the leaders of the Group of 20 major economies (G-20),[8] all announcing support for major infrastructure development initiatives. This time, however, "infrastructure" embodies more than an agenda of privatisation: what is being constructed are the subsidies, fiscal incentives, capital markets, regulatory regimes and other support systems necessary to transform "infrastructure" into an asset class that should yield above average profits. Far from constituting a retreat from neoliberalism or a renewed state commitment to meeting unmet development needs (a constant refrain is the plight of the 1.4 billion people in the world who have no access to electricity, the 880 million people without safe drinking water, and the 2.6 billion without access to basic sanitation),[9] the planned interventions by the G-20 and others are better viewed as a response to the overaccumulation crisis that further entrenches the current state-private settlement, geared to harnessing the state to extracting profit for the private sector. As such, "infrastructure" is less about financing development (which is at best a sideshow) than about developing finance. Indeed, the G-20's 2011 high-level report on infrastructure makes just seven references to "the poor" in contrast to 184 references to "private" or "public-private partnerships".[10]

Viewed as an asset class, "infrastructure" has political and economic consequences that go far beyond the immediate social and environmental impacts of the projects that are funded. In particular, many of the new investment vehicles, notably private equity funds (pooled investment vehicles that buy majority shares in companies, take over their management, increase their profitability and then sell their shares at a profit), are seeking turbo-charged profits, typically returns of 30 per cent a year). The result has been the increasing financialisation of the infrastructure sector – from manufacturers of equipment through to project developers – with profound implications for what infrastructure is funded (and what is not) and who gets to benefit from it (and who not). Under this regime, the decision as to what the infrastructure is financed is primarily driven by considerations that favour private-sector profit rather than the public good – and the poor are increasingly priced out of access to the infrastructure that is constructed. In the energy sector, in particular, infrastructure-as-asset-class is locking

society into a path that is hindering, rather than enabling, a transition away from fossil fuels.[11] Moreover, many of the strategies that civil society has developed to hold infrastructure developers to account and to ensure positive development outcomes from specific infrastructure projects – including lobbying for "safeguards" and "standards" – are arguably not keeping up with these swiftly-evolving new realities.

This briefing looks at one aspect of the evolving infrastructure-as-asset-class industry, namely the growing role of private equity infrastructure funds in financing infrastructure development in developing countries. It begins by documenting the growth of private sector investment in infrastructure (broadly defined as roads, transport, energy generation, and oil, gas and coal mining)[12] and the ways in which state power is being harnessed to encourage private sector investment in infrastructure in developing countries. It then goes on to look at the changing face of infrastructure finance; in particular, it explores how traditional methods of borrowing money for projects are being rapidly financialised, transforming infrastructure into a platform for profit seeking in multiple markets, by using multiple financial instruments. This is followed by a review of the growing role of private equity funds in infrastructure. The next section looks at who is investing in private sector infrastructure companies; it details the growing number of public funds – from public pension funds to Sovereign Wealth Funds to bilateral and multilateral Development Finance Institutions – that are now backing private equity funds, acting in all but name as private sector financial vehicles. This is followed by a discussion of how private equity fund investments (which are generally in companies) translate into money for projects, particularly in the oil, gas and coal sectors. Finally, the briefing provides an overview of the wider political and economic impacts of private equity investment and some tentative ideas as to how the financialisation of development, with its adverse consequences for the public good, might better be challenged. An annex lists over 350 private equity funds and some of the infrastructure investments they have made.

There are many things that this briefing is not. It is not a comprehensive survey of the private equity infrastructure industry. Few private equity funds disclose publicly their full portfolio of investments. At best, the majority highlight "star" performers, leaving the less successful ones unreported, whilst some give no details at all, except to

investors. Moreover, the funds analysed do not encompass by any means the entire universe of private equity funds with infrastructure investments in developing countries. Consequently, firm data on investments are elusive. Nor is the briefing a detailed analysis of the political economy of the infrastructure industry: much work has already been done on this.[13] It is hoped, however, that the briefing may help in sparking a discussion on the increasing connections between infrastructure funding and international financial markets – and on the wider political project that infrastructure-as-asset-class embodies.

The growth of private sector investment in infrastructure

Policymakers at groupings such as the Organisation for Economic Co-operation and Development (OECD) [14] predict that "dozens of trillions of dollars" will need to be spent on infrastructure over the next 20 years.[15] According to such projections (which, importantly, tend to reflect an uncritical corporate view of future infrastructure "needs"), spending will be concentrated in developing countries, particularly those now classed by investors as "emerging markets", notably China, Brazil and India. These countries already account for half of infrastructure investment worldwide, amounting to some $1.2 trillion a year,[16] a level of spending that *Deal* magazine predicts will continue "for the foreseeable future".[17] The Asian Development Bank pegs spending for the Asian region alone at $750 billion a year between 2010 and 2020, or a total of some $8 trillion.[18]

Until the 1990s, the vast majority of infrastructure projects in the developing world – from water treatment plants and drinking water supply systems to telecommunications networks, power stations, dams, railways, roads and ports – was funded by national governments, with substantial project-specific loans from multilateral development banks (MDBs), such as the World Bank. The role of the private sector in financing infrastructure was minimal.

State-generated finance (derived from taxation, user fees, borrowings or reserves) still remains the principal source of funding for infrastructure in most developing

countries,[19] particularly in Sub-Saharan Africa.[20] But during the last two decades, the role played by the private sector has increased substantially,[21] not least as a result of privatization of state-owned goods and services and the increased use of "public-private partnerships" to fund infrastructure. From 2002-2007, according to the World Bank, the value of infrastructure projects in developing countries with private sector participation amounted to some $603 billion (or an average of $100 billion a year).[22] As such, private investment would appear to have far outstripped the $64.6 billion[23] loaned to developing countries for infrastructure projects over the same six-year period by China (by far the biggest source of bilateral concessional development finance) or the $72.9 billion[24] in development assistance for infrastructure provided by the 33 countries that make up the OECD. Annual levels of private investment in infrastructure in India alone tripled between 2005 and 2009, reaching a total of $159 billion.[25]

If investments in infrastructure businesses (including investments in construction and service companies) were also to be taken into account, the private sector figures would be larger still. Globally, the volume of infrastructure-related transactions between 2005 and 2008 surpassed $2 trillion, with developing countries accounting for more than half of the recorded flows – averaging $333 billion a year, or three times the annual average for project-specific investments.[26] The vast bulk of infrastructure projects has been financed domestically, either by the state or by local private sector companies and investors.[27] But foreign investors, particularly Northern- and Southern-based transnational companies (TNCs), are increasingly important players in the infrastructure sector. Between 1990 and 2006, TNC investments in infrastructure in developing countries increased 29 times, reaching an estimated $199 billion.[28]

Much private sector investment in infrastructure is concentrated in a small number of countries and a limited number of sectors.[29] [30] Consequently, the relative contributions made by official development flows and private sector financial flows play out very differently region by region and sector by sector. Nonetheless, even in sub-Saharan Africa – long portrayed as a region shunned by private investors – private sector financing for water supply and sanitation exceeds that provided by the OECD in development assistance and by non-OECD financiers, such as China (*see* Table 1). In the power sector, private sector finance is only marginally below that provided by the

OECD (though considerably below that provided by China). Only in the transport sector is the financial contribution of OECD development assistance larger than that from the private sector. As for telecommunications, the sector is almost entirely financed through African taxpayers and the private sector.[31] "Overall", notes the World Bank, "private finance to African infrastructure [has come] from nowhere to provide a flow of funds comparable in magnitude to traditional ODA."[32]

TABLE 1: INFRASTRUCTURE FINANCE BY SOURCE, SUB-SAHARAN AFRICA, 2008

	Operation and maintenance	Capital expenditure					
Infrastructure sector	Public sector	Public sector	ODA	Non-OECD financiers	Private sector	Total	Total spending
ICT	2.0	1.3	0.0	0.0	5.7	7.0	9.0
Power	7.0	2.4	0.7	1.1	0.5	4.6	11.6
Transport	7.8	4.5	1.8	1.1	1.1	8.4	16.2
WSS	3.1	1.1	1.2	0.2	2.1	4.6	7.6
Irrigation	0.6	0.3	—	—	—	0.3	0.9
Total	20.4	9.4	3.6	2.5	9.4	24.9	45.3

Source: Briceño-Garmendia, Smits, and Foster 2008.
Note: Based on annualized averages for 2001–06. Averages weighted by country GDP. Figures are extrapolations based on the 24-country sample covered in AICD Phase 1. Totals may not add exactly because of rounding errors. ICT = information and communication technology; ODA = official development assistance; OECD = Organisation for Economic Co-operation and Development; WSS = water supply and sanitation. — Not available.

Source:
Foster, V. and Briceño-Garmendia, C., *Africa's Infrastructure: A Time for Transformation*, Agence Française de Développement/World Bank, 2010, p.9, http://www.infrastructureafrica.org/aicd/system/files/WB147_AIATT_Overview.pdf

Although private sector investment in infrastructure dipped dramatically following the near-collapse (and subsequent bail-out) of the US and European banking system in 2008, it has since substantially recovered, an exception being the water sector.[33] In 2009, private sector investment in energy projects in developing countries was reported to be up 40 per cent over 2008,[34] whilst the figure for all infrastructure sectors rose 15 per cent from the level reported in 2008, with 253 projects reaching closure in 50 developing counties.[35] By 2009, the total value of projects with private sector participation amounted to $85.4 billion,[36] again surpassing public support from both China[37] and the World Bank.[38] By 2010, private investments in the transport sector

were reportedly back to pre-crisis levels,[39] as was private investment in energy,[40] although the latter has since seen a decline.[41] Overall, the World Bank reported in 2012, "Private provision is now the norm in the sub-sectors of telecommunications, ports and power generation, and a growing share of land transport infrastructure. PPI [Private participation in infrastructure] in developing countries reached an all-time high of $160 billion in commitments in 2010 (compared to $100 billion in 2005)."[42]

Infrastructure as stimulus – but for whom?

In response to the financial crisis, many governments have now committed themselves (and the public purse) to supporting infrastructure development programmes as a means of stimulating both their national economies and global growth.[43] But it would be a mistake to see such programmes as a retreat from the neoliberal policies of the past three decades that aimed to expand the scope for private sector profits from infrastructure development. Far from the private sector's role in infrastructure being reduced, the stimulus programmes are (by and large) designed to encourage greater private investment in the sector.

India, for example, hopes to raise 40 per cent of its planned $200 billion annual expenditure on infrastructure between 2013 and 2017 from the private sector[44] (although the percentage is expected to vary from sector to sector, with private investment anticipated to comprise as much as 70 per cent of the total in ports and telecoms[45]). In the energy sector alone, where the government plans to increase power generation by 68,869MW by 2012, some 13.4 per cent of the finance is to be raised from private investors.[46] Financial analysts predict that, by 2017, private companies will provide some 50 per cent of India's energy,[47] as against 12 per cent in 2010.[48]

In the roads sector, too, massive spending is planned, again with major private sector participation.[49] Announcing the world's biggest road building programme in 2009, Kamal Nath, India's then Minister for Road Transport and Highways, stated that he wanted to spend $70 billion by 2012 on building 7,000 kilometres of world-class highways;[50] $48 billion of the investment is expected to come from the private sector,[51] with 60 per cent of the new build taking the form of "build-operate-transfer" toll road

schemes.[52] "The good news", commented *Venturebeat*, "is that Corporate India is stepping up to the plate to take up projects that will alleviate the country's infrastructure constraints. And it is finding willing partners among Private Equity firms to fund these vital projects."[53]

Governments argue that the sheer size of the "infrastructure gap", coupled with the lack of government funds due to the huge costs of bailing out or propping up the banks in the wake of the Global Financial Crisis, mean that they have no choice but to make such concessions in order to entice the private sector into infrastructure development. But this narrative fails to stand up to close scrutiny. Considerable untapped pools of public money exist in many developing countries, notably public pension funds for state employees, that could be used for public sector investment in infrastructure.[54] Governments could also restore their depleted coffers by abandoning the low tax regimes imposed through neoliberal structural adjustment programmes, or by clamping down on tax evasion and capital flight. But such policies would mean dismantling the political and economic alliances that underpin the current relationship between the dominant elements of the state and private sectors, a relationship in which state power is brought to bear not to restrain accumulation but to enable it, be it through privatisation, intervention, regulation or, indeed, deregulation.[55]

Unsurprisingly, the infrastructure policies now being pushed by governments are aimed at maintaining the current state-private combo rather than restructuring it. To attract infrastructure investors, the Indian government (like many other governments) is rolling back hard-won environmental and social regulations, particularly those protecting poorer people against forced evictions. With only 8-10 per cent of infrastructure funding currently financed through foreign investors, the Indian government has set up a high-level committee (including the head of investment bank Goldman Sachs in India) to identify "regulatory or legal impediments constraining private investment in infrastructure" and to "issue specific recommendations for their removal".[56] Wide-ranging compulsory purchase powers, for example, are to be used to "secure 80 per cent of all the land needed for a road project before inviting the private sector to bid on it".[57] Such policies have provoked fierce resistance, with critics accusing the Indian government of "assuming the role of a property dealer and real estate agent" for

corporate interests. [58] In November 2010, thousands marched through the country's capital, Delhi, to protest against amendments to the already unpopular Land Acquisition Act that would grant the government new powers to expropriate land for infrastructure development and remove land expropriations from oversight by the courts. [59] [60] As India's *Monthly Analytical Review* comments:

> "Using 'development' as dress, compliant state governments are put to use, invoking colonial statutes to seize vast properties juridically. In these obscene deals, for each [100,000 rupees] of Reliance or Tata or Goldman Sachs' future real estate profits, a thousand or more of poor rural residents are driven from their lands into the slums."[61]

In Indonesia, where problems over land acquisition have delayed toll road and other projects, the government passed new legislation in 2011 to ease expropriation,[62] leading private equity investors to predict a "boost in transport, power and port development".[63] Human rights groups warn that the bill disregards traditional land rights and predict increased conflicts over land and forced expropriation of property.[64]

Other incentives now being offered by the Indian Government to infrastructure investors include tax breaks[65] and an $11 billion fund to provide debt finance for infrastructure projects through tax-free infrastructure bonds.[66] To encourage investment from offshore funds, the Ministry of Finance plans has exempted income from such investments from tax and proposes to reduce withholding tax to 5 per cent.[67] Such policy changes, which were expected to raise some $6.5 billion in 2010-11 alone,[68] have led some overseas infrastructure investors to describe India as "the most attractive market in the world", with "breathtaking" money-making opportunities now on offer.[69]

Other countries are competing to put in place similar "investor-friendly" infrastructure regimes. In The Philippines, which is seeking to attract $10 billion a year from private sector infrastructure investors,[70] the government recently announced that it would guarantee all infrastructure projects built on a Public-Private Partnership (PPP) basis against "regulatory risk",[71] that is, the risk that future environmental or social regulations might undermine the profitability of investments. According to *Infrastructure Investor*, the country's President "prioritised ten infrastructure projects worth $3.1bn to be tendered by the end of 2011".[72] In Indonesia, the government has

similarly set up a fund to compensate investors who "lose out" from "unpredictable government policy changes".[73]

Legislation is also being introduced in many countries to encourage public pension funds (which, to recall, are a major potential source of public finance for infrastructure) to invest in privately funded infrastructure programmes for the profit of the private sector. In Africa, countries such as Namibia, Kenya, Nigeria, Botswana and Tanzania are looking at amending their legislation and regulations to allow national pension funds to invest in infrastructure projects,[74] whilst South Africa[75] and Nigeria[76] have already done so. Investors predict that the changes in South Africa's legislation, which allow pension funds to increase the percentage of funds allocated to riskier investment vehicles, could lead to a ten-fold surge in pension fund investments in hedge funds and private equity funds,[77] a high proportion of which (it is hoped) will make its way to infrastructure development. China (described by *Asian Venture Capital Journal* as "Asia's favourite money pit"[78]) has also opened the way for insurance companies not only to invest in private equity funds, but also to raise private equity funds themselves, generating what *Private Equity International* describes as "another rich vein of capital to potentially tap into on the fundraising trail".[79] In India, controls limiting investments in infrastructure by foreign pension funds have been loosened[80] and further deregulation is expected. Recently, the Chair of the Securities and Exchange Board of India (SEBI) called for the relaxation of regulations prohibiting state-run pension funds from lending to infrastructure projects.[81] [82] [83]

In Latin America, vast infrastructure spending is envisaged through the Initiative for the Infrastructure Integration of the South American Region (IIRSA),[84] including major energy, transport and other projects throughout the sub-continent.[85] IIRSA is intended to overcome the obstacles posed to regional integration by the sub-continent's natural 'barriers'.[86] Again, the private sector is expected to play a leading role. In Brazil, where the government plans to spend half a trillion dollars over the next five years on infrastructure projects, including major new dams, railways and nuclear plant,[87] private sector investors are being offered tax breaks as long as their infrastructure investment is part of the Government's Growth Acceleration Programme.[88] Ninety-two per cent of

the finance for the 731 major new infrastructure projects on which work has commenced involves some element of private participation.[89]

Mexico has also overhauled its legislation to enable Public Private Partnership (PPP) initiatives in order to encourage private investment in the region.[90] In addition, the rules governing the country's mandatory pension funds were changed in 2009 to allow them to invest in financial securities known as a Certificados de Capital de Desarrollo, or CKDs;[91] these are issued by local trusts, which then invest in individual projects or in private equity funds that are investing in infrastructure. The US private equity firm Goldman Sachs Infrastructure Partners has already used the scheme to finance a toll road.[92] In 2011, Conduit Capital,[93] another US firm, which manages three energy funds focused on Latin America, was also reported to be planning to use the scheme to tap Mexican pension funds for $150 million for a range of infrastructure investments.[94]

Even China, where until recently infrastructure development was entirely in the hands of state institutions, is opening up to the private sector, with 60 infrastructure companies publicly traded on the stock exchange in 2010. [95] Indeed, many predict that China will soon be the world's foremost recipient of private equity finance for infrastructure development. Accountants Ernst & Young report that China has already overtaken Germany to become the second most attractive country after the US in which to invest in renewables.[96]

New vehicles and financial instruments: the morphing of debt finance

The push by governments to expand the private sector's involvement in infrastructure development forms part of a wider effort by both state and private sector actors to transform "infrastructure" into an asset class. This requires more than creating openings for the private sector to build and manage infrastructure projects: it also requires manufacturing opportunities for accumulation that go beyond those that arise from simply building and operating new toll roads or water plants. With the trade in financial instruments now providing the greatest source of enhanced profit, this in turn

has meant creating investment structures that maximise the buying and selling of money or the products of money.

Debt and equity remain the prime means by which companies in the infrastructure sector fund both their own expansion and the building of projects. But, reflecting the construction of infrastructure as an asset class, the raising of debt for infrastructure development now involves a proliferating array of transactions, each of which expands the scope for accumulation, and a range of new financial actors.

Since the 1970s, loans for private sector infrastructure projects have generally been raised through what is known as "project finance", a form of debt finance in which banks lend money against the projected income of a project but have no recourse to the assets of the project developer other than those of the project itself and the income from the sale of its "off-take" or products. Traditionally, the deal involved two main parties: the banks and the project sponsors. But project finance has now morphed into "structured finance". In the process, infrastructure projects have become raw material for constructing multi-layered deals, involving a bewilderingly cat's cradle of financial products and markets, with each additional transaction generating arrangement fees and opportunities for speculation by intermediaries. Derivative-based[97] interest rate and currency swaps have been added to the mix, fuelling the expansion of swap markets and creating opportunities for speculative trading.[98] To move older project finance loans off their books, thereby creating headroom for new loans, banks have turned to techniques pioneered in the sub-prime mortgage market. These involve bundling up packages of older loans, hiving them off into special purpose vehicles and then issuing derivatives known as Collaterised Loan Obligations (CLOs)[99] that give investors the right to the income from the loans but not to the underlying assets. Such arrangements in turn spawn additional deals: for example, the special purpose vehicle may issue further derivatives known as credit default swaps, allowing investors to bet on the credit worthiness of the underlying loans that have been bundled together.[100]

Within the oil and gas industry, other new forms of project finance have been bricollaged together to create deals through which companies pre-sell slices of the expected future income from their oil and gas exports to a special purpose vehicle, which then sells derivative-based bonds to investors, the bonds being serviced through

that expected income. In some cases, the pre-sold income is from an existing project; in others, from projects that have not even been built. Either way, the company receives a lump sum up front, which can be used for its general capital expenditure. Such “future flow finance”[101] (also known as “structured commodity finance” [102]) is now a standard feature of the debt finance landscape in the oil and gas industry and has been used to fund oil and gas expansion in Angola,[103] Qatar[104] and elsewhere. In common with other newer forms of project finance, the deals expand the number of markets and financial actors who stand to gain from them. To hedge against volatility in the future prices of the pre-sold oil and gas, futures and options may be taken out on the oil and gas commodity markets or swaps may be entered into with commodity dealers, for example, to “convert a stream of spot price-based receivables into a stream of fixed-price payments”.[105] Monoline insurers (firms that specialise in insuring bonds) may also be called upon to insure the bonds issued by the special purpose vehicle. Typically, therefore, each “primary” deal may involve associated deals spanning multiple markets – from the bond markets to foreign exchange markets, commodity markets and the monoline insurance markets – spreading the potential for profit throughout the finance supply chain.

There have been changes, too, in the providers of private sector debt finance for infrastructure, the bulk of which has historically been sourced from commercial banks. In some regions and infrastructure sectors, this remains the case. But with many of the biggest international banks reining in their lending as they seek to rebuild their tattered balance sheets following the Global Financial Crisis, project developers are also turning to the largely unregulated “shadow banking system”, which now lends as much, if not more, in the United States than the formal banking system.[106] [107] The private equity firm Warburg Pincus, for example, has developed so-called “lines of equity” (LoE) in order to ensure predictability of funding to its investee companies at a time when credit markets are squeezed. In an LoE, Warburg Pincus "commit what can be quite a large a sum up front to a management team, which has access to the equity as the company expands”.[108] The LoEs are "particularly well adapted to energy growth companies because it takes away the uncertainties related to volatile markets".[109] Since the beginning of 2011, the firm has led six LoEs, including a $1.125 billion financing for

Venari Resources, a start-up company focused on deep-water drilling in the Gulf of Mexico.[110]

According to Robert Petty of Clearwater Capital Partners, the trend of local companies raising debt from non-bank lenders is increasingly pronounced throughout Asia – and is likely to continue.[111] India's Planning Commission projects that more than half the debt needed for the government's infrastructure programme will come from "non-bank finance companies".[112] Recently, the government "liberalised" the previously tightly controlled domestic corporate bond market by allowing foreign investors to buy up to $3 billion in infrastructure companies' debt via mutual funds;[113] previously only local banks were permitted to provide debt finance for infrastructure projects in India.[114] In China, the "underground banking"[115] market is estimated to be worth some $400-500 billion,[116] accounting for as much as 40 per cent of the credit market.[117]

Private equity infrastructure funds[118] have already moved to market their own "debt funds", both to furnish their own needs for debt and to capitalise on the increasing demand for debt financing.[119] In general, such funds offer mezzanine debt (debt that is ranked below other forms of loans with regard to the priority of claims on assets or earnings but on which the interest paid is usually closer to the return on equity) but also senior loans. Preqin, a private equity research consultancy, has predicted that the market for such debt funds will double in size over the coming years.[120]

Although the biggest debt funds are targeted at Europe and North America, a significant number are focused on emerging market economies. According to Preqin, 18 debt funds are currently raising, or have raised, funds valued $7.4 billion for infrastructure investments in developing countries, with 12 primarily focused on Asia.[121] The US-based Darby Overseas Investments,[122] for example, manages four debt funds that invest in Asia or Latin America, whilst Cordiant Capital, a Canadian fund, has three loan funds,[123] one of which – Cordiant Capital Loan Fund III [124] – has reportedly loaned money to Kosmos Energy for developing its Jubilee off shore oil field in Ghana[125] and to the Schahin Group to construct a deep water drill ship to expand offshore oil and gas development in Brazil.[126] Cordiant also manages the Infrastructure Crisis Facility Debt Pool, which provides direct loan financing to "infrastructure projects originated by International Finance Institutions that cannot obtain commercial financing or re-finance

existing loans as a consequence of the global financial crisis and the tightening of bank lending".[127] In Europe, the UK private equity group 3i has recently acquired Mizuho Corporate Bank's debt management business to form 3i Debt Management, which now has about £5 billion in assets under management.[128] Although currently focused on European deals, the 3i fund states that it expects to expand "to other geographies".[129] The World Bank's International Finance Organisation is also invested in a number of private equity debt funds.[130] It is also reported that The Goldman Sachs Group, Inc., Ashmore Group plc and private equity firm Everstone Capital, "along with a few other funds", are setting up a "non-bank" finance company in India.[131]

The rise of infrastructure funds

The landscape for raising equity finance for infrastructure is also changing. Private investors have historically proved reluctant to make *direct* equity investments in specific new infrastructure projects. Construction overruns, escalating costs, regulatory tussles, opposition from affected communities over resettlement, and social and environmental impacts, not to speak of the absence of a balance sheet, make new projects extremely risky, from both the financial and reputational point of view.[132] But with the infrastructure sector set to boom, investors are keen not to lose out on possible profits.

