



G20 Themes #5

Infrastructure investment and Public Private Partnerships

Over the next 15 years, we may be looking at up to \$90 trillion in global infrastructure investment, mostly in emerging and developing economies that will see a massive increase in urbanization. Just think about the risk if this investment is done in the wrong way – for example, if it locks in carbon-intensive energy and transportation structures in these mega-cities. This could radically affect the quality of life on the planet – for all of us.¹ – Christine Lagarde, Managing Director, International Monetary Fund

1. G20 Goals

The G20 believes that a large stimulus of infrastructure investment is a crucial means to restoring global growth and creating jobs.

The Alliance. At the 2016 Chinese G20 Summit, the G20 launched a [Global Infrastructure Connectivity Alliance](#) (the Alliance) to strengthen and link the infrastructure master plans in the regions and continents of the world, particularly in four sectors: energy, transport, water, and information and communications technology (ICT). Each regional master plan has its own funds, such as the European Fund for Strategic Investments. To achieve its goals, the Alliance promotes large (billion, or trillion) dollar projects which are financed, built and operated through public private partnerships (PPPs). At the Summit, the multilateral development banks (MDBs) issued a [declaration](#) to support this investment with a minimum of \$350 billion in 2016-2018.

Desired volume of investment. The magnitude of the G20's infrastructure effort is mind-boggling insofar as it would more than double current annual levels of global infrastructure investment to about \$6 trillion or roughly \$90 trillion over 15 years. In the current environment, this may be a pipedream as investment



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has declined sharply. Nevertheless, there is no question that, when done right, infrastructure development meets crucial needs. For instance, the G20 claims that by developing and upgrading resilient infrastructure, it could help achieve over half of the Sustainable Development Goals (SDGs) set forth by the 2030 Agenda for Sustainable Development, adopted by the United Nations in 2015.²

Yet, there is a clash between pursuing the public good on the one hand, and pursuing the profit motive, on the other. The magnitude of potential profits is described by the [MDBs' report](#) stating, "reaching under-served populations in financially sustainable ways at the 'base of the pyramid,' represents an annual \$5 trillion market ... with over 4.5 billion people." (p. 16)

Infrastructure and sustainable development and climate goals. Will the investment be done in a sustainable manner? Section 2 describes concerns with regard to whether the Alliance will help achieve or defeat efforts to attain the SDGs and the pledge of signatories to the Paris Agreement on Climate Change to limit global warming to 2 degrees Celsius (or better yet, 1.5 degrees). The G20 countries are responsible for 75% of global greenhouse gas emissions and infrastructure accounts for 60% of total emissions, so a

G20 commitment to wean itself from fossil fuels is needed to prevent infrastructure dreams from turning to nightmares.

Focus of German G20 Presidency. While the German G20 Presidency will support the roll-out of the Alliance, as described above, it will focus primarily on forging investment compacts with African nations, principally to expand infrastructure development. With a domestic election looming, it is unclear whether a large German stimulus package for Africa will be in the offing.

G20 Objectives: A New Economic Paradigm. The G20's infrastructure plans involve building a new economic paradigm that is a departure from what we have known in the post-World War II era. The MDBs describe the new paradigm in their 2015 report, "[From Billions to Trillions](#)".



Three of the G20 transformational objectives in achieving this overhaul and creating a new paradigm follow:

1) The use of public money (e.g., taxes, pensions, user fees for infrastructure services, guarantees) to leverage or catalyze private sector investment, particularly long-term institutional investment (e.g., pension and insurance funds, sovereign wealth funds, private equity funds). The goal of attracting long-term institutional investors, which hold over \$100 trillion in savings, is a driving force of the G20's new paradigm. Such investors, including pension funds, are earning almost nothing on their government bond holdings (e.g., U.S. Treasuries) and need secure revenue streams from infrastructure holdings to meet their obligations (for instance, the growing numbers of aging pensioners, especially in the G7 countries). Pooled vehicles (or co-investment platforms) will finance portfolios of public private partnerships (PPPs), especially in social and economic infrastructure, to facilitate investment and trading these assets.

