

Infrastructure as an Engine of Growth in MENASA

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Table of Contents

Executive Summary	1
Introduction	2
Drivers of Infrastructure	5
Role of Infrastructure Investment in Economic Growth & Development	13
Financing Infrastructure in MENASA & Role of Developing	
Financial Markets: Financial Capital and Institutional Capital	16
Focus on MENA Infrastructure	25
Final Remarks	28
Suggested Readings	30
Appendix A-Infrastructure in India	31
Appendix B-Statistical Appendix	36

Executive Summary

The MENASA region is experiencing a secular wave of transformation with two epicenters, India and the GCC. In the former, the main drivers are a “goldilocks” demographics and the long lasting impact of reforms enacted in the 1990s by Dr. Singh (India’s current PM) are expected to solidify and extend this transformation process. In the GCC, the main driver is an energy commodity windfall that for the first time in history is not merely amassed in offshore assets, but is increasingly deployed domestically to transform the Arabian Peninsula into an advanced XXI century knowledge based economy.

Two factors will be keys to the future of the region: demographics and urbanization. With fertility rates still well above 2.2, the MENASA region will enjoy the goldilocks of an expanding labor force, while massive internal migration will feed a powerful process of urbanization. These secular waves require a massive commitment to build indispensable infrastructure to sustain the increased population and economic growth. In the two epicenters this need is well understood by policy makers, but a fundamental difference is noticeable. While in the GCC infrastructure projects are anticipating the demand and actually stimulating it (supply side effect), in the rest of MENASA the existing infrastructure are strained due to poor maintenance and intensive usage.

The expansion in trade and the reshaping of the financial architecture adds fuel to the demographics engine. Income generated through processing imported intermediate goods and raw materials into final goods for export is a common step in the journey to improve living conditions. Transport costs play a pivotal role in countries integrating into global supply chains and/or where factors of production are far apart. Further, economic integration alongside successful trade and production networks in the region demands far superior transport facilities and logistics services.

The MENASA region, especially India and the GCC countries, have been investing heavily in infrastructure development. To give a rough idea about the size and volume of investments in the region - India has planned infrastructure development for 2008-2012 valued close to USD 500bn in, while the value of projects planned or under way in the Gulf is close to \$2.9 trillion as of Apr 2011. Investment in infrastructure sets in motion a virtuous circle: higher productivity and competitiveness translate into higher incomes and higher government revenues and in turn more public investment in a mutually reinforcing pattern, as has been the case of China over the past two decades and the GCC since the turn of the century. In the process, other positive spill-overs are felt in the form of learning-by-doing effects, efficiency gains in companies, human capital improvement, research and development in construction techniques, technology transfers and process innovation.

Governments’ role as the largest provider of infrastructure financing in the region needs to be redefined given the crisis and resultant fiscal constraints. The role of private sector needs to be enhanced through privatization and Public-Private Partnerships (PPPs). The availability of capital is a key to spur an investment cycle - given the long-gestation nature of infrastructure projects, there is a need to attract private sector funds and more importantly, a need to develop deep and liquid local currency debt markets to improve access to finance. This brings to the forefront the role of DIFC and financial markets in financing infrastructure.

Introduction

When analyzing the macroeconomic outlook for a country, government capital expenditures come at the top of the list of indicators that underscore its prospects and its potential. If they are low, it is hard to dispel the idea that the country is on route to long term decline. This criterion might be simplistic but is broadly accurate: economies that do not invest in infrastructure or let them decay obviously neglect their future, but also their present, because investments constitute the fundamental driver of the economic cycle. In short, the adequacy of infrastructure and their maintenance determine the success or failure of a country.

This paper examines the role of infrastructure in the growth outlook in a macro-region that is poised to benefit from integration of its national economies,

demographic trends, human capital enhancement, and a wealth of energy resources.

The MENASA region is experiencing a secular wave of transformation with two epicenters, India and the GCC. In the former, the main drivers are a “goldilocks” demographics and the long lasting impact of reforms enacted by Dr. Singh in the 1990s when serving as Finance Minister. In his current capacity as India’s Prime Minister he is expected to solidify and extend this transformation process. In the GCC, the main driver is an energy commodity windfall which for the first time in history is not merely amassed in offshore assets, but is increasingly deployed domestically to transform the Arabian Peninsula into an advanced XXI century knowledge based economy.