The solution, engineered by investment banks such as Australian investment bank Macquarie, has been to create "infrastructure funds" – pooled vehicles through which investors can invest in companies within the infrastructure sector without having to invest directly in the projects that the companies are building (a task usually undertaken by separate corporate entities specifically set up for the purpose), thus reducing the investment risks inherent in the sector.

Between 2004 and 2009, 44 dedicated infrastructure funds targeting emerging markets raised an aggregate $20 billion[133] – with total annual investments rising steadily from $1.2 billion in 2005 to $4.7 billion in 2009.[134] But, as private equity builds its social and political base, its market is deepening and expanding.[135] Worldwide, the total investment by the top 30 private equity infrastructure funds over the past five years has

topped $181 billion.[136] By 2010, private equity infrastructure investments in India alone reached $4 billion – with deals over the next three years projected to grow by 25-50 per cent.[137]

It's all about money, money

Private equity infrastructure funds take two main forms: listed funds (whose shares can be bought and sold on stock markets); and unlisted funds (whose shares are placed privately and which are not listed on stock exchanges).

For tax reasons, unlisted funds are typically organised as "partnerships", which means that the fund's profits are not taxed as income: instead, the investors pay capital gains tax on any gains or profits in their investments,[138] generally at far lower rates than income tax.

The funds are managed by "General Partners", who raise the money and select the investments that the fund will make – for which they charge a management fee (typically 2 per cent) in addition to taking a cut of the funds' profits (usually 20 per cent but sometimes 30 per cent).[139]

The investors in a fund are known as "Limited Partners" and are generally made up of High Net Worth Individuals, pension funds, insurance companies, endowment funds, sovereign wealth funds and, in a significant proportion of funds, Development Finance Institutions (DFIs).[140]

Whilst General Partners sometimes grandly promote private equity as a vehicle for improving corporate performance, Limited Partners have a more straightforward objective: to make money. Required to "lock in" their investments for a period of ten years, limited partners seek a quid pro quo for such constraints on liquidity: well above-market returns,[141] generally of the order of 30 per cent a year.[142] "It's about money – very specifically, cash-on-cash returns", writes Dan Schwartz of *Asian Venture Capital Journal*. "It's about beating the returns of listed markets."[143]

Although infrastructure funds tend to yield lower overall returns than many other private equity funds – generally in the region of 10-20 per cent[144] – investments in some sectors can return triple digit percentages: US private equity investors in energy are reported to have made returns of 140 percent in 2004 and, even with the financial crisis, were still achieving a return of 40 per cent in 2010.[145] In August 2012, Clove Capital Partners, "a spin out from EMP Global's Asia practice", sold its wholly owned subsidiary Energy Best Limited ("EBL") for a "a cash on cash return multiple well in excess of 20 times".[146] At the time, Energy Best held a 40 per cent interest in VenturOil Philippines Inc., a Philippine oil company with oil assets in various offshore oil concessions in the Philippines.

In some countries, too, private equity funds are unlikely to be satisfied with returns in the low double digits: according to Clark Zhang, director of PiYi Investments, many investors in China would view a 20 per cent rate of return "as a loss".[147]

Infrastructure funds are not new,[148] but their entry into the investment mainstream is comparatively recent. The first was set up in the late 1980s by the Boilermaker National Pension Fund with the express aim of investing in infrastructure that employed unionised labour.[149] What began as an attempt to shift patterns of investments in a more socially-progressive direction was quickly picked up by mainstream investors for purely money-making, speculative purposes. In 1993, Peregrine Investors (which later went bankrupt)[150] launched its Asian Infrastructure Fund, co-sponsored with Soros Fund Management, a hedge fund run by George Soros, who made a fortune speculating against the UK pound in the early 1990s.[151] In 1994, AIG (the US insurance giant that went spectacularly bust in 2008 after speculating on derivatives, triggering a massive US government bail-out) launched the first of a family of infrastructure funds, including its AIG Asian Infrastructure Fund[152] (jointly set up with the government of Singapore and Bechtel)[153] with investments in power generation in India and elsewhere. Subsequent AIG funds included the AIG Latin America Infrastructure Fund[154] (whose investments include power, water and mining companies)[155] and AIG Africa Infrastructure Fund[156] (with investment in oil exploration in Gabon).[157] AIG's Asia and Latin America funds are now managed by EMP Global,[158] whilst its Africa Fund is managed by a US private equity firm Emerging Capital Partners[159] (whose Africa Fund II is currently under investigation in Nigeria and the European Union over allegations of fraud and links to money laundering, allegations that the company denies).[160]

Other funds have followed.[161] Australian investment bank Macquarie,[162] which owes its global status in large part to its pioneering of "infrastructure" as a new asset class, has set up a range of infrastructure funds focused on Europe, North America and Asia. The private equity arms of numerous other investment banks, including BTG Pactual,[163] Citi,[164] Credit Suisse,[165] Deutsche Bank,[166] Goldman Sachs,[167] J.P. Morgan,[168] Morgan Stanley,[169] Nomura,[170] Santander[171] and Standard Bank,[172] have all joined the fray, launching their own specialist infrastructure funds (*for further details, see Annex 1:*

Private equity funds with reported investments in infrastructure in developing countries).

North American, European, Asian, Middle Eastern and Latin American private equity firms, both small and large, are also jostling to get into the "infrastructure space", including a $1.5 billion India infrastructure fund launched by the granddaddy of private equity (and original "barbarian at the gate")[173] Kohlberg Kravis and Roberts (KKR).[174] Funds from Central and Eastern Europe, sub-Saharan Africa, the MENA region, Latin America and Asia are emerging to compete with those from North America and Europe, with India's Everstone Capital,[175] Brazil's Patria Investimentos[176] (which recently raised $1.2 billion for one fund in just 8 months) and "Middle Eastern behemoth" Abraaj Capital[177] both making it into the top 300 private equity firms worldwide.[178]

In addition, construction firms are setting up their own dedicated infrastructure funds, enabling them to raise funds more easily from investors for new infrastructure projects.[179] European construction companies, such ABB,[180] Balfour Beatty[181] and John Laing[182] have all set up (or are in the process of setting up) company-sponsored infrastructure funds. Balfour Beatty designs, constructs and equips "power stations of all types – from nuclear through to gas fired, oil, coal, wind and hydro-powered",[183] whilst Laing is involved in road projects in India and Eastern Europe.[184] In February 2010, more than 20 leading British construction firms and finance companies came together to form the British-India Roads Group (BRIG), with the aim of entering into joint ventures or special purpose vehicles (SPV) with Indian partners to capitalise on India's massive road-building programme.[185]

India's Power Finance Corporation also reports that it is planning to float a separate subsidiary company to syndicate loans for projects, by "providing complete end-to-end project finance solutions".[186] The Indian engineering and construction conglomerate Larsen & Toubro Limited (L&T) has established an infrastructure finance arm, L&T Infra, to provide financial products and services for its clients engaged in developing projects in India's power, roads, telecommunications, oil and gas, and ports sectors. L&T Infra has "played a fundamental role in financing projects" funded through infrastructure bonds and loans.[187]

The volume of private equity investment

For the most part, the sums raised by emerging market infrastructure funds have been in the low hundreds of millions of dollars, in sharp contrast to funds focused on Europe and North America that regularly exceed one billion dollars. Nonetheless, some emerging market funds have broken this billion-dollar barrier. US insurance giant AIG's Asia Infrastructure II Fund, set up in 1997, was one of the first to do so. At the time, the $1.6 billion that the fund raised constituted the region's "largest pool of private capital".[188] The fund made 18 investments in industries ranging from petrochemicals to transportation, cement, agribusiness and paper manufacturing.[189] Other "billion plus" funds include Brookfield Asset Management's[190] $2.6 billion Chilean Transmission Fund, whose assets constitute the transmission lines that form the backbone of the Chilean electricity sector, "delivering power to approximately 99 percent of the Chilean population"[191] and 3i,[192] with $1.2 billion for its India Infrastructure Fund.[193]

Judging the influence and impact of "emerging market" infrastructure funds solely by their dollar value, however, may be misleading. Although small in comparison to Europe and North America infrastructure funds,[194] "emerging market" funds have nonetheless outstripped their North American counterparts in terms of the number of deals they have conducted, reflecting the smaller deal size in developing countries – as of 2010, a total of 313 deals had been completed in Asia and the Rest of the World as against 295 in North America.[195]

New "emerging market" infrastructure funds are being launched almost weekly. In 2011, an estimated 50 new dedicated infrastructure funds were "on the road", reportedly seeking to raise $26.8 billion for "emerging market" investments,[196] a sum which, if achieved, would put private equity on a par with the World Bank group ($21 billion a year)[197] as a source of infrastructure finance for developing countries. Existing funds are also thought to have over $15 billion in "dry powder" (capital that is as yet uninvested) waiting to be allocated for investment in developing countries.[198] Indeed, infrastructure funds are rapidly being transformed from a niche backwater of

infrastructure finance into its Riviera. Already the annual volume of investment by private equity infrastructure funds in some developing countries far exceeds that made by individual multilateral development banks. Investments in India grew from $1 billion in 2006 to $4 billion in 2010.[199] By contrast, the World Bank invested $3 billion in 2009-10.[200]

The sums raised for investment by private equity, however, are likely to underestimate the total financial contribution made by funds to infrastructure development. Many funds borrow heavily on the basis of the amounts raised from their investors,[201] typically leveraging this pool of capital by three or more times.[202] According to the Asian Development Bank, the $780 million raised by Hong Kong-based AIF Capital for its Asian Infrastructure Fund I[203] leveraged investments valued at $6 billion.[204] When such leverage is taken into account, the volume of investment flowing through infrastructure funds increases dramatically.

In addition, many private equity funds that are not sector-specific are dipping into infrastructure "opportunistically", making individual investments where they look like good bets. Because such investments are not made by dedicated infrastructure funds but form part of more general investment portfolios, they are not captured by the annual estimates for volumes of private equity flows to developing country infrastructure. Yet they can be considerable. For example:

- US private equity giant Blackstone[205] has invested over $3 billion in Sithe Global Power,[206] an energy development company with interests in Africa, Mexico and the Middle East.[207] Sithe is part of the consortium that took over the development of the controversial Bujagali Dam in Uganda after US-based AES Energy pulled out of the project in 2003.
- US hedge fund Och Ziff[208] is reported to be invested in Gammon, an Indian infrastructure company involved in oil and gas pipelines, hydro-electric projects, roads, highways, bridges, tunnels and dams.
- Eton Park Capital Management,[209] a New York-based hedge fund founded by former Goldman Sachs partner Eric Mindich, brought 10 per cent of the JSW Infrastructure, part of the Indian steel, energy and infrastructure company JSW

Group.[210] Eton Park's money will be used to develop JSW's ports business, which is expected to grow dramatically as exports from India, particularly of minerals, expand.

- Eton Park is also reported to have invested (along with financier George Soros) in GMR Infrastructure, one of the fastest growing infrastructure companies in India, which has stated it intends to use the money raised to build a special economic zone (SEZ) and to buy coal mining and power assets, among other developments.[211]

- In Latin America, Eton Park is reported to be involved (together with the Tudor Capital Group[212] and Ecofin[213]) in HydroChile, [214] a company that develops "build, own and operate" run-of-river hydro-power stations in Chile, including the strongly-opposed Aguas Calientes dam.[215]

When such opportunistic infrastructure deals are added to those undertaken by dedicated infrastructure funds, the total volume of investments by private equity firms in developing countries is likely to approach that invested through official development assistance.

Who's investing? The financialisation of public funds

Institutional investors in infrastructure funds include a diverse array of private sector bodies – from pension funds to banks, insurance companies, endowment funds, corporates and asset managers. Currently, such institutional investors make up some 70 per cent of those committing funds to infrastructure.[216] Moreover, the interest of private pension funds in infrastructure is growing as fund managers turn from poorly-performing equity markets to "alternative assets" in order to match their future liabilities and diversify their holdings.[217] More private sector money is thus predicted to flow into the sector, which currently taps just a fraction of the total volume of private sector funds available for investment – estimated in 2009 at $65 trillion.[218] Less than 1 per cent of the $16 trillion held by private pension funds worldwide, for example, is currently invested in infrastructure projects.[219]

But whilst the discourse on infrastructure-as-asset-class centres on the role that private equity funds and other investment vehicles can play in bringing "private" money into the sector, not least because the public funding cupboard is said to be bare, a more telling set of figures relates to the extent to which private equity funds are also attracting large sums of *public* money. Indeed, such public funders now account for more than one-third of the institutional investors in infrastructure, with public pension funds leading the pack (20 per cent of all investors) and government agencies or funds accounting for a further 13 per cent. [220] By contrast, private sector pension funds make up just 13 per cent of investors, whilst "family offices" (firms that manage the funds of wealthy families) account for a mere 1 per cent. A similar pattern emerges for the investors in private equity funds (not just infrastructure funds) investing in Asia. [221] Far from being dominated by Bollinger-swilling Trustafarians (the popular image of private equity funds), governments or government agencies form the largest single group of private equity investors.

Such figures are indicative of the extent to which the current state-private combo has blurred the boundaries between state and private. Indeed, both in form and function, significant sources of public funding are now managed as if they were (in all but name) private sector funds. By way of example, Canada's Ontario Municipal Employees Retirement System (OMERS), created by statute in 1962 to handle the retirement benefits of local government employees in the province of Ontario, now runs its own private equity and venture capital funds. In that respect, the role of the state within the current state-private combo goes beyond merely smoothing the path for financialisation of infrastructure through de- and re-regulation: the management of public funds has itself been financialised.

Public sector pensions

In jurisdictions such as Ontario, Quebec, California, The Netherlands and Australia, public pension funds already invest more than 5 per cent of their total assets (and typically more than one-third of their "alternative" assets) in infrastructure.[222] Canadian public pension funds have led the way: major players include OMERS, which has invested $15.5 billion in infrastructure funds, and the CPP Investment Board, [223] which

manages the $161 billion Canada Pension Plan (CPP), a joint creation of Canada's federal government and nine provincial governments ($6.8 billion).[224] The significant US public pension fund CALPERS is also a prominent investor in infrastructure.[225]

Whilst the bulk of public pension fund investment has gone to North American and European infrastructure funds, many investments have also been made in emerging market-focused funds. 3i's India Infrastructure Fund,[226] for example, has attracted investments from Canada's Alberta Investment Management Corporation,[227] a crown company that manages 26 pension, endowment and government funds in the province of Alberta and has assets of $70 billion;[228] from Scotland's Lothian Pension Fund,[229]which provides pension services for local government employees in Edinburgh and Lothian;[230] and from the Netherland's All Pensions Group.[231] [232] The Canada Pension Plan Investment Board is likewise invested in CITIC Capital, which invests in infrastructure in China.[233]

The financialisation of public pensions is a growing trend within developing countries as well. In the Philippines, for example, a $577 million state-backed Philippine Investment Alliance for Infrastructure (PIAI) has been established to channel public pension funds into infrastructure. The fund is managed by a private sector fund manager, Macquarie Infrastructure and Real Assets (MIRA), a division of the Macquarie investment banking group that describes itself as a "global leader in the creation and management of specialist funds".[234] Key investors in PIAI include the Government Service Insurance System (GSIS), the Philippines' biggest pension fund, which has committed $300 million, MIRA (with $50 million) and two unnamed foreign institutional investors. The fund will target public-private partnerships (PPP) in the transport, communications, energy and water sectors.[235] In Brazil, meanwhile, Petros, the pension fund of the Brazilian state-controlled oil company Petrobras, has already developed a number of partnerships with private equity firms, including Rio Bravo,[236] which is "looking for investment opportunities in the large and small hydroelectric sector, wind farms, biomass, thermoelectric plants and transmission companies".[237] In China, the National Social Security Fund[238] (with $134 billion in funds) is now allowed to invest in private equity.

As noted previously, many developing countries are also changing their pension fund legislation to attract more public (and private) pension fund money into infrastructure. There are also proposals that developing countries should pool their pension funds to form regional infrastructure investment funds, an idea promoted by Brian Molefe, chief executive of South African freight giant Transnet and the former head of South Africa's Public Investment Corporation. Molefe argues that such a policy would put some $250 billion at the disposal of African countries, which would better serve the continent if invested in infrastructure instead of foreign equity markets.[239]

Moreover, the appetite of pension fund managers for investments in infrastructure is reported to be growing.[240] Unsurprisingly, pension funds are being actively courted for investments: Indian investment manager Neev Capital, for example, has reportedly sought to sign partnerships with large pension funds from Scandinavia, The Netherlands, the UK and Germany.[241]

Sovereign Wealth Funds

Sovereign Wealth Funds (SWFs) – pools of assets and investments owned and managed (directly or indirectly) by a national or state government – are another body of financialised public funds whose activity is increasingly indistinguishable from the private sector and which are now instrumental in building infrastructure-as-an-asset-class. Worldwide, 41 countries now have SWFs. Collectively, such funds represent a massive pool of potential capital for investment, with an estimated $4.7 trillion in assets under management.[242] In early 2011, some 67 per cent of SWFs had investments in infrastructure,[243] with most handling their investments directly rather than using dedicated infrastructure funds.[244] Singapore's Sovereign Wealth Fund GIC, for example, recently teamed up with TPG, the world's largest private equity company, to co-invest in Delta Dunia, an Indonesian coal mining services company. The deal, valued at $400 million, was "one of the largest private equity deals ever done in Indonesia".[245] Delta Dunia provides various services to Indonesia's coal mining operators, including its subsidiary Bumi Resources, Indonesia's largest mining group.

The Chinese SWF, the China Investment Corporation (CIC) (with $200 billion of assets),[246] similarly pursues a direct investment strategy for some of its infrastructure

portfolio, with holdings in AES, the power and utilities giant,[247] and a Mongolian mining company.[248] But it has gained additional exposure to the infrastructure sector through investments in the private equity firm Blackstone, which part-owns Brazilian infrastructure fund Patria Investimentos.[249] CIC is reported to be discussing a $4 billion loan fund for infrastructure investments in Indonesia as well.[250] There are also moves to invest through other private equity firms: in November 2011, CIC was said to be in discussions with Citadel Capital, which invests in mining, rail and water transport, agriculture and solid water management among other businesses in 15 African countries.[251] The government's China National Development Bank (CNDB) has also set up its own private equity fund, managed by the Sino-African Development Fund Limited Corp, to invest in Africa.[252]

But SWFs are reported to be considering greater use of private equity infrastructure funds.[253] The largest SWF in the world, the Abu Dhabi Investment Authority (ADIA), already complements its direct investments and co-investments with investments through both unlisted and listed infrastructure funds.[254] Other funds with SWF involvement include AIF Capital's Asian Infrastructure Fund, which has made investments across Asia in the transportation, telecommunications and power sectors,[255] and CDH Investments, a $5.5 billion China-based fund with investments in solar and cleantech.[256]

Some SWFs are launching their own dedicated infrastructure funds. In 2008, for example, the Abu Dhabi Investment Authority (ADIA) joined with Swiss bank UBS to launch the ADIC-UBS Infrastructure Fund I[257] to invest in the Middle East and North Africa region, although it subsequently liquidated the fund in the wake of the global financial crisis.[258] More successfully, the Mubadala Development Company, a SWF wholly owned by the government of the Emirate of Abu Dhabi, has established its own dedicated infrastructure fund manager, Masdar Capital, which is seeking "to build a portfolio of the world's most promising renewable energy and clean technology companies".[259] And in 2010, China's vice-minister of finance Li Yong suggested that Asian countries should establish a pan-Asian Sovereign Wealth Fund,[260] which would invest in infrastructure regionally.[261]

Development Finance Institutions

In addition to public pension funds and SWFs, a third major source of public funding that is now being directed towards private equity infrastructure funds comes from the major bilateral and multilateral Development Finance Institutions (DFIs),[262] such as Britain's CDC Group[263] and the World Bank's International Finance Corporation (IFC). Of the 350 private equity infrastructure funds analysed by The Corner House, 115 have reported investments by one or more such publicly funded Development Finance Institutions (DFIs) (*see* Annex 2). The investments made by the different agencies are detailed in Annex 3. Other government agencies, such as export credit agencies, such as Canada's Export Development Canada[264] and China's Export-Import Bank,[265] are also invested in a number of funds. According to African Investor, DFI investors reportedly constitute around 9 per cent of the total number of active investors in African private equity.[266] Overall, such governmental agencies constituted 4 per cent of the investors in infrastructure funds surveyed by Preqin in 2010.[267]

DFIs have long been active investors in developing country-focused private equity infrastructure funds. Indeed, in a telling example of the revolving door between public and private finance that is a cornerstone of the current state-private combo, several of the first-ever funds were set up by former staff members of the World Bank, with capital initially raised from their erstwhile employer or other multilateral development banks. EMP Global, which describes itself as "the world's largest private equity firm investing in emerging markets",[268] is a case in point. Persuaded that "marshaling private capital flows for emerging markets offered an attractive business opportunity",[269] its founders, Moeen A. Qureshi and Donald C. Roth, both former high-flyers at the World Bank (Moeen Qureshi was Chief of Operations and Donald Roth was Treasurer), left 1818 H Street for the world of private equity.

EMP now runs seven funds, with investments worth $6 billion spanning the globe "from Korea to South Africa to Argentina".[270] Investors in one of EMP's first funds, the AIG Africa Infrastructure Fund, included such non-private capital sources as the World Bank's International Finance Corporation, the African Development Bank, CDC Group (UK),[271] the Development Bank of Southern Africa, the European Investment

Bank,[272] Finnfund (Finand),[273] Norfund (Norway),[274] Proparco (France),[275] SIFEM (Switzerland)[276] and Swedfund (Sweden).[277]

Such investments reflect the growing use by DFIs of "intermediaries"[278] (primarily banks but also private equity firms) to invest in the private sector, with the intermediaries, as opposed to the development agency, deciding where the money is ultimately invested.[279] It is an approach that has proved highly profitable. In 2008, the World Bank's International Finance Corporation reported making returns of "more than 20 per cent" from its investments in some 135 funds.[280] The World Bank's Britain's CDC Group's investments in private equity funds have resulted in an average annual growth in the Group's assets of 24 per cent – six times the rate of return required of public investments by the UK Treasury.[281] In some years between 2005 and 2007, CDC earned between 42 and 57 per cent on its investments.[282] The Group has regularly outperformed the MSCI Emerging Markets Index (a measure of the performance of stock market-listed equities in global emerging markets) by 6 per cent.[283] As such, its returns compare favourably with those from investments by speculative commercial firms such as hedge funds, private equity and other elements of the shadow banking system. The financial success of its investments has earned tens of millions in bonuses for its fund managers.[284]

The agencies argue that "intermediated finance" not only cuts administrative costs but also leverages more funds from private sector investors. Whilst that latter claim may be true in a minority of cases, the huge sums that the private sector is now pouring into infrastructure suggests that no encouragement is needed from DFIs to invest: the profits to be made are sufficient incentive.[285] Moreover, far from breaking new ground by taking on riskier investments to encourage the private sector to follow, the private equity funds in which the development agencies have invested are heavily focused on countries, such as India, China, Brazil, Nigeria and South Africa, that already have considerable private capital available for investment, both from international and domestic sources. Indeed, the Asia-Pacific region as a whole now has more High Net Worth Individuals (HNWI) than Europe, collectively holding \$9.7 trillion in 2009 as against Europe's \$9.5 trillion.[286]

Concern has also been expressed by non-governmental organizations that Development Finance Institutions (DFIs) are deliberately using intermediaries such as private equity funds to circumvent many of their current environmental and social "safeguard" policies.[287] With rare exceptions (almost always the result of pressure from campaigners),[288] investments made by DFI-backed private equity funds are exempted from the mandatory screening procedures that DFIs would undertake if they were making the investments directly.[289] Instead, the funds are often left to apply their own standards – or standards they have agreed with their DFI backers – and to monitor and self-certify their implementation.[290] In the case of Britain's CDC Group, where *all* investments were, until recently, channelled through private equity funds, the majority of fund managers (perhaps unsurprisingly) rate their performance "satisfactory" or better, despite allegations that a number of CDC-backed companies have been involved in serious human rights abuses, corruption and environmental degradation.[291]

Intermediated Finance – Circumventing Standards?