2) The commitment to build "pipelines" of "bankable" projects, with an emphasis on megaprojects which are financed and operated through public private partnerships (PPPs). The G20 claims that there is no shortage of investment finance, but rather a lack of bankable projects. Since the G20 member countries own or control the major national, regional, and multilateral banks, it is well-positioned to expand and deploy the resources of these banks for purposes such as equity investment and risk guarantees. Since 2010, the G20 has worked with development banks in Africa and Asia, in particular, to strengthen existing infrastructure project preparation facilities (PPFs) to fill the "pipelines" with megaprojects.³

3) Improving mechanisms to quickly replicate PPPs. First, the MDBs are renewing efforts to standardize clauses in PPP contracts, information disclosure requirements, procurement, risk mitigation, etc.⁴ Second, countries are updating their legal and financial regulations (e.g., land acquisition; investor protections) to attract private investment. The financing structure of PPPs is increasingly complex, involving a consortium of private and public financial institutions that pool and coordinate use of their capital. To give an idea of its size, a cross-border megaproject may involve some 500 subprojects as well as legal and regulatory agencies in multiple countries. A special purpose vehicle (SPV) may coordinate not only financing but also project design, construction, and operation.

2. Assessment of the G20 Approach to Infrastructure Investment

If the new paradigm is to be sustainable, the Alliance and the vast number of institutions with which it works require a dramatic correction in their vision and trajectory. Below, implications of the G20's direction with regard to infrastructure development are described, specifically with regard to growth, carbon-intensity, geopolitics, megaprojects, corruption, and PPPs (capacity to administer PPPs; additionality, economic and social impacts; and pooled funds).

Growth. The G20 Alliance believes that, by strengthening and linking infrastructure master plans, the demand for goods and services will increase and

growth rates will rise. This should not be automatically assumed. Scholars at Oxford University's Saïd School of Business examined China's boom in infrastructure, observing outcomes of 95 projects built between 1984 and 2008. They found only 28 per cent — i.e. less than a third of their sample — could be considered genuinely economically productive. Indeed, there was a correlation between the investment boom and the rise in debt and economic fragility. Their conclusion was that "The question of whether infrastructure investment leads to economic growth must be answered in the negative."⁵

Carbon Intensity: Reliance on Fossil fuels. If even a fraction of the anticipated \$90 trillion is invested in infrastructure over the next 15 years, it could have a decisive bearing on whether the SDGs and efforts to

curb global warming succeed or fail. If the next wave of infrastructure (e.g., energy, transportation) were to lock-in carbon-intensive technology, efforts to curb global warming would be doomed. But how can

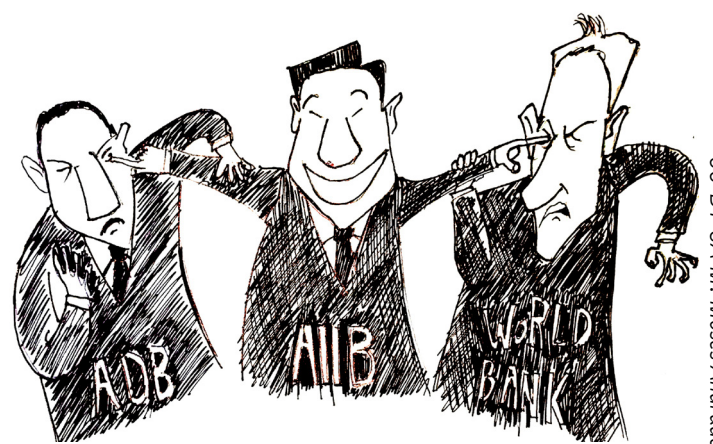
infrastructure development pivot from fossil fuel to renewable energies when, at present, more than two-third of the world's electricity and 80 percent of world primary energy supply are dependent on fossil fuels? This is the big question.

The [Leaders' Communiqué of the 2016 Chinese G20 Summit](#) is not encouraging; it calls for diversifying energy sources and especially relying on natural gas (Para. 24). Meanwhile, only glacial progress has been made to fulfill an initial 2009 pledge to eliminate fossil fuel subsidies. A 2015 IMF Working Paper projects the cost of direct and indirect fossil fuel subsidies (especially for coal consumption) at \$5.3 trillion.⁶ The expansion of renewable energies is an uphill battle while fossil fuels receive such vast subsidies.

Notwithstanding its allegiance to fossil fuels, the 2016 G20 Communiqué calls for "fostering more effective

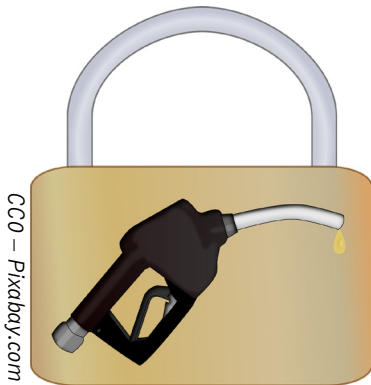
and inclusive global energy architecture... and shaping an affordable, reliable, sustainable and low greenhouse gas (GHG) emissions energy future..." (Para. 23). It takes steps in this direction by embracing voluntary options to "enhance the ability of the financial system to mobilize private capital for green investment" as presented in the G20 Green Finance Synthesis Report of the G20 Green Finance Study Group.⁷ It also has an array of voluntary efforts to improve [energy access](#), expand [renewable energy](#), and boost [energy efficiency](#) (see Para. 21).⁸

Geopolitical Motives. The rise of new institutions, such as a new \$100 billion China-led Asian Infrastructure Investment Bank (AIIB), are challenging the hegemony of the Bretton Woods system established in the aftermath of World War II. In reaction, there is intense collaboration among Western-led international financial institutions, particularly around financing infrastructure PPPs. They are attempting to reassert hegemony since, between 2000 and 2014, when world GDP more than doubled to \$75 trillion, the G7's share was slashed from 65% to 45%.⁹



As President, Mr. Trump could likely join the AIIB and put more power behind not only the consensus on mega-PPPs, but also the G20's position in support of all energy sources.

Megaprojects. Since the G20 is launching a new economic paradigm to massively scale up infrastructure, there needs to be evidence that it will succeed. For instance, there should be evidence that portfolios of mega-PPPs in energy, transport and water sectors would reap economic, social and environmental benefits.



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To the contrary, authoritative studies show that 9 out of 10 megaprojects are delayed and run over budget, while producing a shortfall of expected benefits. They are also subject to the “survival of the unfittest,” with the worst projects getting built, instead of the best.¹⁰

Corruption in Infrastructure. The Construction Sector Transparency Initiative (CoST) promotes transparency and accountability in construction in its 15 participating nations. It states that the value of global construction output is expected to increase by \$8 trillion to reach \$17.5 trillion per year by 2030. CoST shows that 10% to 30% of this total could be lost through corruption and a similar amount could be lost through mismanagement and inefficiency. According to CoST, “This means that by 2030, unless measures are introduced that effectively improve this situation, close to \$6 trillion could be lost annually through corruption, mismanagement and inefficiency.”¹¹ Transparency International promotes [minimum standards in public contracting](#) to control corruption.

Public Private Partnerships (PPPs)

Capacity for PPPs? The *Economist Intelligence Unit*, in collaboration with several banks, measures the readiness and capacity of countries around the world to implement infrastructure PPPs. In its evaluations of countries in [Africa](#) and in the [Asia-Pacific region](#), it found very few countries with sufficient capacity.

“Additionality”. Do private partners in PPPs contribute to financing of infrastructure? The cost of financing is higher for PPPs than for financing public sector works; governments borrow at a lower rate than the private sector.¹² However, government officials with tight budgets often choose PPPs rather than public works because:

- Officials believe that private firms will bring additional finance to infrastructure projects. But an [evaluation of World Bank-financed PPPs](#) finds that “PPPs generally do not provide additional resources to the public sector.” Antonio Estache found that the potential short term fiscal profits from large scale [PPPs] are not always sufficient to offset the long-term additional costs emerging from contract renegotiations.¹³ The IMF documents the stunning

benefits to private firms of renegotiating PPP contracts.¹⁴

- Government liabilities for PPPs appear “off-budget”, so governments have the illusion that they have more fiscal space than they actually do. However, fiscal liabilities can rise sharply if risks materialize (e.g., relating to the level of demand for infrastructure services, shortfall in fee collection, delays in acquiring land or in construction schedules, cost escalation of foreign inputs). The role of PPPs in Portugal’s 2011 financial collapse is instructive. By 2014, liabilities for state-owned enterprises and PPPs (mainly for roads and health care), which represented 15 percent of GDP, were absorbed into the government’s budget.¹⁵