The compatibility of investing via such turbo-charged profit-driven investment vehicles as private equity funds with the stated poverty alleviation mandate of most DFIs has been questioned. Shamelessly taking refuge in the widely discredited "trickle down" theory of development,[292] most DFIs generally judge the success or failure of investments primarily on the basis of their profitability:[293] the assumption is that what's good for investors must be good for poorer people,[294] or, as Nemat Safik, permanent secretary at the UK's Department for International Development, put it to a recent UK parliamentary committee: "We know quite clearly that exceptionally good financial performance is associated with improvements and development impact."[295] Even fund managers baulk at making such outlandish claims.[296] Indeed, many openly doubt the ability of private equity to deliver development as opposed to profits.[297]

Such scepticism is reinforced by independent research. In the UK, an inquiry into the CDC Group (Britain's DFI) by Parliament's Public Accounts Committee concluded that there is "limited evidence of CDC's effects on poverty reduction"[298] and that the few evaluations undertaken by CDC on its development impact "lacked depth, with little performance data apart from financial data."[299] A review of the private equity portfolio of the World Bank's International Finance Corporation (IFC) similarly concluded that any correlation between high profits and wider positive development outcomes was relatively weak and that the most pronounced impact of private equity investments was in "improvements in private sector development", such

as encouraging new entrants into the market or changes in the law favourable to the private sector.[300] In effect, what is good for private equity is good for private equity – but not necessarily for the wider public.

The infrastructure ATM – cashing in and cashing out

By and large, private equity funds investing in infrastructure in Europe and North America have made their money by building or rehabilitating projects[301] and then charging for their use, each project acting as a "fee factory"[302] or (in the words of a former Indian government minister) a giant "ATM"[303] for the fund. Typically, the funds offload many of the risks involved, particularly in building new projects,[304] by obtaining guarantees from governments, generally in the form of Public-Private Partnership (PPP) deals,[305] a form of financing that has sparked considerable controversy.[306] When a project reaches the stage when it is generating a steady and reliable income flow, the fund seeks to harness any capital gain (which can be considerable) by selling the project to other investors.[307]

But in developing countries, private equity funds are adopting a very different approach to their investments. Although some have made (or are contemplating) direct investments in projects – including the highly controversial Maheshwar Dam[308] in India and the Inga dams in the Democratic Republic of Congo,[309] which, if built, would form the world's largest complex of dams – most have opted to buy minority stakes in companies that already own infrastructure assets or are planning to build them, rather than risking their money by building and managing projects themselves.[310] According to the Washington-based Emerging Markets Private Equity Association, even "pure infrastructure funds" are investing in companies that are infrastructure-related, rather than project-specific.[311] Overall, the strategy is to gain a foothold at an early stage in a company's development; help build or expand its portfolio of infrastructure assets; and profit as the price of the company's shares rises accordingly (or so the investors hope).

Private equity funds rarely take a long-term interest in their investee companies. The real money, they hope, will come when they exit their investment by listing the company's shares on a stock market – a process known as an Initial Public Offering

(IPO). When the share offering is attractive enough, hedge funds and other speculative investors move in, creating a feeding frenzy for the shares. No IPO for a private equity-invested company in a developing country has yet raised the mind-blowing sums generated by Coal India's launch on the Indian stock market in October 2010, which mopped up an estimated $53 billion (more than the GDP of Sri Lanka) for future coal projects.[312] But IPOs nonetheless bring huge profits for private equity funds – and a substantial influx of funds for the investee company. In 2009, for example, Adani Power Limited, in which UK private equity firm 3i has invested though its India Infrastructure Fund, raised US$610 million through an IPO, sufficient to finance six proposed large coal-fired power projects: [313] this despite the company having "no significant operating history".[314] Xinjiang Goldwind Science and Technology, a private equity-backed wind power company, raised even more; it netted over $1 billion after listing on the Hong Kong Stock Exchange.[315] And Brazil's oil and gas explorer HRT Participacoes em Petroleo SA, [316] reportedly backed by private equity firms Highfields Capital[317] and MSD Energy Investments, a division of MSD Capital LP,[318] recently raised over $1.5 billion – money that will fund oil exploration in Brazil and Namibia.[319] Another private equity-backed oil and gas developer that has recently offered shares to the public is Kosmos Energy, whose May 2011 IPO raised more than $620 million.[320] Kosmos is an oil and gas exploration company whose "primary areas of operation are underexplored regions of Africa and South America".[321] In January 2011, the company was reportedly valued by industry analysts at $6 billion to $8 billion – if the company was sold, this would mean its private equity backers, Blackstone Group[322] and Warburg Pincus,[323] would receive 6 to 8 times the money they have reportedly invested over the past seven years.[324]

"Retooling capital": private equity moves South

Private investors in the North, particularly private equity firms, are leaping onto the infrastructure-as-asset-class bandwagon. Having "lobbied away"[325] (in the words of one private equity manager) the bulk of the most restrictive regulations that were proposed for their activities in the US and Europe in the wake of the 2008 global banking crisis,

many private equity firms are looking (albeit warily) to infrastructure investments in the South as a new source of profits. Reflecting concerns over the uncertainties in the European and North American markets, over three-quarters of the private equity funds raising capital for infrastructure investment in 2010 planned to make investments in Asia and the "Rest of the World" – an all time high.[326] Although the most recent 2012 survey indicates that the enthusiasm for infrastructure in emerging markets is less febrile than it was in the immediate aftermath of the banking crisis, a hard core of investors (some 25 per cent of those interviewed in the survey) remains "strongly interested" in investing in emerging markets.[327] Blackstone, one of the world's largest private equity firms,[328] announced in 2010 that it intended to double its investments in India over the next five years, with a special focus on infrastructure.[329] Other private equity firms, such as 3i,[330] planned similar increases in their allocation of funds to India.[331] The private equity arms of investment banks such as Nomura and Morgan Stanley are also hoping to capitalise on India's $1 trillion infrastructure boom, planning investments of $500 million and $200 million respectively. [332]

Attracted by industry-friendly deregulation (particularly the easing of previously restrictive rules on pension fund investments in riskier assets) and the growing spending power of the region's rising middle class, foreign private equity firms are also ramping up their investments in Latin America. Chile is currently ranked as the most "regulation-friendly" country by the Latin America Private Equity and Venture Capital Association (LAVCA), with Brazil second and Mexico third. [333] Over $10 billion of private equity fund money is now invested in Brazil's oil and gas sector alone,[334] while Mexico, which recently passed new legislation to enable Public-Private Partnerships in infrastructure, in addition to introducing a range new financial products to ease private sector investment, is described by *Infrastructure Investor* as "poised to break into the A-list of emerging infrastructure markets".[335] Other Latin American countries are also being eyed up by private equity investors: at least three private equity firms were reported to be raising infrastructure funds for Colombia,[336] which, in 2012, announced that it would be trebling its spending on infrastructure to $20 billion a year through a new programme of Public Private Partnerships.[337]

Moreover, private equity firms from the Northern industrialised countries are not the only investors seeking to capitalise on the global infrastructure boom. A reported 486 private equity firms, including venture capital firms, have now emerged in China, some of which are invested in infrastructure, whilst India is estimated to be home to 198 firms with some $26.1 billion in assets under management.[338]

Once something of a Cinderella amongst investments, infrastructure is rapidly developing into what Goldman Sachs, the US investment bank, describes as "one of the fastest growing alternative asset classes".[339] Moreover, the options for investing are rapidly expanding, with new investment vehicles emerging to suit different investors. Fund managers are salivating. "The floodgates are open", Deepak Bagla of the British private equity firm 3i (the single biggest private equity infrastructure investor in India) recently told *Deal* magazine in respect of India,[340] which has seen a "veritable who's-who of the [global] infrastructure industry"[341] descend on the country in search of a slice of the government's planned trillion-dollar infrastructure programme. Commenting on the opportunities in Brazil for UK-based investors, the consultancy firm Trusted Sources similarly writes of the "prime opportunities for City of London firms to participate in project finance in multiple areas" as Brazil seeks to meet its "massive financing requirements to build out infrastructure and develop the new oil discoveries".[342]

Others talk of "capital around the world" being "retooled" to invest in strong-growth emerging economies.[343] The management consultancy firm McKinsey&Company estimates that annual revenues of some $25 to $29 billion a year await domestic and foreign financiers willing to provide advisory, lending, transaction banking, debt and equity fund-raising and other services to the infrastructure sector in India.[344] Even sub-Saharan Africa, long considered a begging bowl of interest only to philanthropists, is now described as "a colossal investment opportunity"[345] and "the latest frontier for financial returns"[346], with private equity funds, such as US-based Emerging Capital Partners (ECP)[347] reporting returns of 300 per cent on their investments.[348] [349] [350] In its 2011 *Global Private Equity Watch* report, the accountants Ernst & Young predict a potential boom in private equity investments in Africa as investors look to "a new set of emerging markets to find opportunities to earn stronger earnings".[351] "The real news in

Africa", says ECP's Tom Gibian, "is over the last five years, virtually every country, their presidents, and even the leaders of the opposition parties, have gotten on the same page, regarding the primacy of the private sector, the need to deregulate, and the importance of attracting foreign investment. Centralised planning, state control of assets, and socialist rhetoric, for the most part, are dead. Market forces have won."[352]

From money to concrete

The equity that infrastructure funds inject into infrastructure companies (as opposed to projects) is fundamental to the development of many major infrastructure projects. The exploitation of Brazil's offshore oil fields, for example, has depended critically on the $10 billion invested by private equity funds in the oil and gas sector. The investments have largely been in companies that provide services to exploration and production firms rather than in actual oil and gas producers. But, as the Brazilian Private Equity and Venture Capital Association notes, it is precisely such service providers (without whom exploration and production would be impossible) that Brazil's offshore oil industry lacks.[353]

In building an "infrastructure for infrastructure", the investments are also playing a key role in enabling the expansion of Brazilian oil and gas companies abroad. For example, Odebrecht Óleo e Gás , the oil and gas subsidiary of Brazilian industrial conglomerate Odebrecht, confirms that the $400 million capital injection it recently received from Singapore-based Temasek Holdings will allow the company to expand its operations not only in Brazil but also in international markets elsewhere in Latin America and in Africa.[354] Moreover, as the Brazilian oil industry develops, direct private equity investments in production become more attractive. A case in point is the recent seed investment of $500 million by First Reserve Corporation, a private equity fund based in Houston, in Barra Energia Petroleo e Gas, a Brazilian start-up, that will be used to acquire exploration and production acreage in onshore and offshore basins in Brazil. [355]

Companies that have received private equity investment in India also confirm the role that the investments have played in their expansion, turning many from minor domestic players into international giants:[356]

- Goutham Reddy, chief executive officer of the Ramky Group, an Indian energy and waste management conglomerate, describes private equity as "a key stepping stone for infrastructure service providers like our group."[357] Ramky, whose focus has been servicing construction and infrastructure projects in India, is now looking at coal mines in Indonesia and "the waste management space in West Africa and South East Asia" – a transformation that has been made possible in large part through investments from private equity firms such as IL&FS Investment Managers,[358] Abraaj Capital[359] and Sabre Partners.[360]

- Adhunik Power and Natural Resources, an Indian energy company that was set up in 2005, is similarly relying on private equity funds to part-finance its plans to build 3,480MW of new coal-fired power generating capacity before 2015.[361] The company has already secured investments from two funds – the IFC-backed SBI Macquarie Infrastructure Fund[362] and the Citibank-backed IDFC Project Equity Fund.[363] The money will be used to develop a coal mine and 540 MW coal-fired power plant at Jamshedpur.[364]

- Essar Power, another Indian company in which IDFC Project Equity has invested, is using the capital it has raised through private equity funds to part-fund a planned five-fold increase in generating capacity.[365]

- Hydropower developer SEW Infrastructure,[366] which has received private equity backing from the US-based Jacob Ballas India Fund III[367] and from Citi Venture Capital International,[368] likewise reports that part of the investment will go into funding five hydro projects, which it recently "bagged" (its words) in Arunachal Pradesh.[369]

- The National Asphalt Products and Construction Company (NAPC), a Chennai-based infrastructure and contractual mining company, has also talked of using private equity to fund its expansion into coal mining, real estate and build, operate and transfer (BOT) roads and toll points.[370]

- Other Indian companies, like Ennore Coke, are reportedly looking to private equity players to enable the purchase of overseas infrastructure assets – in Enmore Coke's case, coal mines in Australia and the US.[371]

Destination oil, gas and coal

Which infrastructure sectors are benefiting most from private equity funds? A lack of transparency over investments makes it hard to say for certain.[372] But, from the limited analysis undertaken by The Corner House, fossil fuel extractors and burners are garnering the lion's share of investment (*see* Annex 4: Investments by Sector).

Investments in oil and gas exploration, extraction, refining, servicing or pipeline constructions feature most in the portfolios of the funds examined. Forty-five funds have one or more investments in the sector, financing operations *inter alia* in Argentina,[373] Brazil,[374] Colombia,[375] Egypt,[376] Ghana,[377] Indonesia, [378] Nigeria,[379] Laos,[380] Pakistan[381] and Sudan.[382] Details of the sums invested are rarely disclosed but can be considerable: First Reserve's investment in KrisEnergy, a Singapore oil and gas company building a portfolio of exploration, development and production assets in Asia,[383] amounted to $500 million.[384]

In addition to the role it has played in opening up Brazil's offshore oil fields, private equity has proved significant in developing:

- The onshore Uquo field in the Niger Delta (through an investment by the Canadian Investment Fund for Africa in Gulf of Guinea Energy Limited);[385]
- The Jubilee Field in Ghana, described as "one of West Africa's largest discoveries of the last two decades"[386] (through Kosmos Oil, backed by Blackstone Group[387] and Warburg Pincus);[388]
- Three concessions being explored in Sudan (through the Citadel Capital-backed Nile Valley Petroleum Limited);[389] and
- The exploitation of the Cerro Dragon, Piedra Clavada and Koluel Kaike blocks in Argentina's Golfo San Jorge basin (through Cordiant Capital and IFC-backed Pan American).[390]

In the gas sector, Conduit Capital's Latin Power III fund has backed Kuntur Transportadora de Gas,[391] operator of a 1085-kilometre pipeline to bring gas from the Camisea gas fields located in the Cusco region of Peru to the cities of Cusco, Juliaca, Arequipa and Ilo Matarani.[392] The development of Camisea has been highly

controversial due to its adverse human rights impacts on local indigenous communities, as well as the destruction of hundreds of hectares of Amazon rainforest.[393] The US export credit agency, US Ex-Im Bank,[394] declined to finance the early stage of the project.

Coal mining (and indeed mining more generally) also features as a growing destination for investment. Until recently, private equity funds have tended to eschew the sector, fearing the illiquidity of mining investments and other risks. [395] However, as PricewaterhouseCoopers notes in its 2012 review of the mining industry, there are signs that private equity is sizing up the sector:

> ". . . anaemic public markets and bullish long term sentiment for resources has prompted select PE [private equity] funds and SWFs [Sovereign Wealth Funds] to pause and reconsider. Post crisis, we have observed some of the world's leading PEs and SWFs attempting to 'figure out how to make mining investments work'."[396]

The Corner House's review of funds found 12 with investments in coal mines (*see* Annex 4: Investments by Sector). They include:

- AMCI Capital Fund's investment China Coal Energy Company Limited (CCECL), the second largest coal company in China and the fifth largest public coal company in the world in terms of coal reserves;[397]
- ICICI Venture's investment in Sainik Mining and Allied Services Limited (SMASL), "one of the largest contract mining and logistics players operating in the Northern and Eastern coal belts of India", [398] which "has entered into Joint Ventures with State Mining Corporations for joint development and operation of coal mines with geological reserves in excess of 500 million tonnes in the states of Madhya Pradesh and Orissa";[399]
- Ecofin China Power and Infrastructure Fund's investment in China Shenhua Energy,[400] a Chinese private coal company, which has the largest coal reserves in China and is the country's largest coal supplier;[401]
- Samara Capital Partners investment in Global Coal & Mining;[402]

- Saratogo Capital's investment in Adaro Energy,[403] operator of Indonesia's largest coal mine;[404]
- China Investment Corporation's investment in SouthGobi Resources, which owns four coal projects in Mongolia: the Ovoot Tolgoi Mine, which is already producing coal; and three development projects, the Soumber Deposit, Zag Suuj Deposit and the Ovoot Tolgoi Underground Deposit;[405]
- BlackRock and First Reserve's $67 million investment, alongside commodity dealer Glencore,[406] in Umcebo Mining, a South African coal mining business.[407] Ucembo has three thermal coal mines – Middelkraal, Kleinfontein and Klippan – with a fourth, the Wonderfontein mine, scheduled to begin production in 2013;[408] and
- Beijing-based Origo Partners' reported joint venture with Trafigura, the Dutch commodity trader, to exploit coal and iron in Mongolia.[409] Origo is a listed private equity investment company.[410] Its investments in Mongolia are focused on "coking coal, copper, gold, iron ore and related infrastructure opportunities".[411]

Environmental and social impacts

Infrastructure projects are promoted as necessary for development and the advancement of the common good. Many may be. Yet all infrastructure projects – whether state-financed or private sector-financed – have social and environmental repercussions. Who gains and who loses from infrastructure development depends critically on the distribution of political and economic power within society. Land must be obtained to build upon, effluents may have to be discharged and critics contained – but it is rarely the wealthiest neighbourhoods that have their land appropriated or that suffer from the pollution and human rights abuses that often accompany imposed infrastructure developments, but it is often the wealthier who benefit.

Globally, more than half the infrastructure transactions between 2005 and 2008 involved energy, petrochemicals and power deals,[412] whose environmental and social impacts can be severe. Yet little private sector finance is conditioned on meeting international environmental or social standards – in sharp contrast to official development assistance. Moreover, Northern governments have largely turned a blind eye to the role of private sector investors from

industrialised countries in rolling back or undermining development standards. Instead, discussion tends to focus on China, the supposed "New Kid on the Block",[413] which more often than not gets singled out (erroneously) as both the cause and the beneficiary of declining standards.[414]

Unsurprisingly, infrastructure development backed by private equity funds is often a potent source of social and economic conflict. In Chile, plans to build a string of small dams with private equity finance from EcoFin, Eton Park Capital Management and Tudor Capital have sparked strong local opposition.[415] In India, Suzlon, which has grown through private equity investment from funds such as Chrys Capital[416] to become the country's largest wind energy company and the fifth largest in the world, has been accused of "cheating tribal people off their land in order to set up wind farms in India" and "harvest[ing] profits from green energy and carbon offsets"[417] – a charge the company denies. Local opposition, again in India, has dogged FE Clean Energy-backed Bhilwara Energy Ltd (BEL)'s[418] plans to develop a portfolio of several medium-to-large scale hydropower assets,[419] whilst 3,000 farmers recently protested against what they say is the illegal expropriation of their land for projects proposed by Adani Pench Power Limited,[420] a subsidiary of 3i-backed Adani Power.[421] In Nigeria, the construction of Lekki Expressway, backed by African Infrastructure Investment Managers' African Infrastructure Investment Fund,[422] met with protests from local people fearful that fencing off the highway would separate communities that have been historically and socially connected.[423]

Responding to infrastructure-as-asset-class: Are safeguards enough?

One response of campaigners to the emergence of private equity infrastructure funds has been to treat private sector infrastructure investment as essentially the same as publicly-financed projects and to press private equity investors to adopt public-sector international standards, as required, for example, by the World Bank. Another has been to view the private sector as benign in its intentions but misguided as to where it is placing its money. (In a version of this approach, Oxfam UK has gone as far as setting up its own private equity fund to demonstrate how private equity could be used for good.)[424] On this view, the strategy is to "reprogramme" the private sector in order to shift its undoubted financial resources from harmful sectors (particularly those that, for example, fuel climate change) to environmentally-sustainable sectors, such as wind and solar. A further response has been to highlight the adverse development impacts of

private equity funds routing their investments via tax havens, resulting in the host country where the infrastructure is built losing tax revenue[425] – revenue that could be invested in projects that directly benefit poorer people – and potentially facilitating corruption. And research has been undertaken to document private equity investments in companies allegedly associated with corruption.[426]

All these responses have opened up a public debate on private equity funds and have the potential for improving the quality of private equity-funded investment. Certainly, there is considerable scope for enhancing private equity standards – most funds currently have no environmental or social standards at all. (Upbeat industry press releases on the number of potential private equity investors – one-third in a recent survey – who have refused to place their money with funds whose General Partners are seen to lack understanding of environmental and social issues simply underline the extent to which the vast majority of investors – the other two-thirds – have no such qualms.)[427] And insisting that those private equity funds that enjoy DFI support should be required to adhere to the environmental and social standards that DFIs apply to their non-intermediated finance is an obvious, and much-needed, campaign demand. Significant gains have already been made as a result of pressure in this area, with the Asian Development Bank and the US Overseas Private Investment Corporation requiring (as from 2010) that intermediaries comply with their safeguard policies.[428] Advocacy work on tax havens has also resulted in Norway introducing restrictions on where Norwegian-backed private equity funds can operate.[429]

Such campaigns are to be applauded. But even if their demands were met in their entirety, they would still leave unchallenged a range of adverse social and economic impacts – from social exclusion to the systemic risks of the extensive use of speculative derivatives – that are intrinsic to the alpha-seeking forms of finance that have transformed infrastructure into an asset class. These impacts argue for a much broader advocacy perspective.

Hard-wired for exclusion

Private sector developers do not invest in projects in order to provide public goods. They do so primarily in order to extend their local and global reach, increase their share

of markets, and, above all, if they are to retain investors, to boost returns to their shareholders. This has a number of consequences that make private sector infrastructure development in general – and its turbo-charged private equity variant in particular – inimical to positive economic and social justice outcomes.

One is that privately financed and managed infrastructure is hardwired for social and economic exclusion. Only those who can afford to pay get to enjoy its benefits. Within the energy sector, for example, the liberalisation of retail power supplies has excluded poorer consumers from access to energy simply because they are unable to pay for it (in economists' jargon, they have been "rationed out of the market").[430] According to several studies, electricity prices in the UK are estimated to be some 10-20 per cent higher than they would have been without privatisation.[431] Similar conclusions have been reached in other European countries,[432] the USA and in other OECD countries.[433]

The quest for turbo charged profits by private equity funds can only exacerbate this trend. The history of Globeleq, a power generation company in which Actis, a private equity fund backed by the UK government's CDC Group, is invested serves as a warning. Since 2002, Globeleq has bought out a number of energy companies, sharply increasing the tariffs charged to consumers.[434] Following Globaleq's 2005 investment in Umeme, a Ugandan power distributor,[435] the company is reported to have increased prices by 24 per cent and then again by 37 per cent, leading to a court challenge by the Uganda Electricity Users Association (UEUA).[436] Many poorer Ugandans have been forced to take electricity themselves from the grid because of the high prices; Umeme's manager is reported to have called for their execution.[437] In Tanzania, Globeleq's portfolio company, Songas, is similarly accused of demanding "indefensible" hikes in the prices it charges for gas transportation.[438] For East Africa as a whole, Public Services International Research Unit (PSIRU), which monitors privatisation worldwide, found "repeated evidence of overcharging" by private power plants run by multinational companies.[439] In Asia, the experience is similar.[440]

Disenfranchising the public

A second feature of privately financed infrastructure is that it is profoundly anti-democratic. Key decisions relating to infrastructure investment become the prerogative

of private investors and companies, rather than being decided through public debate and consensus building. Moreover, with state and commercial interests now so intimately co-mingled, the role of the state in securing the public interest has become increasingly eroded. Public participation in decisions relating to energy generation, for example, is narrowed down to the limited decisions that people can make as consumers, notably their "freedom" to switch energy supplier. But market choices are no substitute for active debate and negotiation over how best to secure the right of all to the energy they need to survive. When everyone, not just those who pay electricity bills, is involved, the outcomes are invariably very different from those planned for them by financiers, corporate managers or state bureaucracies.

The financialisation of infrastructure further disenfranchises the public by giving still greater power over decision-making to a small elite of investors. Unsurprisingly, the infrastructure favoured is that which maximises their profits. Indonesia's second largest thermal coal producer, Adaro Energy, for example, is explicit that its plans to build the country's largest coal-fired power station are intended to "create a significant base demand"[441] for its coal. In effect, the company is using infrastructure to lock society into an energy path that serves its corporate agenda, despite the devastating implications for climate change.

Firms like India's Reliance Infrastructure may cast their business in terms of promoting the collective good ("We stand at the threshold of a new world, a world where dreams are realized and lives are positively impacted. In this world, roads will lead us to our collective destinies, energy will brighten a million lives and engineering will change the way things are made. We are Reliance Infrastructure and we are making this new world happen.")[442] but the net effect of thousands of decisions by such firms is to ensure that the most striking feature of current private sector infrastructure development worldwide is that it is directed exclusively (and entirely predictably) at meeting the needs of the private sector. These include: demand creation, unlocking cheap raw materials and cheap labour, reinforcing commodification, building catchment areas for the collection of fees, providing an investment outlet for surplus cash and a new base for accumulation.

Entirely absent from the portfolios of all but a few philanthropically-financed infrastructure funds are projects that respond to the demands of poorer people. There is investment, for example in privatised water utilities servicing those with the money to buy water, but no investment in rainwater harvesting that, once installed, provides water for free; in toll motorways connecting major industrial centres to ports through which goods can be exported abroad (and which labourers and small businesses cannot afford to use), but not in all-weather minor roads that link producers to local markets; in gated residential housing for affluent consumers, but not in affordable housing for poorer people or proper sanitation for slum dwellers. If poorer people feature at all in the discussions of investors and developers, it is almost exclusively as labourers – or as obstacles to be removed.

As investment in infrastructure becomes increasing guided not by what is deemed through political debate and negotiation to constitute the public interest but by the opportunities for corporate rent seeking, the geography of society itself becomes financialised. As Tessa Hebb, Director of the Carleton Centre for Community Innovation in Canada, and Rajiv Sharma of the University of Oxford remark of the impact of private equity investment in urban renewal in the US:

> ". . . financialization is remaking space as urban landscape is now assessed on financial criteria . . . Investment selection is no longer driven by opportunities that yield the greatest public good, but rather by those that provide the greatest private benefit. The result is a further financialization of urban space. In a self-perpetuating cycle, locations with attributes and natural endowments that generate the least risk are targeted for investment, while severely blighted areas are left behind."[443]

Fickle Finance

Even if the interests of the private sector developers could be brought into alignment with those of the general public, the demands of investors for above-market profits makes private equity a poor source of funding for essential infrastructure. One reason is that it is too fickle. To avert catastrophic climate change, for example, sustained, predictable and ensured streams of finance are needed to fund the transition away from fossil fuels. But private equity investors remain invested only so long as their investment achieves or exceeds its benchmark growth rates. Clean Tech funds, which

until recently accounted for some 10 per cent of private equity energy investment and had been enjoying a boom, began to falter in 2009,[444] with investment in the sector declining by 30 per cent in the third quarter of 2010.[445] Many predict that the bubble will soon burst – at which point, the financing will dry up as investors move to other more profitable sectors.

The logic of financialisation acts still further against secure, long-term funding for a transition away from fossil fuels by necessitating the use of ever riskier financial instruments to leverage capital, enhance profits and off-load risk onto others.[446] When things go wrong, state-funded programmes that could assist a transition have repeatedly been cut to pay for taxpayer bailouts. The "nationalisations" of UK retail banks in 2008 and the austerity measures being imposed across the eurozone are only the latest examples. In Spain, a government-subsidised feed-in tariff scheme for solar photovoltaic panels was slashed as part of the cuts imposed by the financial crisis.[447]

"Impatient finance" and the quest for shareholder value

In 2003, critical US economist James Crotty coined the phrase "impatient finance" to capture the short-termism of much financialised investment.[448] Private equity is a prime example of such impatient finance, and its entry into infrastructure will have profound impacts on how firms are managed.

Private equity funds do not just bring finance to a company; they also bring a culture and a set of financial priorities that are centred on enhancing short-term shareholder value. Investee companies become "a bundle of assets to be deployed or redeployed depending on the short-run rates of returns that can be earned."[449] Even after the funds have disinvested, this culture tends to remain, not least because attracting and retaining future investment depends on showing healthy returns to shareholders.

As infrastructure becomes more firmly entrenched as an asset class, one consequence is thus likely be a progressive financialisation of companies throughout the entire supply chain – from the companies that build infrastructure to those that service them. The means through which future shareholder value will be boosted and extracted remains to be seen. (As Adam Leaver of Manchester University perceptively notes: "Whilst

capitalism has always created new divides and inequalities, its mobility and resourcefulness means it does not stay the same long enough for us to generalize its habits or predict its outcomes.")[450] But, if past history is a guide, layoffs, casualisation of labour, share buybacks and the increasing use of speculative financial instruments, and are likely to feature prominently, along with intensified efforts to new derivative-based markets (for example, in carbon and ecosystem services) through which new rents can be sought from infrastructure projects.

The experience of the energy sector (in which, to recall, the private equity infrastructure funds are heavily invested) is again illustrative. To keep a company's share price up and enhance quarterly dividends to shareholders, management has diverted capital away from research and development, the deployment of new technologies, maintenance and the building of new plants, channelling it instead to other avenues so as to boost "shareholder value". One means of doing so has been for companies to repurchase their own shares, which keeps up the price. From 2000 to 2009, for instance, oil giant Exxon Mobil spent some $163.7 billion buying back its own shares, "even as there is a need for large-scale investments in energy alternatives".[451] [452] In 2005, the six largest international oil companies reportedly invested $54 billion in production, but paid out $71 billion to shareholders in the form of share buy-backs and dividends,[453] also benefiting senior management who made vast personal fortunes when they cashed in stock options at artificially inflated prices.[454] [455] Pressure to maintain this shareholder value can translate into "cost cutting" if revenues are not high: paring down operating costs and slashing jobs. Shell announced some 5,000 job cuts in 2009 while shareholders still received their quarterly dividends.[456] Large utility companies have done likewise, losing irreplaceable skills and experience in the process. Safety at refining and generating plants can be put at risk. Most disruptions in oil supplies, for instance, are the result of refinery accidents or pipeline problems, such as those of BP in the US.

Boosting quarterly returns to shareholders has also led to investors and oil, gas and utility companies deriving an increasing proportion of their profits from speculative trading in derivatives – futures, swaps, options and other contracts on the future sale of oil and power supply – rather than actual sales of oil, gas and electricity. Many oil and

gas and utility companies do not account separately for the profits they derive from trading in derivatives,[457] but some figures can be garnered from occasional filings to the US Securities and Exchange Commission and other regulatory bodies. In 2005, for example, oil multinational BP disclosed that it earned $2.97 billion from overall derivatives trading, with $1.55 billion coming from the oil market and $1.31 billion from bets on natural gas,[458] suggesting that speculative energy trading accounted for one-fifth of the company's declared profits.[459][460]

Market manipulation and outright criminality are frequent features of the increased use of financial markets to ramp up profits. The most notorious example is Enron, the US energy multinational that went spectacularly bust in December 2001 after its bets went sour and billions of dollars of losses came to light. The European Commission believes that such speculation has led to higher energy prices, costing the consumer billions of dollars.[461] Enron and other energy traders also got power plants to shut down their power generation in order to push prices up, causing a wave of power cuts that affected Californians in 2000.[462]

More than bricks and mortar

But perhaps most fundamental of all, private equity infrastructure finance is about more than building bricks and mortar. It is part of a wider construction project, as yet far from complete, whose purpose is to enshrine markets, rather than democratically-accountable decision-making processes, as the means through which infrastructure is not only financed but its disposition decided. US investment bank Goldman Sachs, one of the original architects of infrastructure funds and whose alumni now hold key positions in many of the world's most powerful policy-making institutions, is explicit about the agenda. In a policy paper modestly entitled *Building the World*, it identifies "adaptation of . . . regulatory systems" and a "move towards market pricing" as major priorities if the private sector is to be encouraged to participate in infrastructure development.[463] In particular:

> “Governments will need to lead a shift in the public perception of infrastructure as free or nearly-free ‘public goods’. Subsidized electricity and water for farmers, and cheap urban water and waste systems, should come under review.”[464]

Critically, private sector financing of infrastructure is seen not simply as a passive beneficiary of “reform” but as a driver of both financial innovation and the building of capital markets,[465] stimulating the dismantling of “current onerous restrictions on investments”, the liberation of pension and insurance funds, the growth of derivative-based products, the development of bond markets and the opening up of developing country economies to foreign banks.[466] Others make the same point for infrastructure constructing not just gas pipelines and water treatment plants but also energy and water markets. The message (to adapt the ghostly voice in the film *Field of Dreams*) is clear: “If you build, it will come”.[467]

Keep the subsidies rolling . . .

But the core of Goldman Sachs’ proposals for *Building the World*, shared by private equity infrastructure fund investors and promoters alike but left unchallenged by campaigns that focus on improvements to safeguards, is the role it envisages for the state. On the one hand, it demands that “governmental interference” be kept “at a minimum”, whilst, on the other, it envisages its entire political project being underwritten by the continuation (and extension) of a raft of state subsidies in the form of “public/private partnerships, government credit guarantees, and coinvestment by governments”,[468] not to speak of the use of sovereign wealth funds, tax holidays and forgone tax revenues of projects domiciled in tax havens.

The task for the private sector thus becomes one of persuading “decision makers” that it is in the public interest for the state to continue facilitating a massive transfer of wealth from the public to the private sector, to construct capital markets that will permit the further accumulation of private wealth and to socialise any losses that subsequently occur. (For those unskilled in the arts of public persuasion, Goldman Sachs, ever ahead of the game, advises that its proprietary polling has helped “establish a framework for approaching the public” when arguing the merits of the private sector running public

infrastructure: "Describe [acquisitions] as a 'Partnership' or 'Lease', not a 'Sale' or 'Privatization.'")[469]

. . . whilst the public picks up the tab

Subsidies for private sector infrastructure developers (and their private equity backers) have already cost the public billions of dollars.[470] The record of Public Private Partnerships (a major destination of private equity fund investment) is illustrative. Under PPPs, the private sector builds, finances and manages a project in return for the government guaranteeing a revenue stream from the project's users (in the case of a toll road, for instance, the government undertakes to pay should usage fall below a minimum number of cars per day) and giving other contractual undertakings. The effect is to conceal public debt by placing it off balance sheet, [471] creating what Dexter Whitfield, Director of the European Services Strategy Unit, describes as a "build now, pay later" scheme that is "no different from the credit card consumerism boom that contributed to the global financial crisis." [472] In a sleight of hand worthy of Harry Houdini, the impression is created "of infrastructure being privately financed when, in fact, it is ultimately entirely financed by taxpayer and/or service users". [473]

The cost to the public has been huge. And, in the long run, such projects often turn out to be much more expensive for the public sector than if it had shouldered the burden on its own in the first place. The *Financial Times* calculates that Britain's Public Finance Initiative (PFI) (the UK's PPP programme) is costing the taxpayer "well over £20bn in 'extra' borrowing costs – the equivalent of more than 40 sizeable new hospitals – for the 700 projects that successive governments have acquired under the [initiative]".[474] Tax revenue is also being lost through the use of off-shore arrangements by PFI investors.[475] And, whilst the profits accrue to the private sector, the public pays the losses, prompting a recent UK parliamentary committee to recommend that existing PFI schemes be nationalised.[476] Similar conclusions have been drawn for PPPs in developing countries – the cost of which can be significantly higher than under pure public provision.[477] With claims that the private sector is more "efficient" than the public sector eroded by the banking crisis and by the failure of many private providers to fulfil their contracts (for example, G4S, the firm that was awarded the security

contract at the London Olympics but which failed to provide sufficient staff, necessitating drafting in the military),[478] *Infrastructure Investor* warns that the industry is potentially facing a "villagers-at-the-gate" moment:

> ". . . people will be asking why the government is not only proposing to outsource more infrastructure to the private sector, but going further and offering guarantees in order for the private sector to come to the table."[479]

Nonetheless, the existing subsidies keep flowing – and more are devised to keep the PPP market afloat. In 2010, with commercial bank lending for new PPP projects drying up as banks attempted to rebuild their balance sheets in the wake of the financial crisis, the European Investment Bank (EIB) stepped in and lent a record €3.5 billion to public-private partnerships to keep the European PPP market going.[480] Still more is envisaged through a EIB- and European Commission-sponsored scheme to give government backing to securitised income flows from PPP projects, thus enhancing the credit rating of associated infrastructure project bonds, making it easier to find investors.[481]

The dismal record of PPP programmes is evident also in developing countries, where projects have frequently failed to deliver promised services whilst hiking prices for health care, transport, energy and water beyond what poorer people can pay. Despite this, the World Bank and other MDBs are pushing for a new wave of PPPs in developing countries – and many governments are obliging, with The Philippines, India, Mexico, Brazil and others all recently announcing new programmes. Indeed, the deepening and extension of PPP programmes is a major reason why many investors (ever alert to public subsidies that be captured for private profit) are investing in private equity infrastructure funds and other means of tapping the giant public ATM that PPP-backed infrastructure development has created.

Some organizing questions

As trade unionists Peter Rossman and Gerard Greenwood comment:

> "Financialization is not a spontaneous, anonymous process arising from technological change or global information flows. It is a political project involving the active intervention of national governments."[482]

The same may be said of the construction of infrastructure-as-asset-class. Like other forms of financialisation, it has involved the active involvement of national governments and international agencies to create a new investment space that is able (at least in the short-term) to absorb some of the excess capital that is currently swilling around the globe in search of profitable investments, but only at the expense of the wider public good. The challenge facing activists is whether to respond to this development in its historical context – as one response to the growing crisis of accumulation in capital, with all that this entails in terms of exclusion, speculation and systemic instability – or as a misplaced policy initiative that can be improved through engagement with its architects.

If the answer is "in its historical context", then the response will surely demand thinking and activism that goes beyond simplistic calls to "reclaim markets" or to "bring back the state", although both these strategies undoubtedly have a major role to play in developing a just response to the crisis of overaccumulation. As political commentator and activist Mahmood Mamdani observes:

> "When I was a graduate student, my economics professor asked me to read a great postwar classic, Karl Polanyi's *The Great Transformation*. Polanyi was the first to point out that self-regulating markets are bound to lead to a social catastrophe. Polanyi began with the observation that the market is much older than capitalism. It has been around for thousands of years. Markets have coexisted with different kinds of economies and societies: capitalist, feudal, slave-owning, communal, all of them. The distinguishing feature of all previous eras has been that societies have always regulated markets, set limits on their operation, and thus set limits on both private accumulation and widespread impoverishment. Only with capitalism has the market wrenched itself free of society. A consequence of this development has been gross enrichment of a few alongside mass poverty. A corollary of this process, we may say, is that regulation is now seen as the task of the state, and not of society.
>
> That solution is rapidly turning into a problem. Not only has the market wrenched itself free from society, the state is trying to do the same. Not only do market forces threaten to colonize society, the state too threatens to devour society. Free markets are not a solution for poverty; they are one cause of modern poverty. State sovereignty is not a guarantor of freedom; it threatens to undermine social freedom. The challenge is not how the state can regulate the market, but how society can regulate both the state and the market."[483]

Placing private sector infrastructure development (and in particularly that financed via private equity funds) into this broader context raises numerous questions that may prove more fruitful as

starting points around which critical opposition might organise (where they are not already doing so) than a limited (though entirely necessary) focus on project impacts or safeguard policies. A partial list of such questions might include:

- Whose infrastructure should be developed? And how should this be decided?
- If the public sector is to guarantee the private sector, which private sector should be supported? Multinationals? Major domestic conglomerates? Small and medium-sized enterprises? Community based co-operatives?
- What are the structural risks posed to the global financial system by the new forms of finance being devised by the infrastructure industry to fund private sector infrastructure development?
- If public debts are to be incurred for infrastructure development, how should their repayment be apportioned within society? Should poorer pay through higher service charges? Or should richer sections of society contribute more through taxes?
- Are comprehensive public services possible where governments opt for low tax/ low public investment economic regimes?
- What forms of infrastructure delivery best serve the public interest? And how might consensus on what constitutes "the public interest" best be reached?
- What decision-making processes need to be constructed to ensure that infrastructure programmes reflect real public needs? If the state is to take a greater role in delivery infrastructure services, what institutional forms ensure greatest accountability?
- What experience can be gained from the many initiatives already undertaken by citizens to reclaim municipal and other services from the private sector?
- What are alternative forms of financing for desirable infrastructure? For example, if communities determine that renewable energy is needed, how do we develop stable, sustainable financing alternatives to constantly shifting and mercurial private sector financing markets?

- How might the current state-private combo be reassembled to better serve the public interest?

Asking such questions – and others that inevitably flow when they are raised – may not deliver ready-made campaigns. Translating them into strategic interventions demands the hard work of organising. But sidelining them can deliver only one result: business as usual.

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1 Rossman, P. and Greenfield, G., “Financialization: New Routes to Profit, New Challenges for Trade Unions”, *Labour Education*, 1/2006, No. 142, http://www.iufdocuments.org/www/documents/Financialization-e.pdf

2 For further examples and discussion, see:

Houck, O., “Damage Control: A field guide to important euphemisms in environmental law”, *Tulane Environmental Law Journal* 15, 2001, p.129, http://heinonlinebackup.com/hol-cgi-bin/get_pdf.cgi?handle=hein.journals/tulev15§ion=10

3 World Bank, *World Development Report: infrastructure for development*, 1994, http://www-wds.worldbank.org/external/default/WDSContentServer/IW3P/IB/2007/10/10/000011823_20071010172019/Rendered/PDF/13483.pdf

4 World Bank, *World Development Report: infrastructure for development*, 1994, http://econ.worldbank.org/external/default/main?pagePK=64165259&theSitePK=469382&piPK=64165421&menuPK=64166322&entityID=000011823_20071010172019

5 My thanks to Larry Lohmann for this phrase, which perfectly captures the contingent relationship between the state and private sectors.

6 "Stockton attacks Thatcher policies", *The Times*, 9 November 1985.

Harold Macmillan, later ennobled as Lord Stockton, told the Tory Reform Group: “The sale of assets is common with individuals and states when they run into financial difficulties. First, all the Georgian silver goes, and then all that nice furniture that used to be in the saloon. Then the Canalettos go.”

7 MDB Working Group on Infrastructure, Infrastructure Action Plan: Submission to the G20, October 2011, http://www.analisisinternacional.eu/archivo/nuevos/doc291.pdf

World Bank Group, “Transformation through Infrastructure”, World Bank Group Infrastructure Strategy Update, FY12-15, November 2011, http://siteresources.worldbank.org/INTSDNET/Images/5944693-1241627660763/Infrastructure_Concept_Note.pdf

See also:

Khan, K. M., “Mobilising Private Capital for Infrastructure Development: World Bank Infrastructure Finance Center of Excellence in Singapore”, 20 October 2011, http://www.afdc.org.cn/afdc/UploadFile/2011102552911073.pdf

L. J. Y and Doemeland, D., “Beyond Keynsiansim: Global Infrastructure Investments in Times of Crisis”, *Policy Research Paper* 5940, World Bank, January 2012, http://www-wds.worldbank.org/external/default/WDSContentServer/IW3P/IB/2012/01/10/000158349_20120110085008/Rendered/PDF/WPS5940.pdf

8 Group of 20, “High Level Panel on Infrastructure – Recommendations to the G-20”, Final Report, 26 October 2011, http://www.g20-g8.com/g8-g20/root/bank_objects/HLP_-_Full_report.pdf

Group of Twenty, "Final Communiqué", G-20 Leaders Statement, 19 June 2012, http://www.g20.org/images/stories/docs/g20/conclu/G20_Leaders_Declaration_2012.pdf

The Group of 20 (G-20) is an international grouping that brings together the leaders of the world's "major advanced and emerging economies".

Its High Level Panel (HLP) on Infrastructure was set up by the G-20 at its 2010 Summit in Seoul.

The main focus of the HLP report is on "increasing investment flows from the private sector (including Sovereign Wealth Funds)".

9 World Bank, "Global Monitoring Report: The MDGs after the Crisis", Washington, DC, 2010, http://siteresources.worldbank.org/INTGLOMONREP2010/Resources/6911301-1271698910928/GMR2010WEB.pdf

10 Bosshard, P., "Infrastructure for Whom? A critique of the Infrastructure Strategies of the Group of 20 and the World Bank", International Rivers, May 2012, http://www.internationalrivers.org/files/attached-files/infrastructure_for_whom_report.pdf

11 For an extended discussion, see:

Energy Security for Whom? For What? The Corner House, February 2012, http://www.thecornerhouse.org.uk/sites/thecornerhouse.org.uk/files/Energy%20Security%20For%20Whom%20For%20What.pdf

12 Definitions of "infrastructure" vary. Some include oil, gas and mining projects, others do not. Projects that most commonly feature include: (1) ports and logistics; (2) highways; (3) airports; (4) electricity generation, including renewable energy; (5) electricity T&D, including smart-grid related; (6) urban mass transit; (7) water treatment; (8) waste-water treatment; (9) rail; and (10) digital infrastructure, narrowly defined from the infrastructure perspective.

See:

World Economic Forum, "Positive Infrastructure: A framework for revitalizing the global economy", 2010, available from http://www.kpmg.com/Global/en/IssuesAndInsights/ArticlesPublications/Documents/Positive-infrastructure-report.pdf

13 See, for example:

Whitfield, D., *Global Auction of Public Assets: Public sector alternatives to the infrastructure market and Public Private Partnerships*, Spokesman, 2010.

14 The OECD describes itself as a club of like-minded countries that are committed to the market economy and are the world's major industrialised countries. China, Brazil, Russia, South Africa and India are not members. The figures are not directly comparable, since those for China include natural resource extraction, whilst that for the OECD does not, and the figure for private investment includes oil and gas projects but not mining.

15 Inderst, G., "Pension Fund Investment in Infrastructure", *OECD Working Papers on Insurance and Private Pensions*, No. 32, OECD, 2009, http://www.oecd.org/dataoecd/41/9/42052208.pdf.

Inderst notes: "Through to 2030, according to the OECD, the annual infrastructure requirements for electricity transmission and distribution, road and rail transport, telecommunication and water is likely to average 3.5 per cent of world GDP, i.e. about US$ 2tr pa. This amounts to a sum of over US$ 50tr until 2030. The figures get even higher if other infrastructure sectors are added."

16 Inderst, G., "Pension Fund Investment in Infrastructure", OECD Working Papers on Insurance and Private Pensions, No. 32, OECD, 2009, http://www.oecd.org/dataoecd/41/9/42052208.pdf.

Inderst notes: "The infrastructure needs are especially high in developing countries. The Economist magazine reports that ―over half of the world's infrastructure investment is now

taking place in emerging economies. The US$ 1.2tr pa spent is equivalent of 6% of their combined GDPs".

17 Miller, M, "Trillion Dollar Baby", *The Deal*, 18 June 2010, http://www.thedeal.com/magazine/ID/034781/featuresold/cover-stories/trillion-dollar-baby.php

18 McLeod, B, "Bridging Asia's Infrastructure Bottleneck", Asian Venture Capital Journal, 30 March 2010, http://www.avcj.com/avcj/analysis/1599047/bridging-asia-s-infrastructure-bottleneck.

19 Goldman Sachs estimates that public funds provide 75-80 per cent of the financing for infrastructure in developing countries. This figure includes both government funds and official development assistance. Goldman Sachs does not break down the relative percentages.

See:

Lawson, S. and Dragusanu, R., *Building the World: Mapping Infrastructure* Demand, Global Economics Paper No: 166, Goldman Sachs, 2008, p.14, http://www2.goldmansachs.com/our-thinking/brics/brics-reports-pdfs/infrastructure-building-the-world.pdf

20 In sub-Saharan Africa, infrastructure development is often assumed to rely almost entirely on external multi-lateral and bilateral aid. But a recent report by Agence Francaise de Developpement and the World Bank estimates that two thirds of the continent-wide annual spending for infrastructure – some $45 billion in total – between 2001-06 was financed by African taxpayers and infrastructure users. Only $15 billion came from outside sources, including China. China itself has largely funded its own infrastructure development from its massive trade surpluses.

For Africa as a whole, UNCTAD found that the state provided 51.9 per cent of total infrastructure commitments between 1996-2006.

By contrast, in Brazil, the majority of investments in Brazil's infrastructure have increasingly come from the private sector. In the area of transport, over 75 per cent of investment in recent years has been from the private sector.