Economic and social impacts

- An [evaluation](#) of PPP operations over 10 years by the Independent Evaluation Group of the World Bank Group shows that results (other than profitability) from 128 PPPs are largely unknown. Moreover, the evaluators found that “Fiscal implications would go unrecorded as well as affordability issues” and that “contingent liabilities are rarely quantified at the project level.” (p. 40)
- Based on 20 years of PPP data, Antonio Estache reports that: “there is no clear evidence that [the PPP] has helped improve the overall performance of the [road] sector significantly in a lasting way.” With regard to water and sanitation, “The really bad news from a poverty perspective is that providing access to the poor has proven to be not good enough. What is needed is affordable access... Affordability is indeed an essential dimension of the fight against poverty. And this is often not something commercial lenders are trained to think about.”¹⁶



According to a [report](#) by the London School of Economics, PPPs “are not regarded as an appropriate instrument for [information technology](#) projects, or

where social concerns place a constraint on the user charges that might make a project interesting for the private sector” (emphasis added). (p. 32)

Pooled Vehicles. Levels of investment are declining. But, the G20’s hope is that, globally, so many countries will attract new investors (especially long-term institutional investors, such as pension funds) that the number of PPPs will skyrocket. Investors will create portfolios of PPPs which, then, will produce a secure revenue stream for long-term institutional investors over a long time horizon (many decades). However, the rules that govern institutional investors — such as fiduciary duty, stewardship — generally view government rules to protect the public interest (e.g., consumer protection) as a risk to investor protection.¹⁷ In a worst case scenario these vehicles can create vast inequalities as they could privatize gain and socialize loss on a massive scale.

3. Future Directions for the G20

Infrastructure and Growth. The Alliance is predicated on the belief that, by strengthening and linking infrastructure master plans, the demand for goods and services will increase. This is a hypothesis that should be tested, because new large-scale projects could go bankrupt or get bailed out. (See the China case, above.) Also, infrastructure may not pay for itself where there are not enough buyers for traded commodities due to low demand, or if the low prices for the commodities being sold do not produce enough revenue for the enterprises and countries that are selling them.

Emission Reduction Plan. Every national infrastructure plan should demonstrate how it will achieve the Intended Nationally Determined Contributions (INDCs) to the reduction of greenhouse gas emissions. Every regional master plan for infrastructure should also publish its emission reduction plan and show an escalation of renewable energies in conjunction with the elimination of fossil fuel subsidies.

Safeguards. Upstream, especially in project selection, design and construction, greater weight should be given to the social and environmental impacts of projects. Downstream, during implementation, there is a strong

trend toward more lenient environmental and social standards and their enforcement. (This is often cited as one of the reasons for the attractiveness of South-South financing, the share of which is increasing globally.)¹⁸ This trend should be reversed through a systematic effort to identify the range of benefits that safeguards can help ensure.

Fiscal Risks. The IMF’s [PPP Fiscal Risk Assessment Model \(PFRAM\)](#) should be widely and repeatedly tested with the engagement of many stakeholders.

Scale. The G20 should relinquish its “bigger is better” project philosophy; countries will find that “appropriate scale” infrastructure is more likely to pay for itself. Importantly, when countries finance multiple, mega-infrastructure projects, there is likely to be a shortfall in financing for more sustainable, decentralized and democratically-managed infrastructure or other budget priorities (e.g., social protection, health care).

PPP Bias. The widespread proliferation of PPPs without more evidence of their success in economic, social and environmental terms is inappropriate, particularly since so many countries lack the capacity to manage them. Meanwhile, “best practice” in PPPs should give more weight to citizens’ benefits than to the comfort provided to investors. The [OECD’s Public Governance of PPPs](#) could be a foundation to build upon.

Mainstreaming Sustainable Development. The G20 should revise its guidelines and principles pertaining to infrastructure financing, PPPs, and investment (including long-term institutional investment) in order to incorporate the principles of the 2030 Agenda on Sustainable Development. At present, such social and environmental principles are secondary and optional, if they appear at all.

Standardization. The standardization of PPP projects, including model contract clauses, procurement systems, and disclosure requirements, should be opened to longer and more in-depth consultation with stakeholders. At



present, this effort shows a greater concern with providing comfort to investors than protecting the rights of citizens.

World leaders and lenders appear relatively oblivious to the costly lessons of the past. The G20 needs to face the risk that – unless curbed – its policies could quickly lead the world to a point of irreversible climate change and a situation in which the quest for profit will

undermine the public good. In addition, the scale of the infrastructure and PPP initiative championed by the G20's national and multilateral banks could privatize gains and socialize losses on a massive scale. The G20 should take steps to ensure that this scenario, which can increase levels of inequality and undermine democracy, does not unfold. In this way, the G20 can uphold the rights and livelihoods of the world community.