See:

Foster, V. and Briceno-Garmendia, C., (eds), *Africa's Infrastructure: A Time for Transformation*, Agence Francaise de Developpement /World Bank, 2010, p.8, http://www.infrastructureafrica.org/aicd/system/files/AIATT_Consolidated_smaller.pdf.

UNCTAD, *World Investment Report: Transnational Corporations and the Infrastructure Challenge*, "Fig 111.1 – Share of foreign and domestic private and public investors in the investment commitments of the infrastructure industries of developing and transition economies, by industry and region 1996-2006 (per cent)", p.101, http://www.unctad.org/en/docs/wir2008_en.pdf.

"BTG Pactual to launch Brazilian Infrastructure Fund", *Business Monitor International*, 14 December 2009, http://store.businessmonitor.com/article/312802

21 Private investment in infrastructure rose in the 1990s from $18 billion in 1990 to a peak of $114 billion in 1997. It then declined sharply following the 1997 financial crisis in Asia and subsequent regional economic recession, dipping to $93 billion in 2003. Subsequently it recovered to reach $114 billion in 2006 and $160 billion in 2007, before declining again in the wake of the 2007 banking crisis.

For overviews:

Department for International Development, "Desk Review of DfID's Private Sector Infrastructure Facilities", WSP International Management Consulting Evaluations Team, March 2008, paras 1.9-1.10, accessed 29 August 2010, http://www.dfid.gov.uk/Documents/publications1/evaluation/ev684.pdf

IFC, "Issue Brief: IFC Infrastructure Crisis Facility", December 2008, accessed 29 August 2010, http://www.ifc.org/ifcext/about.nsf/AttachmentsByTitle/IssueBrief_ICF/$FILE/IssueBrief_ICF.pdf

Orr, R.J. and Kennedy, J. R., "Highlights of recent trends in global infrastructure: new players and revised game rules", *Transnational Corporations*, Vol. 17, No. 1 (April 2008), http://www.stanford.edu/group/CRGP/publications/articles_presentations/Orr_Kennedy_proof.pdf

22 Figure in 2008 dollars, calculated from World Bank Private Participation in Infrastructure Database. The PPI Database covers investments in infrastructure projects only, not investments in infrastructure service companies or other infrastructure-related business. Projects are considered to have private participation "if a private company or investor bears a share of the project's operating risk". The figures therefore include projects that have an element of public participation, although the extent of such public involvement is not given. The figures from the Database should therefore be taken only as a guide to the actual volume of pure private investment. The main investments covered in the Database are: management and lease contracts, concessions, Greenfield projects and privatisations.

See:

World Bank, Private Participation in Infrastructure Projects Database, "Methodology", http://ppi.worldbank.org/resources/ppi_methodology.aspx

World Bank, Private Participation in Infrastructure Projects Database, "PPI in developing countries: Easy-to-use graphics on the 2008 Global Update of the PPI Project Database", "Slide 5, Investment commitments to infrastructure projects with private participation in developing countries in real and nominal terms, 1990-2008", accessed 17 November 2010, http://ppi.worldbank.org/features/November2009/2008GlobalDataset.pptx.

World Bank, Private Participation in Infrastructure Projects Database, "PPI in developing countries: Easy-to-use graphics on the 2008 Global Update of the PPI Project Database", "Slide 7, "Investment commitments to infrastructure projects with private participation in developing countries, by type of investment 1990-2008", accessed 17 November 2010, http://ppi.worldbank.org/features/November2009/2008GlobalDataset.pptx.

23 This figure includes both lending for infrastructure and for natural resource and mineral extraction. If the latter is excluded, the lending for "physical" infrastructure (roads, power projects, ports and the like) amounted to an estimated $31.8 billion. The US Congressional Research Service notes, however, that such figures should be interpreted with caution since "some PRC loans or aid pledges may not have been fulfilled and some aid pledges that include multiple projects or that span several years may have been counted more than once". PRC foreign assistance and government-supported economic projects in Africa, Latin America and Southeast Asia grew from less than $1 billion in 2002 to $27.5 billion in 2006, dropping to $25 billion in 2007. China Exim Bank, the Chinese export credit agency, which also makes concessional loans, does not usually separate out its investments in Africa from its overall portfolio. However, as Deborah Brautigam of the American University's School of International Service in Washinton DC reports: "In 2007, a China Exim Bank official announced that it had authorized RMB 92.5 billion ($12.3 billion) in export credits and other loans to Africa between 1995 and 2006, for more than 259 projects (not all of this has been disbursed)." Southern Africa accounted for more than half of the portfolio.

See:

Lum, T, Fischer, H., Gomez-Granger, J, Leland, A., "China's Foreign Aid Activities in Africa, Latin America and Southeast Asia", Congressional Research Service, 2009, p.8, Table 5, 'Reported PRC Aid by Type and Region', http://www.fas.org/sgp/crs/row/R40361.pdf.

Brautigam, D., "Looking East: Africa's Newest Infrastructure Partners", 2009, accessed 29.8.10, http://www.emergingmarketsforum.org/papers/pdf/2009-EMF-Africa-Brautigam_Looking_East.pdf

Broadman, H. G, "Africa's Silk Road, China and India's New Economic Frontier", The World Bank, 2007, http://siteresources.worldbank.org/INTAFROFFCHIECO/Resources/Africas_Silk_Road_09_24_06.pdf

Bosshard, P., "China's Role in Financing Africa's Infrastructure", 2007, http://www.internationalrivers.org/resources/china%E2%80%99s-role-in-financing-african-infrastructure-3992

Brautigam, D., *The Dragon's Gift: The Real Story of China in Africa*, Oxford University Press, 2009.

24 The figure is for total disbursement to the following sectors: water supply and sanitation, transport and storage, energy, industry, mining, construction. If industry, mining and construction are excluded, the disbursements fall to $66.6 billion.

See:

OECD Development Assistance Committee Data Base, ODA by sector, http://stats.oecd.org/Index.aspx?DatasetCode=ODA_SECTOR

IFC, "Issue Brief: IFC Infrastructure Crisis Facility", December 2008, http://www.ifc.org/ifcext/about.nsf/AttachmentsByTitle/IssueBrief_ICF/$FILE/IssueBrief_ICF.pdf.

25 "Infrastructure Investor India Country Briefing 2011", *Infrastructure Investor*, May 2011, p.34, http://www.infrastructureinvestor.com/resources/Infrastructure/II%20INDIA%20WEB.pdf

26 RREEF Research, "Infrastructure goes Global", October 2008, p.6, available from http://www.irei.com/uploads/marketresearch/123/marketResearchFile/Infrastructure_Goes_Global10-08.pdf

27 UNCTAD, World Investment Report: Transnational Corporations and the Infrastructure Challenge, "Fig 111.1 – Share of foreign and domestic private and public investors in the investment commitments of the infrastructure industries of developing and transition economies, by industry and region 1996-2006 (per cent)", p.101, http://www.unctad.org/en/docs/wir2008_en.pdf.

28 UNCTAD, *World Investment Report: Transnational Corporations and the Infrastructure Challenge*, 2008, p.xx and p.144, http://www.unctad.org/en/docs/wir2008_en.pdf

29 As a 2008 report for the UK's Department for International Development notes: "PPI [Private Participation in Infrastructure] has been increasingly concentrated in the ten largest recipient countries which received 62 per cent of global PPI from 1990 to 2006. Investment in telecommunications has accounted for around 60 per cent of PPI over the recent past and the share of transport has increased to over 20 per cent". In 2008, private sector involvement in road projects was similarly concentrated in four countries: India, China, Brazil and Mexico.

See:

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World Bank, *The Infrastructure Challenge*, undated, para 15, http://siteresources.worldbank.org/IDA/Resources/IDA15Infra-SectionI.pdf.

World Bank, "Investment in road projects with private participation more than doubled between 2005 and 2008, but was concentrated in a few countries", Private Participation in Infrastructure

Database, October 2009,
http://ppi.worldbank.org/features/October2009/didyouknowOctober2009.aspx.

30 The World Bank's Private Participation in Infrastructure database gives investments of $21-23 billion for East Asia in 2007 (with the energy sector as the largest recipient); $12-13 billion for Africa (concentrated in Nigeria and South Africa); $40 billion for Latin America and the Caribbean (including greenfield 60 hydroelectric projects); $29-33 billion for South Asia; and $45 billion for the emerging economies of Europe and Central Asia.

See:

Private Participation in Infrastructure Database, "Private Participation in infrastructure in Sub-Saharan Africa in the last Decade", May 2010,
http://ppi.worldbank.org/features/June2010/Africa%20Update.pdf

Private Participation in Infrastructure Database, "Private Participation in infrastructure in East Asia and Pacific in the last Decade", May 2010,
http://ppi.worldbank.org/features/June2010/EAP%20Update.pdf

Private Participation in Infrastructure Database, "Private Participation in infrastructure in Latin America and the Caribbean in the last Decade", May 2010,
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Private Participation in Infrastructure Database, "Private Participation in infrastructure in South Asia in the last Decade", May 2010,
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Private Participation in Infrastructure Database, "Private Participation in infrastructure in Europe and Central Asia in the last Decade", May 2010,
http://ppi.worldbank.org/features/June2010/ECA%20Update.pdf

31 *Africa's Infrastructure: A Time for Change*,
http://www.infrastructureafrica.org/aicd/system/files/WB147_AIATT_Overview.pdf.

See also:

Foster, V., Butterfield, W., Chen, C., Pushak, N., "Building Bridges: China's Growing Role as Infrastructure Financier for Africa", *Trends and Policy Option 5*, Public-Private Infrastructure Advisory Facility, World Bank, 2008, p.x,
http://siteresources.worldbank.org/INTAFRICA/Resources/Building_Bridges_Master_Version_wo-Embg_with_cover.pdf

Foster, Butterfield, Chane and Pushak note for Africa as a whole: "Overall, infrastructure resources provided to Africa by the emerging financiers jumped from around US$1 billion per year in the early 2000s to around US$8 billion in 2006 and US$5 billion in 2007. These flows are now broadly comparable in magnitude to the ODA of OECD donors (amounting to US$5.3 billion in 2006) and to the resources emanating from private participation in infrastructure, or PPI (amounting to more than US$8 billion in 2006)."

32 Foster, V., "Africa Infrastructure Country Diagnostic: Overhauling the engine of growth – Infrastructure in Africa", 2008,
http://siteresources.worldbank.org/INTAFRICA/Resources/AICD_exec_summ_9-30-08a.pdf.

33 Private activity in water infrastructure more than doubled in the 2000s, but declined dramatically following the financial crisis. The majority of new projects during the decade were in sewerage treatment. The top recipients of private sector investment in water were China, Latin America and the Middle East and North Africa.

See:

Perard, E, "Private Sector Participation in water infrastructure: Review of the last 20 years and the way forward", Public Private Infrastructure Advisory Facility, 8 February 2012,

http://ppi.worldbank.org/features/Feb-2012/Review-of-PSP-in-water-infrastructure-over-the-last-20-years.pdf

34 Private Participation in Infrastructure Database, "Assessment of the impact of the crisis on new PPI projects – Update 6", May 2010, http://ppi.worldbank.org/features/April2010/Impact-of-the-financial-crisis-05-04-10.pdf

For a list of energy projects with private sector investment that reached closure in 2008, see:

World Bank, "Private activity in energy down, but still around peak levels", "Table 1 Energy projects with private participation reaching financial or contractual closure in 2008", p.7ff, 2009, http://ppi.worldbank.org/features/November2009/2008EnergyDataLaunch.pdf

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36 World Bank, Private Participation in Infrastructure Database, "Assessment of the impact of the crisis on new PPI projects – Update 6", May 2010, p.2, http://ppi.worldbank.org/features/April2010/Impact-of-the-financial-crisis-05-04-10.pdf

37 In 2009, total outward investment from China for all sectors amounted to $56.5 billion, of which some $15 billion was for infrastructure.

See:

"China's outbound investment benefits host countries", *Peoples' Daily*, 1 November 2010, available at http://china-wire.org/?p=6882.

Peng Ren, "Environmental Policies on China's Investments Overseas", Global Environmental Institute, Presentation at Book Launch, Washington DC, 8 June 2001.

38 The World Bank gives various figures for its infrastructure funding in response to the crisis, ranging from $11 billion to $21 billion.

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"World Bank to invest $45 billion in infrastructure to help create jobs and speed crisis recovery", 23 April 2009, http://web.worldbank.org/WBSITE/EXTERNAL/NEWS/0,,contentMDK:22152817~pagePK:64257043~piPK:437376~theSitePK:4607,00.html

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"Infrastructure financing gap endangers development goals", 23 April 2009, http://web.worldbank.org/WBSITE/EXTERNAL/NEWS/0,,contentMDK:22154463~pagePK:64257043~piPK:437376~theSitePK:4607,00.html.

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World Bank, "Infrastructure", http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTSDNET/0,,contentMDK:22493665~menuPK:6395187~pagePK:64885161~piPK:64884432~theSitePK:5929282,00.html

39 In the transport sector, investment in projects with private participation in 2010 was 40 per cent higher than in 2009, with most of the investment taking place in India. Private investments in the water and sewerage sector, by contrast, remained at the same level as in 2009.

In IDA countries – the world's poorest countries – projects with private participation in the energy, transport and water sectors grew to record levels in 2010, reaching $7.5 billion (compared to just $1 billion in 2009).

See:

Public-Private Infrastructure Advisory Facility, "Private investment in transport returns to pre-crisis levels in 2010", *PPI Data Update Note* 50, July 2011, http://ppi.worldbank.org/features/July2011/2010-Transport-note-final.pdf

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43 Group of Twenty, "Final Communiqué", G-20 Leaders Statement, 19 June 2012, http://www.g20.org/images/stories/docs/g20/conclu/G20_Leaders_Declaration_2012.pdf

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45 Mcleod, B., "Building a Better Asia – Public, private, partnerships and profits", *Asian Venture Capital Journal*, 14 April 2010, http://www.avcj.com/avcj/analysis/1600962/building-asia-public-private-partnerships-profits

46 Ghoash, D and Ganguly, A., "Impact of Carbon Finance", *PFI India Report 2010*, Project Finance International, http://www.pfie.com/inevitable-rapid-change/583362.article.

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Commenting on recent changes in debt financing, Steve Pagliuca of hedge fund Bain Capital says: "Ten years ago, 75 per cent of lending was done by banks, 25 per cent by nontraditional sources. Over the last five years, 75 per cent has been done by non-bank institutions."

Gillian Tett of the *Financial Times* also notes: "In early 2008 shadow banking was $20,000bn in size, dwarfing the $11,000bn traditional banking system. And though this shadow system has now shrunk to a 'mere' $16,000bn, this remains bigger than traditional banking, at some $13,000bn."

The New York Federal Reserve also confirms the role of the shadow banking system in lending money: "The volume of credit intermediated by the shadow banking system is of comparable magnitude to credit intermediated by the traditional banking system".

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Hildyard, N., “High risk – Low Return? ABB’s Hydropower Strategy Under Review”, 1998, http://www.thecornerhouse.org.uk/resource/high-risk-low-return

Hildyard, N., “Dams on the Rocks: The Flawed Economics of Large Dams”, *Corner House Briefing* 8, 1998, http://www.thecornerhouse.org.uk/resource/dams-rocks

133 Preqin, *Infrastructure Spotlight*, February 2010, p.3 http://www.preqin.com/docs/newsletters/INF/Preqin_Infra_Spotlight_Feb2010.pdf

134 Preqin, *The 2010 Preqin Infrastructure Review*, Fig 3.7: Unlisted infrastructure fundraising – Asia and the Rest of the World, London, 2010, p.22.

135 As Gopal Sarma, a partner at Bain & Company, notes for India:

“One of the reasons why we think we are going to see an expanded growth of private equity is the market has matured over the last 5-10 years. The last 5-10 years have really been the early days of private equity in India and I think we’re reaching a far greater level of market maturity where the entrepreneur understands that private equity can actually bring value beyond money.”

See:

Williams, M., “Interview: Building India with private equity”, Reuters, 1 June 2011, http://in.reuters.com/article/2011/06/01/idINIndia-57419320110601?type=economicNews

136 Alves, B., “Macquarie rules but bank-affiliated funds in decline”, *Infrastructure Investor*, 1 June 2011, http://www.peimedia.com/resources/Conference/IIAmericas2011/Macquarie%20rules%20but%20bank.pdf

137 “Private equity paves way for India’s infrastructure”, Preqin, 1 June 2011, http://www.preqin.com/item/private-equity-paves-road-for-india-s-infrastructure/102/3798

138 Schwartz, D., *The Future of Finance: How Private Equity and Venture Capital will shape the Global Economy*, Wiley Finance, 2010, p.16.

139 Schwartz, D., *The Future of Finance: How Private Equity and Venture Capital will shape the Global Economy*, Wiley Finance, 2010, p.17.

140 The term Development Finance Institution (DFI) applies to a variety of institutions, both bilateral and multilateral, whose purpose, according to CDC Group, the UK’s DFI, is “to stimulate private sector development in economies underserved by commercial financial institutions” and to play “a catalytic role by facilitating additional investment flows into emerging markets”, particularly where commercial investors perceive the risks to be too high without some form of official guarantee.

Bilateral Development Finance Institutions include: AWS – Austria, BIO – Belgium, COFIDES – Spain, DEG – Germany, FINNFUND – Finland, FMO – The Netherlands, IFU – Denmark, NORFUND – Norway, OeEB – Austria, PROPARCO – France, SBI-BMI – Belgium, Sifem – Switzerland, SIMEST – Italy, SOFID – Portugal, SWEDFUND – Sweden, OPIC – USA.

Multilateral institutions that have a development finance arm include: the International Finance Corporation (IFC – part of the World Bank Group), the European Bank for Reconstruction and Development (EBRD) and the Asian Development Bank (ADB).

See:

CDC Group, “The Purpose of DFIs”, http://www.cdcgroup.com/uploads/cdc_purpose_dfi.pdf

141 Schwartz, D., *The Future of Finance: How Private Equity and Venture Capital will shape the Global Economy*, Wiley Finance, 2010, p.23.

142 In 1998, David Hess, a partner in Arthur Andersen's Corporate Finance Group, told morebusiness.com: “Investors require a minimum internal rate of return of 30 per cent.” According to the British Private Equity and Venture Capital Association (BVCA), private equity investments in the UK have returned an average of 38.8 per cent net to investors each year for the past three years. Returns for some funds focused on Asia have been much higher. In 2011, Michael Shone, chief executive officer of Commercial Intelligence, a fund focused on emerging market debt recovery, told PE Asia, “we worked out that the average net recovery was 4.5x the original investments over a period of three years”.

See:

Hess, D., “Private Equity Alternatives”, *morebusiness*, 1 August 1998, http://www.morebusiness.com/running_your_business/financing/priveq.brc

“Five Minutes with Michael Shone”, *PE Asia*, 2 September 2011, http://www.privateequityasia.com/Article.aspx?aID=0&article=62949

143 Schwartz, D., *The Future of Finance: How Private Equity and Venture Capital will shape the Global Economy*, Wiley Finance, 2010, p.34.

144 *Investment and Pensions Asia* notes:

"[T]he majority of unlisted infrastructure funds (83%) target a net internal rate of return (IRR) of between 10% and 20%, which is lower than the level of returns traditionally sought by fund managers operating private equity or real estate funds, and the potential for very high returns is also much lower in this asset class . . .[O]nly 1% of infrastructure funds target an IRR of 25%. Most institutional investors believe management fees should reflect this lower risk/return profile."

Private Equity Asia notes that, for India, investors in private equity funds generally (not just infrastructure funds) are looking for rates of return of 25 per cent.

See:

Sourbes, C., "Institutional Investors eager to invest in infrastructure", *Investment and Pensions Asia*, 26 August 2011, http://www.ipe.com/asia/institutional-investors-eager-to-invest-in-infrastructure_41787.php

Private Equity Asia, *Asia Private Equity Report*, May 2012, p.33, http://www.privateequityasia.com/resources/PE%20Asia%20May_%20Special%20Report.pdf

145 "Energy in Numbers" *in* "Energy White Paper 2012", *Infrastructure Investor*, p. 14, http://www.peimedia.com/resources/II%20Energy/II_Energy_Whitepaper_2012.pdf

146 Clove Capital, "Update News on 10 August 2012", http://clovecapital.com/news.php

147 "Five minutes with . . . Clark Zhang", *PE Asia Perspective*, March 2012, http://www.privateequityasia.com/Article.aspx?article=66076

148 That said, infrastructure funds (and private equity funds more generally) are not as old as some private equity practitioners like to argue. The CEO of Abraaj Capital, for example, dates private equity back to Christopher Columbus and "Sinbad the Sailor", arguing that the profession of private equity is "as old as man itself".

See:

Naqvi, A., "Funding the Future? Private Equity", World Economic Forum, 22 May 2006, http://www.abraaj.com/sites/default/files/presentations/Funding_Future_World_Economic_Forum.pdf

149 Shandling, K., "What Impact Will These Funds Have on the Water and Wastewater Infrastructure Sector?", *Water Ulility Infrastructure Management*, 1 July 2007, accessed 29 August 2010, http://www.uimonline.com/index/webapp-stories-action?id=29&archive=yes&Issue=2007-08-01

150 Asian Development Bank, "Equity Investments – The Asian Infrastructure Fund and Asian Infrastructure Management Company", December 2009, p.2, http://www.adb.org/Documents/PCRs/REG/27727-REG-PCR.pdf

151 Asian Development Bank, "Equity Investments – The Asian Infrastructure Fund and Asian Infrastructure Management Company", December 2009, p.2 and p.22, http://www.adb.org/Documents/PCRs/REG/27727-REG-PCR.pdf

152 The AIG Asian Infrastructure Fund ("Asia I" or the "Fund") was established in 1994, with a capitalization of $1.08 billion, to in infrastructure and related industries in Asia. The government of Singapore was a co-investor with AIG. The Fund made 24 investments in a wide variety of sectors including fixed line and mobile telecommunications, toll roads, container terminals and electric power and water, and in countries including China, India, Korea, The Philippines, Taiwan and Thailand.

See:

"AIG Asian Investment Fund", http://www.empglobal.com/fund.xml?id=1000

153 Stafanakis, V., "Role of Capital Markets in Global Infrastructure Finance", 1996, p.60, http://dspace.mit.edu/bitstream/handle/1721.1/40157/35265463.pdf?sequence=1

154 AIG's Latin America Infrastructure Fund (LAIF) was established in 1996, with $1.1 billion in capital. At the time, "it was the largest private equity fund operating exclusively in the Latin America and the Caribbean". Between 1997 and 2002, "LAIF made 23 investments totaling $803 million. The Fund targeted minority stakes in infrastructure related businesses, often in sectors that had recently been deregulated or privatized. Investments spanned the entire region, with a focus on Argentina, Mexico and Brazil. LAIF invested in companies operating in fixed and wireless telephony, cable TV, transportation, petrochemicals, and power generation and distribution." EMP Latin American Management LLC is the principle adviser to the fund.

See:

EMP Global, "AIG-GE Capital Latin American Infrastructure Fund", http://www.empglobal.com/fund.xml?id=1002

EMP Global, "Investment by Industry", http://www.empglobal.com/portfolio.xml?f=industry&parent_q=1010&q=1010&q=1011&q=1022&q=1023&q=1024&t=i&view=industry&media=history

155 The AIG-GE Latin American Infrastructure Fund's investments included:

- the Brazilian electricity and energy companies COELCE – Companhia Energetica do Ceara, COSERN – Companhia Energetica do Rio Grande and Tractabel Energia (formerly Gerasul);
- TDE – Red Electrica de Bolivia Ltd which owned and operated Bolivia's high voltage transmission line network;
- Lyonnaise Latin America Water Corp., an investment company set up by Suez Lyonnaise des Eaux group "to co-finance equity investments in Latin American projects related to the group's activities in water production, treatment and distribution"; and
- The mining company, KAP Resources.

See:

EMP Global, "AIG-GE Latin American Infrastructure Fund", http://www.empglobal.com/fund.xml?id=1002

156 "The AIG African Fund Infrastructure Fund L.L.C. ('AAIF') was established in March 2000 to invest in infrastructure and related industries in Africa. The Fund has US$407.6 million in commitments from investors and a ten-year term. AAIF invests primarily through equity, quasi-equity and convertible debt instruments in numerous sectors throughout the Continent of Africa including: Telecoms, Natural Resources, Agro-Industry, Transportation, Power and Water among others."

See:

EMP Global, "AIG African Fund Infrastructure Fund", http://www.empglobal.com/fund.xml?id=1004

157 Pan African Energy Corp Case Study, http://www.empglobal.com/inv_details.xml?id=1013&media=case&back=history

158 EMP Global, formerly Emerging Markets Partnership, describes itself as "the world's largest private equity firm investing in emerging markets". It manages seven funds, including a number previously managed by AIG, and holds "around $6 billion in cumulative capital commitments". It investments "span the globe from Korea to South Africa to Argentina". The firm was founded by Moeen A. Qureshi and Donald C. Roth, both former high flyers at the World Bank (Moeen Qureshi was Chief of Operations and Donald Roth was Treasurer). Their experience at the Bank led them to conclude that "marshaling private capital flows for emerging markets offered an attractive business opportunity".

See:

EMP Global, http://www.empglobal.com/index.xml

159 Emerging Capital Partners, formerly EMP Africa, is a US-based private equity firm that manages seven private equity funds focused on Africa, totaling more than $1.8 billion under management. ECP's website only gives details for six of the funds. The firm's investment strategy is "focused on delivering consistently above-market returns to investors that are uncorrelated to the U.S. and other global economies".

ECP"s Africa Fund II is now under investigation by the Nigerian Economic and Financial Crimes Commission for alleged money laundering and by the European Union's anti-fraud office (OLAF) for alleged fraud, after the Inspectorate General of the European Investment Bank, an investor in Africa Fund II, referred the case to them. The Inspectorate General only refers cases to OLAF where "an initial assessment concludes that fraud or corruption is likely to have occurred". The fund denies any wrongdoing.

See:

Stacey, K., "CDC is linked to Ibori fraud scandal", *Financial Times*, 16 April 2012, http://www.ft.com/cms/s/0/1814303c-87d4-11e1-b1ea-00144feab49a.html#axzz1zZ79hYZX

Hansard, "Written Answer to Question 116132", 12 July 2012, http://www.publications.parliament.uk/pa/cm201213/cmhansrd/cm120712/text/120712w0005.htm

Emerging Capital Partners, http://www.ecpinvestments.com/index.xml

"Memorandum to the Secretary of State for International Development: Concerns over alleged corruption by CDC-backed companies in Nigeria", 28 June 2010, http://www.thecornerhouse.org.uk/resource/concerns-over-alleged-corruption-cdc-backed-companies-nigeria

EIB, "Guidance on fighting corruption, fraud, money laundering and the financing of terrorism" http://www.eib.org/attachments/thematic/fraud_2006_en.pdf

160 Stacey, K., "CDC is linked to Ibori fraud scandal", *Financial Times*, 16 April 2012, http://www.ft.com/cms/s/0/1814303c-87d4-11e1-b1ea-00144feab49a.html#axzz1zZ79hYZX

Hansard, "Written Answer to Question 116132", 12 July 2012, http://www.publications.parliament.uk/pa/cm201213/cmhansrd/cm120712/text/120712w0005.htm

The Corner House, "UK Development Fund implicated in money-laundering investigation: Campaigners slam Government's development approach as DfID-backed private equity fund comes under criminal investigation in Nigeria", 16 April 2012, http://www.thecornerhouse.org.uk/sites/thecornerhouse.org.uk/files/DfID-CDC-Ibori%20Press%20Release%20for%20web.pdf

The Nigerian investigation, which was opened in December 2011, is related to ECP's investments in companies reported by the Nigerian authorities to be "fronts" for the alleged laundering of money said to have been obtained corruptly by the former Governor of Nigeria's oil rich Delta State, James Ibori. Ibori was convicted in the United Kingdom of money laundering in 2012. ECP denies any wrongdoing.

The European Union's Anti-Fraud Office (OLAF) is investigating allegations that ECP defrauded investors, including the European Investment Bank, of $5 million. ECP again denies any wrongdoing.

161 For an overview of the history of infrastructure funds, see:

Tenorio, V. and Idzelis, C., "Can private equity play the infrastructure game?", *The Deal*, 3 April 2009, http://www.thedeal.com/newsweekly/features/can-private-equity-play-the-infrastructure-game.php

162 Macquarie Group describes itself as "a global provider of banking, financial, advisory, investment and funds management services". It was a pioneer of private equity investment in infrastructure

and remains one of the world's most prominent infrastructure investors, with a global portfolio of more than 30 listed and unlisted funds with a focus on infrastructure and $98 billion of infrastructure assets under management in 2010.

Historically, Macquarie's unlisted infrastructure funds have focused primarily on developed countries, but Macquarie has increasingly moved to capitalise on infrastructure in the South. Funds with infrastructure investments in developing countries include its African Infrastructure Fund, the Everbright Macquarie Infrastructure Fund, the SBI Macquarie India Infrastructure Fund and the Macquarie Mexican Infrastructure Fund.

See:

Macquarie Group, http://www.macquarie.com/mgl/com

163 Sao Paulo-based investment bank BTG Pactual is reported to have launched two infrastructure funds, targeting road, port and dam projects in Brazil.

See:

"BTG Pactual to launch Brazilian Infrastructure Fund", 14 December 2009, *Business Monitor International*, http://store.businessmonitor.com/article/312802

Preqin, *Infrastructure Spotlight*, Vol 3 Issue 8, August 2011, http://www.preqin.com/docs/newsletters/INF/Infrastructure_Spotlight_Aug_2011.pdf

164 Citi has established Citi Venture Capital International (CVCI) part of Citi Capital Advisors, "an alternative asset management platform that offers a broad range of targeted strategies and products to select institutional and ultra-high-net-worth (UHNW) investors". CVCI is a leading private equity investor and investment adviser in Asia, Central and Eastern Europe, Africa Latin America and "other regions where CVCI sees clear potential for growth and value creation". Since its inception in 2001, "the CVCI Private Equity team has invested over US$5 billion across Global Emerging Markets and generated value of over US$10 billion, including distributions of over US$7 billion to our investors as at September 30, 2011". CVCI manages five funds: 2001 Fund ($856 million), 2005 Fund ($1.6 billion), 2007 Fund ($4.3 billion), 2005 Brazil Fund and 2006 Africa Fund ($100 million).

See:

Citi Venture Capital International, Citi Centure Capital International, "History", http://www.cvci.citi.com/Pages/Public/History.htm

For details of CVCI's investments, see: Citi Venture Capital International, "Portfolio", http://www.cvci.citi.com/Pages/Public/PortfolioPage.aspx

165 Goldstein, M., "GE, Credit Suisse start infrastructure fund", 31 May 2006, http://www.thestreet.com/story/10288888/ge-credit-suisse-start-infrastructure-fund.html

Global Infrastructure Partners, "Global Infrastructure Partners Announces Appointment of William Woodburn to Management Team", 13 September 2006, http://www.geenergyfinancialservices.com/press_room/press_releases/2006/GE%20JV%20Management%20Team%20Woodburn.pdf

166 Deutsche Bank was reportedly a co-sponsor of Dubai-based Abraaj Capital, which ranks among the 50 largest private equity firms in the world and is the biggest in the Middle East, North Africa and South Asia. Abraaj manages one dedicated infrastructure fund – the Abraaj Infrastructure and Growth Capital Fund – with $2 billion in assets under management.

See:

"Abraaj Capital announces first closing of Infrastructure and Growth Capital Fund with commitments of US$500 million", *albawaba*, 4 February 2007, http://www.albawaba.com/business/abraaj-capital-announces-first-closing-infrastructure-and-growth-capital-fund-commitments-u

Abraaj Capital, "Abraaj Infrastructure and Growth Capital Fund", http://www.abraaj.com/content/infrastructure-growth-capital-fund-lp-igcf

167 GS Infrastructure Partners is Goldman Sachs' "primary vehicle" for making direct investments in infrastructure and infrastructure related assets and companies. Its funds have $10 billion of capital at their disposal. GS Infrastructure Partners is global in scope but invests primarily in "larger investment opportunities in developed markets with established legal, political and regulatory frameworks". In addition, Goldman Sachs manages a BRIC fund that invests in equity investments in Brazil, Russia, India and China.

See:

Goldman Sachs, "GS Infrastructure Partners", http://www.goldmansachs.com/what-we-do/investing-and-lending/direct-private-investing/equity-folder/gs-infrastructure-partners.html

Goldman Sachs, "Goldman Sachs Closes First Infrastructure Fund With More Than $6.5 Billion", undated, http://www.goldmansachs.com/media-relations/press-releases/archived/2006/2006-12-28.html

Goldman Sachs, http://www2.goldmansachs.com/gsam/docs/funds/investor_education/investor_education/brics_brochure.pdf

168 In 2010, J.P. Morgan Asset Management launched the J. P. Morgan Asian Infrastructure & Related Resources Opportunities Fund, which will target investments in "toll roads and other transportation assets, power generation, electricity transmission/distribution facilities, water supply, waste management and social infrastructure (including facilities for healthcare and education services)".

J.P. Morgan Asset Management is a division of the JP Morgan investment bank. It has $1.5 trillion in assets under supervision and offers a range of investment platforms, including hedge funds and private equity funds.

In 2011, the fund reportedly acquired a stake in Soma Enterprises, an Indian infrastructure developer..

See:

JP Morgan Asset Management, "JPMorgan Asian Infrastructure & Related Resources Opportunity Fund Raises $858.6 Million", http://www.jpmorgan.com/pages/jpmorgan/am/news/Asian-Infrastructure-fund

"J.P. Morgan Asset Management acquires minority stake in Soma Enterprise Ltd for $110 mln", 8 September 2011, http://banking.contify.com/story/j-p-morgan-asset-management-acquires-controlling-stake-in-soma-enterprise-ltd-for-110-mln-2011-09-08

169 In 2006, investment banking group Morgan Stanley founded Morgan Stanley Infrastructure Partners (MSIP), which is "an infrastructure investment and management platform with $4 billion under management". MSIP has invested in Chile, India, China and has a joint venture with the Egyptian construction firm Orascom Construction Industries to invest across the Middle East and Africa. The fund is reported to be investing about $200 million in three highways and road toll projects promoted by Hyderabad based Soma Enterprises. Morgan Stanley Infrastructure Partners has also invested in Asian Genco,a Singapore company developing energy projects in India, and, reportedly, in Continuum Wind Energy, an Singapore-based company with a portfolio of 500 MW projects, principally in India.

See:

Morgan Stanley Infrastructure Partners, http://www.morganstanley.com/infrastructure/

"Sadek Wahba, Morgan Stanley Infrastructure Partners - Never assume the sun will rise", *Infrastructure Investor*, March 2011, http://www.morganstanley.com/infrastructure/pdf/msin_032011.pdf

"Morgan Stanley Infra Fund to invest $200 million in Soma's Highway Projects", *VCCircle*, 1 November 2010, http://www.vccircle.com/500/news/morgan-stanley-infra-fund-to-invest-200m-in-somas-highway-projects

Morgan Stanley, "Asian Genco Pte Ltd (AGPL) Secures Over USD 425 Million Investment Commitment from a Global Consortium of Investors", Press Release, 17 May 2010, http://www.morganstanley.com/about/press/articles/5ab979fd-bca3-11df-9911-3958cfb8b586.html

"MSIP invests in wind power generation company Continuum Wind Energy", *VC Circle*, 29 June 2012, available from http://in.reuters.com/article/2012/06/29/msip-invests-in-wind-power-generation-co-idINDEE85S0CO20120629

170 Nomura Securities is a division of Nomura, the Japanese investment bank. In June 2010, it announced that it was joining with Nippon Export and Investment Insurance, a Japanese government agency, to establish infrastructure funds in Asia and other regions, reducing risk by using trade insurance. Target sectors mentioned are power generation facilities, roads, ports, airports, and water supply and sewage systems. Nomura is reported to be raising a $500 million fund for infrastructure investments in India and a $1.1 billion fund for investment in nuclear power and railways internationally.

See:

Kumakura, T., "Nomura to Start $1.1 Billion Infrastructure-Development Fund, Yomiuri Says", 20 June 2010, *Bloomberg*, http://www.bloomberg.com/news/2010-06-20/nomura-to-start-1-1-billion-infrastructure-development-fund-yomiuri-says.html

Davis, A., "Nomura targets Indian infrastructure", *Asian Venture Capital Journal*, 24 March 2011, http://www.avcj.com/avcj/news/2036948/nomura-targets-indian-infrastructure

Nomura, "Nomura Signs Agreement with NEXI on Fund to Invest in Infrastructure Projects in Asia", 21 June 2010, http://www.nomuraholdings.com/news/nr/nsc/20100621/20100621.pdf

Nomoura Securities, http://www.nomuraholdings.com/company/group/nsc/

171 Santander Private Equity is the private equity unit of Santander Asset Management, a division of the Spanish banking multinational. It specialises in infrastructure, managing a dedicated infrastructure fund, Santander Infraestructuras I. It is reported to have invested in a major toll road in Santiago, Chile.

See:

Santander Private Equity, http://www.santanderam.co.uk/csgs/Satellite?canal=CASSETMNG&cid=1195848396062&empr=WCSANAssetManagement&leng=en_GB&pagename=WCSANAssetManagement%2FPage%2FWCCASSETMNG_Page_InformacionSinLateral_Tipo1

172 South Africa-based Standard Bank has been involved with a number of infrastructure funds, including:

- CapAsia, formerly CIMB Standard, a joint venture private equity firm, established with CIMB Group, Malaysia's second largest financial services group. CapAsia, which is now majority owned by The Rohatyn Group (TRG), a private investment firm focused on emerging markets, invests in emerging Asian infrastructure companies outside of China and India. It manages three funds, with a total of $480 million under management.

- Frontier Markets Fund Managers Limited, a Mauritius incorporated company, jointly-owned with Emerging Market Partners and FMO, the Dutch Development Finance Institution. Frontier Markets manages the Emerging Africa Infrastructure Fund, a $600 million debt fund, "which aims to address the insufficient availability of long-term foreign exchange debt finance in sub-Saharan Africa".

See:

CapAsia,"About Us", http://cap-asia.net/index.php?ch=cap_about&pg=cap_about_background

Frontier Markets Fund Managers, "FMFML", http://www.frontiermarketsfm.com/fmfml/fmfml.aspx

Emerging Africa Infrastructure Fund, http://www.emergingafricafund.com/

173 The term was applied to KKR by Bryan Burrough and John Helvar in their 1991 account of KKR's take over of RJR Nabisco, *Barbarians at the Gate: the Fall of RJR Nabisco* (Harper Business Essentials). It has since been widely used to describe private equity firms in general.

174 Kohlberg Kravis Roberts (KKR) is one of the world's largest private equity fund managers. Investments in "energy, natural resources, and infrastructure assets on a global basis" are a major focus of its funds. In 2011, KKR was reported to be raising a $1.5 billion India-focused fund. It has also secured $1 billion for a China Fund which will focus on infrastructure and natural resources..

See:

KKR, "Energy and Infrastructure", http://www.kkr.com/businesses/private-markets/energy-infrastructure

"KKR closes $1 billion China fund", *pedaily.com*, 24 February 2011, http://www.pedaily.cn/Item/206119.aspx

Davis, A., "KKR plans a $1.5 billion India focused fund", *Asian Venture Capital Journal*, 7 January 2011, http://newsletters.incisivemedia.com/c/1hJLbRfEGVhPCX6VciW

175 Everstone Capital is an Indian investment firm that manages a $425 million private equity fund, Indvision I, which focuses on "companies that benefit from domestic consumption within India", but which also invests in "energy and infrastructure services". Investments to date include: ReGen Powertech, a "a turnkey solutions provider for wind power projects"; Asian Genco, a Singapore-based energy company with investments in hydro and coal-fired energy; and B. E. Billimoria, a major construction company. Everstone is reported to be set to close a second $550 million fund.

See:

Everstone Capital, "Indvision I", http://www.everstonecapital.com/PrivateEquity-Funds.aspx

"Everstone set to close $550m fund", *Asian Venture Capital Journal*, 25 February 2011, http://www.avcj.com/avcj/news/2028889/everstone-set-close-usd550m-fund

176 Patria Investimentos is a Brazilian investment firm with over US$5.8 billion in assets under management as of 31 December 2011. In 2010, it entered into a partnership with private equity giant Blackstone, which purchased a 40% interest in Patria. Patria describes its private equity unit as "the cornerstone of our business", with "a successful track record of investment and value-realization in a wide range of sectors and across varying cycles of the Brazilian economy". Patria's Energia Fund has invested in windpower and small hydro. In partnership with Promon SA, Patria also founded P2Brasil, a company that invests in oil and gas, water and sanitation, transportation and power transmission and distribution.

See:

Patria Investments, "Infrastructure", http://www.patriainvestimentos.com.br/en/Businesses/Infrastructure

Patria Investment, "Partnership with Blackstone", http://www.patriainvestimentos.com.br/en/TheFirm/PartnershipWithBlackstone

177 Abraaj Capital ranks among the 50 largest private equity firms in the world and is the biggest in the Middle East, North Africa and South Asia. It manages one dedicated infrastructure fund –the Abraaj Infrastructure and Growth Capital Fund – with $2 billion in assets under management.

See:

Abraaj Capital, "About us", http://www.abraaj.com/content/about-us

"Abraaj Capital announces first closing of Infrastructure and Growth Capital Fund with commitments of US$500 million", *albawaba*, 4 February 2007, http://www.albawaba.com/business/abraaj-capital-announces-first-closing-infrastructure-and-growth-capital-fund-commitments-u

178 "The PEI 300: the World's largest private equity funds", *Private Equity International*, August 2011, p.6.

179 "Ten infrastructure themes in 2010", Week In Review, *Infrastructure Investor*, 23 December 2010, http://www.infrastructureinvestor.com/Article.aspx?article=58442&hashID=CD50F7E04DE7C5B3E9674EE7FCB88DDC148CFC4E

180 "ABB sets up project equity fund", *Project Finance International*, http://www.pfie.com/abb-sets-up-project-equity-fund/379615.article

181 Hammond, E, "Balfour to launch £1bn infrastructure fund", *Financial Times*, 30 November 2010, http://www.ft.com/cms/s/0/cbc4901a-fcbe-11df-bfdd-00144feab49a.html#axzz19E3cy52h

182 International Project Finance Association, John Laing to launch £270M listed infrastructure fund, 14 October 2010, http://ipfa.squareeye.com/news/11564/john-laing-to-launch-270m-listed-infrastructure-fund

MacLellan, K., and Roumeliotis,G., "John Laing Infrastructure Fund IPO raises 270 million pounds", *Reuters*, 25 November 2010, http://uk.reuters.com/article/2010/11/25/uk-johnlaing-idUKLNE6AO01C20101125

183 Balfour Beatty, "Power", http://www.balfourbeatty.com/bby/markets/power/

184 John Laing, Project Portfolio by country, http://www.laing.com/top/project_portfolio/by_country.html

185 "British consortium to build roads in India, says Kamal Nath", *Deccan Herald*, 2 February 2010, http://www.deccanherald.com/content/50360/british-consortium-build-roads-india.html

JETCO, "Minutes from JETCO PPP/ Infrastructure Working Group", 1 February 2010, http://www.ukti.gov.uk/download/106292_100422/JETCO%20Infrastructure%20PPP%20Working%20Group.doc.html

186 Power Finance Corporation, “Spreading out to newer fields with accelerated growth”, 24th Annual Report 2009-10, p.30, http://www.pfc.gov.in/writereaddata/userfiles/file/Annual%20reports/ann_rpt0910.pdf

187 “A fundamental financing role” *in* “Infrastructure Investor India Country Briefing”, *Infrastructure Investor*, May 2011, p.28, http://www.infrastructureinvestor.com/resources/Infrastructure/II%20INDIA%20WEB.pdf

188 EMP Global, “AIG Asian Infrastructure Fund II”, http://www.empglobal.com/fund.xml?id=1001

189 EMP Global, “AIG Asian Infrastructure Fund II”, http://www.empglobal.com/fund.xml?id=1001

190 Brookfield Asset Management, formerly Brascan Corporation, is “a global asset management company, focused on property, power and infrastructure assets”. It has assets under management valued at $150 billion, as of August 2012. Brookfield’s renewable energy portfolio is managed through Brookfield Energy Partners, LP, a publicly listed entity, which operates “5,000 megawatts of installed capacity . . . diversified across 67 river systems and 10 power markets in Canada, the United States and Brazil”. It is “one of the largest independent energy producers in Latin America” and “a significant investor in Brazil” with 35 small hydropower facilities in operation with an installed capacity of 600 MW. Brookfield’s infrastructure portfolio is managed by Brookfield Infrastructure Partners LP, also publicly listed, with assets in the energy, transport and timber sectors.

See:

Brookfield Asset Management, http://www.brookfield.com/

Brookfield Renewable Energy Partners LP, “Historical Information”, http://www.brookfieldrenewable.com/content/historical_information-31629.html

Brookfield Renewable Energy Partners, http://www.brookfieldrenewable.com/

Brookfield Infrastructure Partners, “Investor Presentation”, 8 June 2012, https://www.brookfieldinfrastructure.com/_Global/22/img/content/8_June_2012%20BIP_Investor_Presentation_June_v3.pdf

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See:

Brookfield Asset Management, “Chilean Transmission Fund”, http://www.brookfield.com/eng_content/_products/chilean_transmission_fund-31614.html

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“SEC fines Chilectra, Transelec and Transelec Norte for blackouts in July, November 2010”, p3consultores, http://www.p3consultores.cl/en/sec-fines-chilectra-transelec-and-transelec-norte-for-blackouts-in-july-november-2010/

192 3i is one of the world’s oldest private equity firms. It manages the world’s largest capital growth fund and a number of infrastructure funds, focused on both industrialised and industrialising countries. In all, 3i invests over $3bn every year in businesses across Asia, Europe and the US. 3i has been a major investor in the oil and gas sector for over 40 years.3i has one dedicated Asian infrastructure fund – the 3i India Infrastructure Fund – which closed in 2007 with capital of US$1.2 billion. The fund emerged out of a strategic partnership agreement with the Indian Infrastructure Finance Company, which invests in ports, airports, roads and the power sector. 3i is reported to be planning increases in their allocation of funds to India. A second Indian

infrastructure fund was launched in 2012, with an expanded remit that will include investments in "social infrastructure", such as education, healthcare and "housing for military personnel", as well as power and transportation.

See:

3i, 3i Infrastructure Plc, "Welcome to 3i Infrastructure", http://www.3i-infrastructure.com/index.html

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See:

Jain, S., "Investing in developed country private equity infrastructure funds", 1July 2008, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1771635

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See:

AIF Capital, "About Us", http://www.aifcapital.com/en/about/

Hong Kong Business Directory, "AIF Capital Ltd", http://hkgcc.dclook.com/en/membership/directory_detail.aspx?member_cate=HKM&id=HKA0553

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In 2009, Blackstone established the firm's first regional private equity fund in China - the Blackstone Zhonghua Development Investment Fund – to invest in financial, transportation and industrial enterprises in the Shanghai Pudong New Area.

Blackstone also owns 40 per cent of Patria Investimentos, a Brazilian private equity firm, whose Patria Energia Fund has invested in windpower and small hydro. In partnership with Promon SA, Patria also founded P2Brasil, a company that invests in oil and gas, water and sanitation, transportation and power transmission and distribution.

In 2007, Blackstone, India's Infrastructure Development Finance Co. Ltd (IDFC), Citigroup Inc. and India Infrastructure Finance Co. Ltd (IIFCL) announced plans to raise $5 billion to invest in infrastructure projects in India. However, the firm pulled out of the deal in 2008, after it was reportedly offered too small a slice of the equity in the fund.

See:

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See:

Sithe Global, "Projects", http://www.sitheglobal.com/projects.cfm

The Blackstone Group, "Blackstone Capital Partners, Together with Bruce Wrobel and Management, Acquires a Majority Interest in Sithe Global Power, a Leading Power Development Company", 10 May 2005, http://www.blackstone.com/cps/rde/xchg/bxcom/hs/news_pressrelease_3267.htm

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See:

Och-Ziff Capital Management Group, "Our firm - Overview", http://www.ozcap.com/our_firm/index

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See:

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226 The 3i India Infrastructure Fund – which closed in 2007 with capital of US$1.2 billion fund - emerged out of a strategic partnership agreement with the Indian Infrastructure Finance Company, which invests in ports, airports, roads and the power sector. Investments by the India Infrastructure Fund in the power sector include: Adani Power Limited, a subsidiary of the Adani Group, which is building a portfolio of power generation projects in India; Soma Enterprise Limited, “an infrastructure engineering and construction company, with an order book comprising

projects diversified across sectors such as hydropower, irrigation, railways, power transmission and urban infrastructure, and BOT road projects aggregating to approximately 800 km"; and GVK Energy), part of the GVK group, a leading Indian infrastructure conglomerate, that has a power portfolio that includes "a slew of CCPP - Combined Cycle Power Plant (gas/naphtha based), Thermal (coal based) and Hydro Power Projects across the country".