¹ Christine Lagarde, Managing Director, International Monetary Fund, "The Role of Emerging Markets in a New Global Partnership for Growth" at University of Maryland, February 4 2016. She refers to findings of the Global Commission on the Economy and Climate (GCEC), Better Growth, Better Climate: The New Climate Economy Report, 2014, available at: https://www.unilever.com/Images/better-growth-better-climate-new-climate-economy-global-report-september-2014_tcm244-425167_en.pdf

² See G20 Action Plan on the 2030 Agenda for Sustainable Development, available at: <http://g20.org/English/Documents/Current/201609/P020160908661601548463.pdf>

³ Caisse de dépôt et placement du Québec, which administers more than \$250bn in pension fund assets has cut out the middle man to prepare infrastructure projects itself. After the government defines the policy initiative (e.g., public transport), CDPQ plans and executes the project. See: "Infrastructure: Bridging the Gap" Financial Times, November 9, 2015.

⁴ Public Private Partnership in Infrastructure Resource Center (PPPIRC) of the World Bank Group: PPP units around the world, available here: <https://ppp.worldbank.org/public-private-partnership/overview/international-ppp-units>

⁵ Atif Ansar, Bent Flyvbjerg, Aleander Budzier and Daniel Lunn, Does Infrastructure Investment Lead to Economic Growth or Economic Fragility? Evidence from China, p. 26, September 2016, available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2834326

⁶ David Coady, Ian Parry, Louis Sears, and Baoping Shang, "How Large are Global Energy Subsidies?" IMF Working Paper, May 2015. Available here: <https://www.imf.org/external/pubs/ft/wp/2015/wp15105.pdf>

⁷ See G20 Green Finance Synthesis Report, G20 Green Finance Study Group, 5 September 2016; Available here: http://unepinquiry.org/wp-content/uploads/2016/09/Synthesis_Report_Full_EN.pdf

⁸ These three are issue papers prepared for the G20 Hangzhou Summit.

⁹ See, Chris Humphrey, "Developmental revolution or Bretton Woods revisited?" Overseas Development Institute Working Paper 418, April 2015.

¹⁰ See Bent Flyvbjerg, What you should know about megaprojects and why, Oxford University, Said School of Business, 2014, available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2424835

¹¹ Petter Matthews, Executive Director, CoST International Secretariat, This is why construction is so corrupt, World Economic Forum, 4 February 2016. For more information see also: <http://www.globalconstruction2030.com/>

¹² Jomo KS, Anis Chowdhury, Krishnan Sharma, Daniel Platz, PPPs and the 2030 Agenda for Sustainable Development: Fit for Purpose? February 2016, available at: <https://sustainabledevelopment.un.org/content/documents/2288desaworkingpaper148.pdf>

¹³ Antonio Estache, Caroline Philippe. The Impact of Private Participation in Infrastructure in Developing Countries: Taking Stock of about 20 Years of Experience, 2012, available at: <https://ideas.repec.org/p/eca/wpaper/2013-133537.html>

¹⁴ Maximilien Queyranne, International Monetary Fund, "Managing Fiscal Risks of Public-Private Partnerships," Yaoundé, March 2014.

¹⁵ Martin Eichenbaum, Sergio Rebelo, and Carlos de Resende, "The Portuguese Crisis and the IMF" Background Paper Independent Evaluation Office of the International Monetary Fund, July 2016, available at: http://www.iew-imf.org/iew/files/completedevaluations/EAC_BP_16-02_05_The_Portuguese_Crisis_and_the_IMF%20v2.PDF. See also: J. Miranda Sarmento and L. D. R. Renneboog, The Portuguese Experience with Public-Private Partnerships, 2014

¹⁶ See fn 13, p. 11.

¹⁷ 10 Emerging Trends for 2015, Foresight Special Edition, KPMG, January 2015, p. 4.

¹⁸ Part 1: Principles for Public Private Partnerships (PPPs) effectiveness in Developing Countries: A note prepared by the WBG for the G20 High Level Development Working Group, September 2011, available at: <http://www.g20dwg.org/documents/pdf/view/15/>

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