See:

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Alberta Investment Management Corporation, "Private Equity Investment Groups", http://www.aimco.alberta.ca/inv_ig_pi_privateequity.aspx

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"ADB invests in PE fund for Philippine infrastructure", *Trade Finance*, 31 July 2012, http://www.tradefinancemagazine.com/Article/3069218/ADB-invests-in-PE-fund-for-Philippine-infrastructure.html?ArticleID=3069218&LS=EMS694925

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See:

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See:

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See:

AIF Capital, "Investors", http://www.aifcapital.com/en/about/investors/

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CDH Investments, http://www.cdhfund.com/

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Many countries have Development Finance Institutions including: AWS – Austria, BIO – Belgium, COFIDES – Spain, DEG – Germany, FINNFUND – Finland, FMO – The Netherlands, IFU – Denmark, NORFUND – Norway, OeEB – Austria, PROPARCO – France, SBI-BMI – Belgium, Sifem – Switzerland, SIMEST – Italy, SOFID – Portugal, SWEDFUND – Sweden, OPIC – USA.

Multilateral institutions that have a development finance arm include: the International Finance Corporation (IFC – part of the World Bank Group), the European Bank for Reconstruction and Development (EBRD) and the Asian Development Bank (ADB).

See:

CDC Group Plc, *Development Review 2009*, 2010, http://www.cdcgroup.com/uploads/development_review_2009.pdf

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See:

CDC Group Plc, “About us”, http://www.cdcgroup.com/

National Audit Office, “Investing for Development: The Department for International Development’s Oversight of CDC Group Plc”, 2008, p.4, http://www.nao.org.uk/idoc.ashx?docId=C6A8AEDD-2C9E-438F-8D48-7979C341AA62&version=-1

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"ECP gets $20 million backing from Export Development Canada", *Private Equity Africa*, 20 August 2010, http://www.privateequityafrica.com/funds/ecp-gets-20m-backing-from-export-development-canada/

"Export Development Canada invests in $50 million IDFC infra fund", *VC Circle*, 17 March 2008, http://archive.vccircle.com/wordpress/2008/03/17/export-development-canada-invests-50-million-idfc-infra-fund/

265 China Export-Import Bank (China Exim) is China's export credit agency and a major lender of Chinese Government-backed loans to developing countries. It will act as the "anchor investor" for the China-ASEAN Investment Cooperation Fund, an unlisted, closed end private equity fund with a target size of $1 billion. China ExIm is investing $300 million and three other undisclosed "prominent Chinese institutions" are reported to be making additional combined investments of $500 million. The World Bank's International Finance Corporation approved an equity investment of $100 million in 2010. The fund will fund "infrastructure, energy and construction in the ASEAN member countries". In March 2011, China ExIm Bank signed an agreement with the Inter-American Development Bank to establish a new infrastructure facility and public-private investment fund to back infrastructure projects in Latin America.

See:

IFC, "China-ASEAN Investment Cooperation Fund", undated, http://www.ifc.org/ifcext/spiwebsite1.nsf/1ca07340e47a35cd85256efb00700cee/EA30D66D3BCEE0F9852576BA000E3309

266 Glowacz, B., "Tapping development finance", *African Investor*, March-April 2011, http://content.yudu.com/Library/A1rctf/AfricaInvestorAeroMa/resources/27.htm

267 Preqin, "The 2010 Preqin Infrastructure Review", 2010, p.336, www.preqin,com

268 EMP Global, "EMP Global home page", http://www.empglobal.com/index.xml

269 EMP, "Overview", http://www.empwdc.com/content_overview.html

270 EMP Global, "EMP Global home page", http://www.empglobal.com/index.xml

271 CDC Group, http://www.cdcgroup.com/

272 European Investment Bank, http://www.eib.org/

273 Finnfund – Finnish Fund for Industrial Cooperation Ltd, http://www.finnfund.fi/en_GB/

274 Norfund, http://www.norfund.no/

275 Proparco, http://www.proparco.fr/site/proparco/Accueil_PROPARCO

276 Swiss Investment Fund for Emerging Markets (SIFEM), http://www.sifem.ch/

277 Swedfund, http://www.swedfund.se/en/

278 IFC's description of an intermediary is available at http://www.ifc.org/ifcext/about.nsf/Content/Financial_Intermediaries

279 The IFC calculates that, during the past ten years, it has backed more than 10% of all the emerging market private equity funds that have come to market.

See:

Lord, N, "A look at how IFC does Private Equity", *Finance Asia*, 23 August 2011, http://www.financeasia.com/News/267699,a-look-at-how-ifc-does-private-equity.aspx

280 IFC, "Private Equity and Investment Funds: Opportunities in Financial Markets", 2008, http://www.ifc.org/ifcext/gfm.nsf/AttachmentsByTitle/E-Trifold/$FILE/E-Trifold.pdf

281 The National Audit office states: "The annual rate of growth in its assets has averaged 24 per cent compared to a cost of capital threshold of five per cent set by the Treasury in 2004."

See:

National Audit Office, "Investing for Development: The Department for International Development's Oversight of CDC Group plc. Report by the Comptroller and Auditor general", 2008, p.5, http://www.nao.org.uk/idoc.ashx?docId=1a2db916-cf91-4ce9-89c9-7f821b3f0d12&version=-1.

See also:

House of Commons Public Accounts Committee, "Investing for Development: the Departent for International Development's Oversight of CDC Group plc", Ev 3, Q18, 2009, http://www.publications.parliament.uk/pa/cm200809/cmselect/cmpubacc/94/94.pdf.

Ms Nemat Shafik, Permanent Secretary, Department for International Development, told the Committee: "When CDC was restructured it has been returning rates of return of 24% over the last four years".

282 Private Eye, "That's Rich: How Britain's Poverty Relief fund abandoned the poor . . . while its bosses cleaned up", *Private Eye*, 3 September 2010, p.21.

283 CDC Group Plc, "Performance Review", *Financial Review 2009*, p.21, http://online.hemscottir.com/ir/cdc/fr_2009/download/pdf/Our_Business.pdf.

CDC's Chief Financial Officer states: "Whilst CDC's portfolio performance was less than its MSCI benchmark in 2009, on a three year rolling basis it was 6% ahead of the benchmark."

284 Brooks, R., "That's Rich! How Britain's poverty relief fund abandoned the poor … while its bosses cleaned up", *Private Eye,* 3 September 2010.

285 For further discussion, see:

Giffiths, J., '*Leveraging' private sector finance: How does it work and what are the risks*, Bretton Woods Project, 18 April 2012, http://www.brettonwoodsproject.org/art-570165

286 The number of High Net Worth Individuals in India rose by 50 per cent in 2009, whilst that in China doubled

See:

Merrill Lynch/Capgemini, *2010 World Wealth Report*, 2010, http://www.capgemini.com/services-and-solutions/by-industry/financial-services/solutions/wealth/worldwealthreport/

287 Over the years, environmental and human rights campaigners have pressed (with varying degrees of success) for public and private financiers of infrastructure projects to adopt policies aimed at minimizing the environmental damage caused by new developments and ensuring that those affected are properly consulted and recompensed. Those that apply to IFC-financed projects are often used as a benchmark by other agencies that offer financial support to the private sector.

See:

International Finance Corporation, http://www.ifc.org/ifcext/enviro.nsf/content/envsocstandards

288 The Asian Development Bank and the US Overseas Private Investment Corporation are examples.

See:

Fried, S, "Safeguard Policies for Financial Intermediaries", Ulu Foundation, November 2010, http://www.slideserve.com/yaphet/safeguard-policies-for-financial-intermediaries-stephanie-fried-ulu-foundation-stephf99gmail-com-london-november-2010

289 For further discussion, see:

International Development Committee, "The Future of CDC Group ", "Written evidence by The Corner House and Jubilee Debt Campaign", paras 14-20, 2011, http://www.publications.parliament.uk/pa/cm201011/cmselect/cmintdev/607/607vw06.htm

Oxfam/CIEL/GROW, *Risky Business: Intermediary lending and development finance*, 18 April 2012, http://www.oxfam.org/sites/www.oxfam.org/files/ib-intermediary-lending-and-development-finance-180412-en.pdf

290 Commenting on the standards that would apply to a line of credit made by the World Bank to the India Infrastructure Finance Company Limited (IIFCL), the World Bank states:

"The Bank's environmental and social safeguards will not apply to projects that are not financed by the World Bank. The IIFCL is developing its own set of safeguards policies. A draft for consultation is available on their website. The IIFCL is committed to preparing, adopting, and disclosing on its web site an enhanced ESS framework that fully incorporates the Bank's environmental and social safeguard policies and standards. This framework will only be used by IIFCL for Bank-financed sub-projects. IIFCL is also committed to building up its capacity to implement this framework, benefiting, among other things, from the technical assistance provided by the project."

See:

World Bank, "Financing infrastructure PPP projects in India", http://web.worldbank.org/WBSITE/EXTERNAL/PROJECTS/0,,contentMDK:22322364~menuPK:64282137~pagePK:41367~piPK:279616~theSitePK:40941,00.html

291 For further discussion, see:

International Development Committee, "DfID in 2009-10 and the Resource Accounts 2009-10", "Written Evidence by The Corner House and Dotun Oloko", 16 November 2010, http://www.publications.parliament.uk/pa/cm201011/cmselect/cmintdev/605/605vw08.htm

292 "Trickle down" theory assumes that even where economic growth initially benefits only the richer sections of society, it will eventually benefit the wider population through the jobs and other economic activities created when the rich spend their money. The theory has been widely criticised. In free market economies, where taxes are kept low and the state plays little role in directing economic outcomes, the tendency is for economic growth to result in wealth becoming concentrated within the upper and middle classes rather than being distributed throughout society as a whole.

293 An exception is Germany's DEG, which gives equal weighting to commercial and development outcomes.

See:

DEG, "Corporate Policy Project Rating", February 2010, http://www.deginvest.de/EN_Home/About_DEG/Our_Mandate/Development_Policy_Mandate/GPR-Brief-Description-Englisch_02-2010.pdf

294 For further discussion, see:

International Development Committee, "DfID in 2009-10 and the Resource Accounts 2009-10", "Written Evidence by The Corner House and Dotun Oloko", 16 November 2010, http://www.publications.parliament.uk/pa/cm201011/cmselect/cmintdev/writev/dfid/m8.htm

European Development Finance Institutions (EDFI), "The Growing Role of DFIs in International Development Policy", 8 July 2010, http://www.edfi.be/component/downloads/downloads/43.html

European Development Finance Institutions (EDFI), "The Growing Role of DFIs in International Development Policy", 26 October 2008, http://www.edfi.be/component/downloads/downloads/19.html

295 House of Commons Public Accounts Committee, "Investing for Development: the Department for International Development's Oversight of CDC Group plc", Ev.1, 2009, http://www.publications.parliament.uk/pa/cm200809/cmselect/cmpubacc/94/94.pdf.

CDC similarly claims: "Financial performance is . . . a good proxy for the likely impact that CDC will have on the department's objectives of poverty reduction".

See:

Private Eye, "That's Rich: How Britain's Poverty Relief fund abandoned the poor . . . while its bosses cleaned up", *Private Eye*, 3 September 2010, p.21.

296 By "outlandish", we mean that it is simplistic – and irrational – to assume that *any* investment, even when conditioned on environmental and social safeguards, automatically translates into positive impacts on poverty reduction, simply because that investment generates economic growth. On the contrary, without addressing how profits are distributed within society and dismantling those inequities that deny poorer people the benefits, investment tends to benefit richer people at the expense of poorer citizens, widening rather than reducing the gap between rich and poor.

297 A review by the UK's National Audit Office of CDC Group (Britain's development finance institution), which makes extensive use of private equity funds, records: "Fund managers we interviewed questioned the ability of a 'funds of funds' business to secure the breadth of development benefits that DfID hopes CDC can deliver. They doubted whether higher risk and lower return investments were compatible with a commercial business model."

See:

National Audit Office, "Investing for Development: The Department for International Development's Oversight of CDC Group plc. Report by the Comptroller and Auditor general", p.22, 2008, http://www.nao.org.uk/idoc.ashx?docId=1a2db916-cf91-4ce9-89c9-7f821b3f0d12&version=-1

298 House of Commons Public Accounts Committee, "Investing for Development: the Department for International Development's Oversight of CDC Group plc", p.6, 2009, http://www.publications.parliament.uk/pa/cm200809/cmselect/cmpubacc/94/94.pdf.

299 House of Commons Public Accounts Committee, "Investing for Development: the Department for International Development's Oversight of CDC Group plc", p.14, 2009, http://www.publications.parliament.uk/pa/cm200809/cmselect/cmpubacc/94/94.pdf.

For similar criticism of the development outcomes of other DFIs, see:

International Development Committee, "The Future of CDC Group", "Written evidence by The Corner House and Jubilee Debt Campaign", paras 14-20, 2011, http://www.publications.parliament.uk/pa/cm201011/cmselect/cmintdev/607/607vw06.htm

300 National Audit Office, "Investing for Development: The Department for International Development's Oversight of CDC Group plc. Report by the Comptroller and Auditor general", p.23, 2008, http://www.nao.org.uk/idoc.ashx?docId=1a2db916-cf91-4ce9-89c9-7f821b3f0d12&version=-1

301 New projects are referred to as "Greenfield" projects, older assets as "Brownfield". For Greenfield projects, which are deemed riskier, funds have expected a minimum return of 18-20 per cent: for Brownfield investments, the expected returns are lower, at 10-15 per cent.

For an overview of the range of infrastructure fund investment strategies and their relative risks, see:

Tenorio, V. and Idzelis, C., "Can private equity play the infrastructure game?", *The Deal*, 3 April 2009, http://www.thedeal.com/newsweekly/features/can-private-equity-play-the-infrastructure-game.php

Deponte, K., "What are infrastructure funds?", Probitas Partners, undated, http://www.probitaspartners.com/pdfs/Chapter+1_DePonte+%282%29.pdf.

RREEF Research, "Performance Characteristics of Infrastructure Investments", August 2007, available from http://www.irei.com/uploads/marketresearch/95/marketResearchFile/PerfCharInfInv.pdf.

302 Palande, P., "The Re-Engineer", *Forbes India*, 11 December 2009, http://www.forbes.com/2009/11/12/forbes-india-rajiv-lall-infrastructure-development-finance-co.html.

303 Kamal Nath, India's Minister for Highways, recently told a meeting of infrastructure investors that heavy traffic on Indian roads means a guaranteed cash flow for toll road operators. "A toll plaza becomes an ATM".

See:

Miller, M, "Trillion Dollar Baby", *The Deal*, 18 June 2010, http://www.thedeal.com/magazine/ID/034781/featuresold/cover-stories/trillion-dollar-baby.php

304 As the investment bank and infrastructure fund manager JP Morgan notes:

"The history of greenfield infrastructure investing is rich with examples of underperformance as a result of cost overruns, completion delays, usage shortfalls, longer than expected demand ramp-up periods, etc. However, there are also examples of greenfield projects succeeding beyond the initial expectations, or because the risks of start-up and ramp-up were mitigated by appropriately allocating them to parties best suited to manage such risks."

See:

JP Morgan Asset Management, "Infrastructure Investing: Key Benefits and Risks", January 2010, http://www.jpmorganassetmanagement.co.uk/Institutional/_documents/Insights_Infrastructure%20Investing-Key%20benefits%202010-01%20UK_r2.pdf.

305 Under PPP schemes, the government undertakes to pay investors an upfront lump sum based on the project being "available" for use (rather than on projected levels of use). In return, the investors agree to design, finance, construct and operate the project. As a result, the public effectively shoulders many of the risks of developing projects, whilst the profits accrue to the private investors. In the US, legislators in the state of Philadelphia recently rejected a $12.8 billion PPP deal as being against the public interest.

See:

Walters, L., "Build an income with infrastructure", *Investors Chronicle*, 15 July 2010, http://www.investorschronicle.co.uk/InvestmentGuides/Funds/article/20100715/a0ae6e68-8b68-11df-8b51-00144f2af8e8/Build-an-income-with-infrastructure.jsp.

For critiques of PPPs, see:

Whitfield, D., *Global Auction of Public Assets: Public sector alternatives to the infrastructure market and Public Private Partnerships*, Spokesman, 2010.

The Reality of Aid, "PPP: Private Gains, Public Costs", *Reality Check*, July 2011, http://www.realityofaid.org/country-outreach/downloadv2/49

306 Legislators in the US state of Pennsylvania, for example recently rejected a $12.8 billion turnpike concession sale. *The Deal* comments that the project's rejection "underscores how American communities, and entrenched interests, are not eager to just hand critical assets over to private hands".

See:

Tenorio, V. and Idzelis, C., "Can private equity play the infrastructure game?", *The Deal*, 3 April 2009, http://www.thedeal.com/newsweekly/features/can-private-equity-play-the-infrastructure-game.php

For other critiques of PPPs, see:

Whitfield, D., *Global Auction of Public Assets: Public sector alternatives to the infrastructure market and Public Private Partnerships*, Spokesman, 2010.

The Reality of Aid, "PPP: Private Gains, Public Costs", *Reality Check*, July 2011, http://www.realityofaid.org/country-outreach/downloadv2/49

307 The strategy outlined by HSBC for its Infrastructure Fund III is typical for many funds:

"The global infrastructure Fund aims to generate value principally through successfully managing new assets through their design, construction and early operating phases – typically referred to as Greenfield - and by enhancing existing infrastructure assets. It seeks to achieve capital gain from realisation of assets once they have completed construction and have a proven operating record."

See:

HSBC, "HSBC announces first closing of HSBC Infrastructure Fund III", 31 March 2010, http://www.assetmanagement.hsbc.com/uk/attachments/institutions/infrastructure.pdf

308 Infrastructure India, which describes itself as an "Isle of Man closed-ended investment company established to provide investors with the opportunity of investing in Indian infrastructure assets", has invested in the controversial Maheshwar Dam in Madhya Pradesh, India, which is part of the massive Narmada Valley Development Project. If completed, the Narmada scheme would result in 30 major, 135 medium and 3,000 small dams being built on the Narmada river and its tributaries.

Since its inception, the scheme has been the object of protests, both nationally and internationally.

The Maheshwar project is being developed by the Shri Maheshwar Hydro Power Corporation Ltd., a special purpose vehicle set up by S. Kumars, an Indian textile company with no previous experience in dam-building. S Kumars is now owned by Entegra, which is reported to be looking to use the "huge cashflows" expected from Maheshwar to "build its renewable energy Empire in years to come". The dam, which is 95 per cent complete, has provoked mass demonstrations. It is estimated that the dam will affect 100,000 people: critics charge that thousands have yet to receive adequate compensation or replacement land.

Although S Kumars won the concession to build and operate the dam in 1994, the project has been subject to constant delays. From 2000-2006, no work was undertaken on the project due to lack of finance after two banks (ABN-Amro and HypoVereinsbank) withdrew their backing. Three multinational companies (Bechtel Enterprises, PacGen and Siemens) have also walked away from the project following international protests. In 2010, Infrastructure India estimated that its investment in the Shri Maheshwar Hydro Power Corporation Ltd had increased in value by 30 per cent since 2008. In 2011, US-based financial services firm Guggenheim Partners was reported to have taken a 46% stake in Infrastructure India. Guggenheim Partners has more than $100 billion in assets under supervision.

See:

India Infrastructure Ltd, "Welcome to Infrastructure India", http://www.iiplc.com

International Rivers, "Maheshwar", http://www.internationalrivers.org/south-asia/india/maheshwar-dam

"Guggenheim Partners take 46% in AIM-listed infra india", *VCCircle*, 16 February 2011, http://www.moneycontrol.com/news/business/guggenheim-partners-takes-46aim-listed-infra-india_523689.html

309 The Pan African Infrastructure Development Fund (PAIDF) has reported that it is considering an investment in Grand Inga.

PAIDF closed its first round of capital raising in 2007 at $625million, solely from African investors. The targeted amount at final close is US$1bn and a second round of capital raising is underway. The fund has a 15 year lifespan, over which period it aims to raise $20 billion for investment in infrastructure.

PAIDF aims to create "a financing platform for infrastructure development that will accelerate Africa's growth". Sector targets are energy, telecommunication, transport, and water. Designed as a large-scale long-term fund, the PAIDF allows Harith, the fund manager, "time to build and develop each individual investment to optimise financial returns as well as obtain capital commitments from specific investors". The PAIDF aims to invest in Public Private Partnerships across the African continent.

See:

Harith, "Africa backs funds unity drive with cash", undated. http://harith.isdemo.co.za/press-releases/africa-fund-backs-unity-drive-with-cash/

Harith, "Signing ceremony of PAIF in Sandhurst at Sandton Johannesburg", undated, http://harith.isdemo.co.za/press-releases/signing-ceremony-of-paidf-in-sandhurst-at-sandton-johannesburg-south-africa/

Chuckun, V. S., "Using pension funds for infrastructure finance in Africa: the case of NEPAD projects", April 2010, https://scholar.sun.ac.za/bitstream/handle/10019.1/917/chuckun_pension_2010.pdf?sequence=1

Counterbalance, "RDC Grand Inga Dam is Conrad's Nightmare – the world's largest dam and development's heart of darkness", http://www.counterbalance-eib.org/component/option,com_datsogallery/Itemid,98/func,detail/id,128/

Lustgarten, A., *Conrad's Nightmare – the world's largest dam and development's heart of darkness*, 2009, http://www.counterbalance-eib.org/component/option,com_datsogallery/Itemid,98/file,200911GRANDINGADAM-DRC.pdf/func,download/

310 Miller, M, "Trillion Dollar Baby", *The Deal*, 18 June 2010, http://www.thedeal.com/magazine/ID/034781/featuresold/cover-stories/trillion-dollar-baby.php

311 Miller, M, "Trillion Dollar Baby", *The Deal*, 18 June 2010, http://www.thedeal.com/magazine/ID/034781/featuresold/cover-stories/trillion-dollar-baby.php

Others note a tendency, at least within the Indian market, "for even the bigger global PE [Private Equity] names to settle for smaller deal sizes" and to proceed through alliances "with the major business groups and promoters."

See:

Mackintosh, P., "KKR takes stake in Avantha Power", *Asian Venture Capital Journal*, 6 October 2010, http://www.avcj.com/avcj/news/1740655/kkr-takes-stake-avantha-power.

312 The offering, originally estimated to raise $3.5 billion, was 15 times over subscribed. Those ending up owning stock include some 484 foreign funds, 195 mutual funds, 44 insurance companies, and many banks.

See:

"Coal India IPO fetches mind-boggling Rs 2.36L crore", *Times of India*, 22 October 2010, http://articles.timesofindia.indiatimes.com/2010-10-22/india-business/28224726_1_coal-india-ipo-india-story-equity-capital

"Coal India IPO subscription mops $53 billion", http://trak.in/tags/business/2010/10/22/coal-india-ipo-subscription/

"Coal India IPO subscribed 15.28 times", *moneycontrol*, 21 October 2010, http://www.moneycontrol.com/news/ipo-issues-open/coal-india-ipo-subscribed-over-15-times_493113.html

Leggett, J., "Coal India IPO shows the mountain we have to climb", *The Guardian*, 9 November 2010, http://www.guardian.co.uk/sustainable-business/blog/coal-india-ipo-climate-change

313 3i Infrastructure Plc, "3i India Infrastructure Fund", http://www.3i-infrastructure.com/3i-india-infrastructure-fund.html

314 Adani Power Limited, "Red Herring Prospectus", 14 July 2009, p.xiii, http://www.capitalmarket.com/pub/dp/dp17808.pdf

315 Ernst & Young, "China: the new global leader in cleantech IPOs", http://www.ey.com/GL/en/Industries/Cleantech/Cleantech-matters--China--the-new-global-leader-in-cleantech-IPOs

Ernst & Young, "Global IPO Trends 2011", http://www.ey.com/GL/en/Services/Strategic-Growth-Markets/Global-IPO-trends-2011

316 "HRT Holders to sell up to 2.4 billion-Real stake in Auction", Reuters, 24 April 2011, http://www.gulfbase.com/site/interface/NewsArchiveDetails.aspx?n=174879

317 Highfields Capital Management describes itself as "a value-oriented investment management firm, which manages private investment funds for endowments, charitable and philanthropic foundations, pension funds and other institutional and private investors". Highfields' investment funds "have over $11 Billion in net capital invested worldwide in public and private companies across a wide variety of industries and security types".

See:

Highfields Capital Management, https://www.highfieldscapital.com/default.aspx

318 New York-based MSD Capital "engages in a broad range of investment activities and has the flexibility to invest in a wide variety of asset classes".

See:

MSD Capital, "About Us", http://www.msdcapital.com/about.htm

319 "Latest energy IPO in Brazil raises US$1.5 billion", *Latin Lawyer*, 26 October 2010, http://www.latinlawyer.com/news/article/41105/latest-energy-ipo-brazil-raises-us15-billion/

320 Kosmos Energy is backed by Blackstone Group and Warburg Pincus.

For details of the May 2011 IPO, see:

Kosmos Energy, "Kosmos Energy prices Initial Public Offering of Common Shares", 10 May 2011, http://investors.kosmosenergy.com/phoenix.zhtml?c=238878&p=irol-newsArticle&ID=1562339&highlight=

Kosmos Energy, "Kosmos Energy Closes Over-Allotment Option", 14 June 2011, http://investors.kosmosenergy.com/phoenix.zhtml?c=238878&p=irol-newsArticle&ID=1573838&highlight=

Kosmos Energy, *Annual Report*, 2011, http://kosmosenergy.com/annualreport/2011/corporate-info.html

321 Kosmos Energy, "A premier Oil & Gas Company", http://www.kosmosenergy.com/about.php

For details of Kosmos' exploration and exploitation activities, see:

Kosmos Energy, Investor Presentation, June 2012, http://media.corporate-ir.net/media_files/irol/23/238878/latestpresentation.pdf

322 Blackstone Group, “Private Equity Portfolio”, http://www.blackstone.com/our-businesses/aam/private-equity/portfolio?type=industries&value=Energy-Natural-Resources

323 Warburg Pincus, “Investments: Kosmos Energy Ltd”, http://www.warburgpincus.com/portfolio/ViewCompany,id,91.aspx

324 “Kosmos Energy Payoff”, *King of Capital*, 19 January 2011, http://king-of-capital.com/2011/01/19/kosmos-energy-payoff/

325 Patrick Knechti, investment director with SL Capital Partners, is quoted by the *Asian Venture Capital Journal* as saying: “We very nearly had excessive regulation in Europe. And while some of that has been lobbied away, there’s still a long way to go, and it remains a concern.”

See:

Asian Venture Capital Journal, *The 2011 Asian Fundraising Review*, Sample Pages, August 2011, http://www.asianfn.com/images/samples/fundraising_sample.pdf

326 Preqin, *The 2010 Preqin Infrastructure Review*, London, 2010, p.49.

In a *Pocket Guide to Infrastructure* (marked “not for circulation to the general public”), US investment bank Goldman Sachs predicts:

“The recent rapid economic development in China and India . . . makes them ripe for infrastructure opportunities. The Indian Department of Economic Affairs calculates that it needs to invest US$450bn in its infrastructure by 2012, proffering significant opportunities for private investors. . . Whilst the majority of infrastructure investors are currently from Europe and North America, this is set to change as the population and wealth of people in Asia and the rest of the world increase.”

See:

Preqin, “Infrastructure Spotlight”, February 2010, p.3, http://www.preqin.com/docs/newsletters/inf/Preqin_Infra_Spotlight_Feb2010.pdf.

Goldman Sachs Asset Management, *A Pocket Guide to Infrastructure*, 2010, available through: http://wwwqa.goldmansachs.com/gsam/uk/advisors/ideas/product/asset_classes_explained/index.print.html

327 “Investors shun emerging markets”, *Infrastructure Investor*, 9 July 2012, http://www.infrastructureinvestor.com/article.aspx?article=68260

328 Blackstone describes itself as a “global alternative investment manager and financial advisor”. It was founded in 1985 with a balance sheet of $400,000.It is now one of the world’s largest private equity firms and one of the first to have listed the shares of its management company on the stock exchange, having gone public in a 2007. The initial public offering raised $7 billion, including a $3 billion investment by China. Over the past 20 years, Blackstone has invested “more than $2.5 billion in more than 30 companies in the energy sector, including investments in oil and gas exploration and production, power, alternative energy and oilfield services”. Discussing the opportunities in the infrastructure sector, Blackstone states:

> “We believe that the significant demand for infrastructure investment – when combined with public sector budgetary pressures and the relatively limited supply of dedicated infrastructure investment capital will generate attractive investment opportunities for Blackstone.”

Cleantech is also a sector that Blackstone is actively exploring. In 2009, Blackstone established the firm’s first regional private equity fund in China – the Blackstone Zhonghua Development Investment Fund – which will invest in financial, transportation and industrial enterprises in the Shanghai Pudong New Area. Blackstone also owns 40 per cent of Patria Investments, a Brazilian private equity firm whose Patria Energia Fund has invested in windpower and small hydro. In

partnership with Promon SA, Patria also founded P2Brasil, a company that invests in oil and gas, water and sanitation, transportation, and power transmission and distribution. In 2007, Blackstone, India's Infrastructure Development Finance Co. Ltd (IDFC), Citigroup Inc. and India Infrastructure Finance Co. Ltd (IIFCL) announced plans to raise $5 billion to invest in infrastructure projects in India. However, the firm pulled out of the deal in 2008, after it was reportedly offered too small a slice of the equity in the fund.

See:

Blackstone, "History", http://www.blackstone.com/cps/rde/xchg/bxcom/hs/firm_history.htm

Blackstone, "Portfolio", http://www.blackstone.com/cps/rde/xchg/bxcom/hs/businesses_aam_privateequity_portfolio.htm?chunk=8&chunksize=

Blackstone, "Infrastructure", http://www.blackstone.com/cps/rde/xchg/bxcom/hs/businesses_aam_newinitiatives_infrastructure.htm

Blackstone, "New Initiatives: Clean Technology", http://www.blackstone.com/cps/rde/xchg/bxcom/hs/businesses_aam_newinitiatives_cleantech.htm

329 "Blackstone plans to double India investments", *indiape*, 18 August 2010, http://www.indiape.com/blog/_archives/2010/8/18/4607878.html

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Carolyn Campbell, Managing Director and General Counsel of the private equity fund Emerging Capital Partners states: "Africa represents a colossal investment opportunity. Containing 23 percent of the world's landmass and nearly one billion people, the continent has exceeded world average growth for the past eight years and is now the fastest growing region in the world. Taken as a whole, African GDP is sixth in the world and should pass Germany in the next few years. Yet the region remains overlooked in terms of investment opportunities such that the supply of capital relative to demand is tilted in favour of investors; as a result, investments can be structured to mitigate risks."

Emerging Capital Partners' investments in Nigeria have been subject of considerable controversy, after it was revealed that one of its funds had invested in companies alleged to be money laundering fronts for money said to have been corruptly obtained by James Ibori, the ex-Governor of Nigeria's Delta State, who was recently convicted in the UK on money-laundering related charges. ECP denies any wrongdoing.

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Emerging Capital Partners' investments in Nigeria have been the subject of considerable controversy, after it was revealed that one of its funds had invested in companies alleged to be money laundering fronts for money said to have been corruptly obtained by James Ibori, the ex-Governor of Nigeria's Delta State, who was recently convicted in the UK on money-laundering related charges. ECP denies any wrongdoing.

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"• Many of Africa's 48 economies rebounding from the crisis faster than the rest of the world
• Africa has at least 10% of global oil reserves
• GDP growth at 5.5% - 6%
• Consumer spending rising at more than twice the rate of developed countries
• Africa accounts for 5% of global direct investment flows
• The World Bank estimates FDI into sub-Saharan Africa to reach $40.8bn in 2011, up from $32bn last year"

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356 As M.K Sinha, President and CEO of India's IDFC Project Equity Company, relates when interviewed by the *Asian Venture Capital Journal* in 2010:

"You've got road companies being built up over time, power companies too. The same is true with a variety of airport-linked businesses, and their counterparts that aim to build or operate ports. This is the crux of a new wealth creation phase, and it's evidenced by the emergence of companies like Mundra Ports Company, the largest private sector port in India, located in a special economic zone; GMR Infrastructure; and GVK Power & Infrastructure Ltd. These are companies that didn't exist five years ago."

See:

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See:

"Possibilities", http://www.ilfsinvestmentmanagers.com/

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See:

Abraaj Capita, "About us", http://www.abraaj.com/content/about-us

"Abraaj Capital announces first closing of Infrastructure and Growth Capital Fund with commitments of US$500 million", *albawaba*, 4 February 2007, http://www.albawaba.com/business/abraaj-capital-announces-first-closing-infrastructure-and-growth-capital-fund-commitments-u

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See:

Sabre Partners, "SA1", http://www.sabre-partners.com/investments.php?page=our-ventures-business#ril

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See:

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365 IDFC Project Equity has injected INR3.5 billion ($70 million; €51 million) into power plant operator Essar Power, part funding the operator's expansion plans from a dedicated India Infra Fund that it manages. Essar Power operates three power plants, with another four under construction. When completed over the next three years, the company's generating capacity will increase more than fivefold to about 6,000 megawatts."What we particularly liked about this investment is our partner's credible and measured project development and execution plans," said MK Sinha, IDFC Project Equity's president and chief executive. This is India Infrastructure Fund's first investment. It held a first close on $875 million in June 2008 and is targeting $5

billion in equity and debt for infrastructure development in India, said a spokesman. As a joint venture between Citi, the Indian government and IDFC, the fund invests broadly in energy, transport infrastructure and telecoms infrastructure.

366 SEW Infrastructure Limited is an Indian engineering construction company with a focus on power generation (including dams and thermal plants), water projects, and construction of roads and bridges. The company is ranked as among the top five companies in the Indian hydropower and irrigation sectors.

See:

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See:

Jacob Ballas, "Investment Strategy", http://www.jbindia.co.in/investmentstrategy.html

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See:

Citi Venture Capital International, Citi Centure Capital International, "History", http://www.cvci.citi.com/Pages/Public/History.htm

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372 Few of the private equity funds researched by The Corner House disclose their full portfolio of investments. At best, the majority highlight "star" performers, leaving the less successful ones unreported, whilst some give no details at all, except to investors.

373 Cordiant Capital is invested in Pan American Energy – a joint venture between Bridas Energy Holdings Limited (BEH) and CNOOC International Limited, the Chinese oil company. Pan American Energy is the second-largest oil and gas producer in Argentina. The IFC participated with Cordiant in a $153 million financing agreement to fund the company's $700 million expansion program in the Cerro Dragon, Piedra Clavada and Koluel Kaike blocks located within the Golfo San Jorge basin.

See:

IFC, "IFC Supports Argentina's Oil and Gas Sector, Helping Meet Growing Energy Needs", 2 September 2009, available at http://www.cordiantcap.com/press_release/ifc-supports-argentina_s-oil-and-gas-sector-helping-meet-growing-energy-needs/

Pan American Energy, "Home", http://www.panamericanenergy.com/

374 BlackRock Latin American Investment Trust plc has invested in Petrobras, the Brazilian oil company that is currently opening up deep water wells off the Brazilian coast, and OGX Petroleo, part of the EBX Group, which operates both onshore and offshore drilling activities.

Darby Emerging Markets Fund has invested in PetroSantander Inc, a US-based company with oil and gas operations in Brazil.

First Reserve has invested in Barra Energia Petroleo e Gas, an independent oil and gas exploration, development and production company based in Rio de Janeiro, Brazil. The company's principal focus is finding, developing and producing hydrocarbon resources in onshore and offshore basins of Brazil. First Reserve is reported to have invested $500 million through its First Reserve Fund XII in 2010.

See:

BlackRock, "BlackRock Latin American Investment Trust Plc", http://www.blackrock.co.uk/Intermediaries/FundCentre/InvestmentTrusts/Prices/index.htm

Darby Overseas Investments, "Investments – Darby Emerging Markets Fund", http://www.darbyoverseas.com/darby/index.jsp?url=/investments/list_alph/funds/emerging_markets_fund

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375 Citi Venture Capital International has invested in Transportadora de Gas del Internacional SA – Colombia's largest transporter of natural gas. The company serves 70 per cent of the population of Colombia and has "a 3,679 kilometer pipeline network with access to Colombia's two largest gas basins representing over 90 per cent of the country's proven reserves".

Darby Emerging Markets Fund has invested in PetroSantander Inc, a US-based company with oil and gas operations in the United States, Colombia and Brazil. The company operates three oil and gas producing fields in the Las Monas Block in Colombia.

See:

Citi Venture Capital International, "Portfolio", http://www.cvci.citi.com/Pages/Public/PortfolioPage.aspx

Darby Overseas Investments, "Investments – Darby Emerging Markets Fund", http://www.darbyoverseas.com/darby/index.jsp?url=/investments/list_alph/funds/emerging_markets_fund

376 EFG Hermes Private Equity has invested in Sahara North Bahariya Ltd, which is exploring for oil in Egypt.

See:

EFG Hermes, "EFG Capital Partners III – Current Investments", http://www.efg-hermes.com/english/Services.aspx?PageID=263&expandable=3&li=5719

377 Blackstone and Warburg Pincus have invested in Kosmos Energy, an oil and gas exploration company that is "conducting ongoing oil and gas exploration, appraisal and development activities in West Africa, including first-phase development of the Jubilee Field". Kosmos "expects to be an active driller in Ghana". In 2009, the World Bank's International Finance Corporation approved a $100 million loan to Kosmos Energy.

See:

Blackstone, "Portfolio", http://www.blackstone.com/cps/rde/xchg/bxcom/hs/businesses_aam_privateequity_portfolio.htm?chunk=8&chunksize=

Warburg Pincus, "Kosmos Energy", http://www.warburgpincus.com/portfolio/ViewCompany,id,91.aspx

378 3i has invested in Pearl Energy, an independent oil and gas company with exploration and production (E&P) activities focused exclusively in South East Asia. According to 3i, "Pearl has assembled a portfolio of exploration, development and production assets in 10 contract areas with a total gross acreage of approximately 34,500 sq km in Indonesia, the Philippines and Thailand."

Actis and Pine Brook Road Partners have invested in Asia Pacific Exploration Consolidated, an oil and gas "exploration-driven company that is focused on finding over 100 million barrels of oil equivalent in Southeast Asia", with operations in Indonesia, Thailand, Malaysia, and Vietnam.

First Reserve has invested in KrisEnergy, a Singapore "oil and gas company aimed at building a portfolio of exploration, development and production assets in Asia". The company has operation in Vietnam, Thailand, Cambodia and Indonesia. First Reserve invested $500 million in 2009 through its First Reserve Fund XII.

See:

3i, "Pearl Energy", http://www.3i.com/portfolio/companies/pearl-energy.html

"Actis invests in Asia Pacific Exploration Consolidated LP (APEC)", press release, 26 October 2007, http://www.act.is/PressRelease/55

First Reserve Capital, "First Reserve Corporation Makes $500 Million Equity Commitment to Singapore-based KrisEnergy", 14 September 2009, http://www.firstreserve.com/go.asp?Go=!SiteStation&x=TPLGen&ResType=Page&ResID=2434&TPL=NewsPageTemplate.htm

379 African Capital Alliance has invested in First Hydrocarbon Nigeria Limited (FHN), an upstream oil and gas company "engaged in the acquisition and development of substantial oil and gas assets in Nigeria".

The Canadian Investment Fund for Africa has invested in Gulf of Guinea Energy Limited (GOGE), a British Virgin Island-registered upstream oil and gas company focused on Nigeria but with ambition to expand to West Africa. GOGE has "rights to a 40 per cent interest in the undeveloped onshore Uquo field to the east of the Niger Delta".

See:

African Capital Alliance, "CAPE III invests in First Hydrocarbon", http://www.aca-web.com/index.php?option=com_content&view=article&id=144:cape-iii-invests-in-first-hydrocarbon-fhn&catid=2:latest-news

Canadian Investment Fund for Africa, "Portfolio Summaries", http://www.cifafund.ca/en/portfolio.html

380 3i has invested in Salamander Energy, a UK oil and gas exploration and production company focused on South East Asia. The company's flotation on the London Stock Exchange in 2006 raised $200m for its operations. In 2009, the World Bank's International Finance Corporation (IFC) approved "a project level equity interest" in a number of Salamander's operations in Laos and Thailand.

See:

"Salamander Energy", http://www.3i.com/portfolio/companies/salamander-energy.html

381 Abraaj Capital has invested in Byco (formerly Bosicor Group) – an oil and gas company that operates across the oil sector in Pakistan. The company is in the process of relocating a mothballed refinery from the UK for use in Pakistan.

Citadel Capital has invested in Egypt's National Oil Production Company (NOPC), a Cairo-based oil and gas company, which owns Rally Energy. The company has concessions in the Gulf of Suez region and in central Pakistan's Punjab province.

The Carlyle Group has invested in 4Gas – a Dutch company that is developing the Marshall liquid natural gas terminal in Pakistan.

See:

Abraaj Capital, "Byco", http://www.abraaj.com/english/details.aspx?mid=426

Citadel Capital, "Creating MENA leaders", http://www.citadelcapital.com/portfolio/current-investments/

The Carlyle Group, "4Gas Holding B.V.", http://www.carlyle.com/our-business/portfolio-of-investments/4gas-holding-bv

382 Citadel Capital has invested in Nile Valley Petroleum Limited (NVPL), an oil company with interests in three concessions in Sudan, which it is currently exploring.

See:

Citadel Capital, "Creating MENA leaders", http://www.citadelcapital.com/portfolio/current-investments/

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385 Canadian Investment Fund for Africa, "Portfolio Summaries", http://www.cifafund.ca/en/portfolio.html

386 Kosmos Energy, Ghana, http://www.kosmosenergy.com/operations-ghana.php

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391 Conduit Capital, "Kuntur", http://www.conduitcap.com/kuntur.htm

392 "Companies propose pipelines in Southern Peru", 10 April 2008, http://uk.reuters.com/article/2008/04/10/peru-energy-idUKN1048397220080410

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Griffith, T, "Holding the IFC and IDB to account of Camisea II", September 2007, http://amazonwatch.org/documents/camiseaII_sept2007_web.pdf

394 Environmental Defense, "Environmental Defense Commends Historic 'No' Vote On Camisea Project", 28 August 2003, http://www.edf.org/pressrelease.cfm?contentID=2969

395 PWC, *On the Road Again? Global Mining 2011 Deals Review and 2012 Outlook*, March 2012, pp.36-36, http://www.pwc.com/gx/en/mining/publications/on-the-road-again-global-mining-2011-deals-review-and-2012-outlook.jhtml

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399 ICICI, "Sainik Mining and Allied Services Limited", http://www.iciciventure.com/business_portfolio_details2.php?id=18&KeepThis=true&TB_iframe=true&width=500&height=396.75

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401 China Shenhua Energy, "Business Overview", http://www.csec.com/htmlen/business/index_business.html

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See:

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“Concerns over alleged corruption in CDC-backed companies in Nigeria – Memorandum to the Secretary of State for International Development”, The Corner House et al, 28 June 2010, http://www.thecornerhouse.org.uk/resource/concerns-over-alleged-corruption-cdc-backed-companies-nigeria

427 “LPs push managers to embrace ESG”, *Private Equity International*, 2 March 2011, http://www.privateequityinternational.com/article.aspx?article=59847

428 Asian Development Bank, “Strengthening the Use of Country Safeguard Systems”, November 2010, http://www2.adb.org/Documents/Produced-under-TA/44140/44140-01-reg-dpta-05.pdf

429 Norfund is forbidden from investing in funds that are domiciled in tax havens that appear on OECD’s “grey list” and that do not have tax agreements with Norway. A recent study undertaken for Norad, Norway’s bilateral aid agency, confirms that the policy has resulted in Norfund declining to participate in one project in Tanzania and “a re-routing of one fund to Luxembourg from Mauritius”.

See:

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430 In the UK, wholesale electricity prices initially fell following privatisation of the energy generating utilities, but the price falls were not the result of increased efficiency. Instead, they resulted largely from lower fuel costs, inherited excess capacity (which allowed companies to “sweat” existing assets and avoid investing in new ones), and a massive windfall subsidy arising from the fire sale prices at which the previously state-owned power sector assets were sold (typically one-third of their actual prices). Moreover, the price falls were not fully passed on to domestic consumers: those who won out were the shareholders of the companies and the largest industrial consumers, who used their bargaining power to negotiate special deals with the generators entirely outside of the newly-formed wholesale markets.

430 Pollitt, M., “Keep your hands off the market, Mr Miliband”, *Parliamentary Brief*, 24 March 2009, http://www.parliamentarybrief.com/2009/03/keep-your-hands-off-the-markets-mr-miliband#all

Pollitt, an advocate of energy markets, writes:

"Electricity and gas prices fell substantially in real terms between 1990 and 2003 (reducing the number of fuel poor). However since 2003, the prices of both types of energy have risen substantially (albeit with some fluctuation). As of mid-2008 average household bills for electricity and gas were round 40 and 60 per cent more than in 2003 in real terms."

430 Helm, D., "Introduction" *in* Helm, D., *The New Energy Paradigm*, Oxford University Press, 2007, p.3.

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Jewell, K., "Manipulated, Misled, Ignored, Abused, Residential Consumer Experience with Electric Deregulation in the United Kingdom", Consumers Union Program for Economic Justice and Public Services International Research Unit, University of Greenwich, 2003, http://129.3.20.41/eps/pe/papers/0401/0401005.pdf

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Hall, D., Thomas, S., Corral, V., "Global experience with electricity liberalization", 2009, http://www.psiru.org/sites/default/files/2009-12-E-Indon.doc

Thomas notes:

"In a competitive market, the lowest prices go to those that can negotiate hardest. Making the electricity market competitive effectively requires small consumers to be as tough negotiators as an aluminium smelter or a chemicals factory. If they are not, the companies will offer their best prices to large consumers and they will make their profits from domestic consumers."

Jewell notes:

"Commercial and industrial uses have been able to use volume contracts and aggressive negotiating to capture the benefits of dropping wholesale prices."

431 Hall, D., Thomas, S., Corral, V., "Global experience with electricity liberalization", 2009, http://www.psiru.org/sites/default/files/2009-12-E-Indon.doc

Jewell, K., "Manipulated, Misled, Ignored, Abused, Residential Consumer Experience with Electric Deregulation in the United Kingdom", Consumers Union Program for Economic Justice and Public Services International Research Unit, University of Greenwich, 2003, http://129.3.20.41/eps/pe/papers/0401/0401005.pdf

Jewell cites a 2003 National Audit report: "a report from the UK's National Audit Office in 2003 indicated that retail costs had increased 20-40 per cent due to the requirements of the competitive market structures".

432 Hall, D., Thomas, S., Corral, V., "Global experience with electricity liberalization", 2009, http://www.psiru.org/sites/default/files/2009-12-E-Indon.doc

The authors cite a 2007 study by Fiorio and Florio which concluded: "public ownership tends to decrease prices [and] vertical disintegration tends to increase prices".

See:

Fiorio, C.V. and Florio, M., "The Electricity Industry Reform Paradigm in the European Union: Testing the Impact on Consumers", 2007, http://www.privatizationbarometer.net/upp/uppdoc/D6.2_2.pdf

433 Anderson, J.A., " Electricity Restructuring: A Review of Efforts around the World and the Consumer Response", *The Electricity Journal*, 22(3), 2009, pp.70-86. Available at: http://www.sciencedirect.com/science/article/B6VSS-4VY16BV-2/2/c6a2f7d764e06203a8ec658abb98b75d

Quoted in Hall, D., Thomas, S., Corral, V., "Global experience with electricity liberalization", 2009, http://www.psiru.org/sites/default/files/2009-12-E-Indon.doc

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J-C. Barthélemy, C. Kauffmann, M-A.Valfort and L. Wegner, *Privatisation in Sub-Saharan Africa: Where Do We Stand?*, Organisation for Economic Cooperation and Development, Paris, 2004.

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439 Hall, D., "Electrifying Africa", June 2007, http://www.psiru.org/sites/default/files/2007-01-E-Africa.doc

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447 "Turkey implements feed in tariff, Spain cuts", *Renewable Energy Focus*, 7 January 2011, http://www.renewableenergyfocus.com/view/14994/turkey-implements-feedin-tariff-spain-cuts/

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See:

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See:

"Infra's own sovereign debt crisis", *Infrastructure Investor*, 18 August 2011, http://www.infrastructureinvestor.com/Article.aspx?article=62679

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