Table 1 – MENASA Region: Key Indicators

	2007	2008	2009e	2010f	2011f
Population (mns)	1939.9	1972.9	2005.7	2039.1	-
GDP (Nominal GDP, USD bn)	4061.8	4689.5	4440.3	5215.5	5801.9
GDP (PPP terms, Curr. Intl dollars, bn)	8149	8732.3	9100.5	9836.0	10438.0
International Reserves (USD bn)	1188.1	1352.4	1369.7	1466.1	1585.9
Total Exports (USD bn)	1221.7	1598.4	1156.1	1358.0	1308.7
Total Imports (USD bn)	1095.2	1355.4	1144.0	1308.7	1559.4
Oil reserves (thou' mn barrels)	874.9	874.7	875.5	-	-
<i>MENASA region includes: all GCC countries along with Algeria, Azerbaijan, Bangladesh, Egypt, India, Iran, Iraq, Jordan, Kazakhstan, Kyrgyz Republic, Lebanon, Libya, Morocco, Pakistan, Sri Lanka, Sudan, Syria, Tunisia, Turkey, Turkmenistan, Yemen)</i>					

Source: EIU, IMF WEO Apr 2011, BP

The results of this transformation so far have been extraordinary and have spread to an area which includes almost 2 billion people and over 9.8 trillion US\$ GDP calculated at Purchasing Power Parity (PPP) (equivalent to 5.2 trillion US\$ in conventional nominal terms). This area – spanning a diverse group of countries, from the former Soviet Union Republics to the Arab World and the Indian Peninsula – remained until the sunset of the XX century at the margin of the process that saw the entry of key emerging countries in the mainstream of the world economic system (China, the Asian Tigers, East Europe, Brazil, Mexico, Chile etc.).

In the past decade however the tailwinds have gained strength thanks to momentous advances in telecommunications and trade liberalization. Opportunities that were far-off have suddenly become attainable. Distant markets were connected. Even the areas outside the two epicenters of MENASA or lying just outside its perimeter are slowly starting to reap some gains: a) Central Asia where the transition out of a centrally planned economy is painfully slow; b) the Southern Mediterranean shore where the torpor mixed with outbursts of strife typical of the second half of the XX century is giving way to economic reforms; and c) East Africa, where despite barriers to follow into the wake of emerging markets, a few countries are breaking out of the vicious circle of underdevelopment.

Sustaining this process and propelling it towards the next phase requires striking a balance between the contribution of market forces and government policies, both at national and international level. Economic liberalization must go hand in hand with measures that foster the optimal allocation of resources (both public and private) and support human capital enhancements.

Priorities need to be established because rarely can economic growth be well-balanced and smooth across geographical areas or sectors. The attempts to spread out economic activity evenly are doomed

to fail because competitive advantages can be pursued only in selected areas. This does not mean that development cannot be inclusive, but resources need to be concentrated on the most promising ventures. Individuals who are born in underprivileged areas can relocate where opportunities are more abundant: economic development has typically hinged on massive migration waves. It suffices to remind oneself of the population shift towards the United States (and its Western Frontier) from the rest of the world or the relocation of tens of millions Chinese from the inner countryside to the coastal urban areas. Building physical and communication links which promote economic integration and improve the division of labor is a requisite for welfare-enhancing development.

Cost benefit analysis should remain the deciding factor on resources allocation, because infrastructure is most often a sector where competition is not feasible and where government involvement is paramount. The financial crisis has sparked a renewed emphasis on infrastructure as a countercyclical measure, but reality of course is more complicated. The experience of the 1990s in Japan clearly indicates that additional spending on infrastructure is not always a panacea. Tax payers might end up footing the bill for 'white elephants' or unnecessary (possibly harmful) projects bringing minimal economic gains and large price tags. In essence it must be kept in mind that no matter whether investments are private or public, one should concentrate on those with the highest positive net present value, not investments with the highest expected political return.

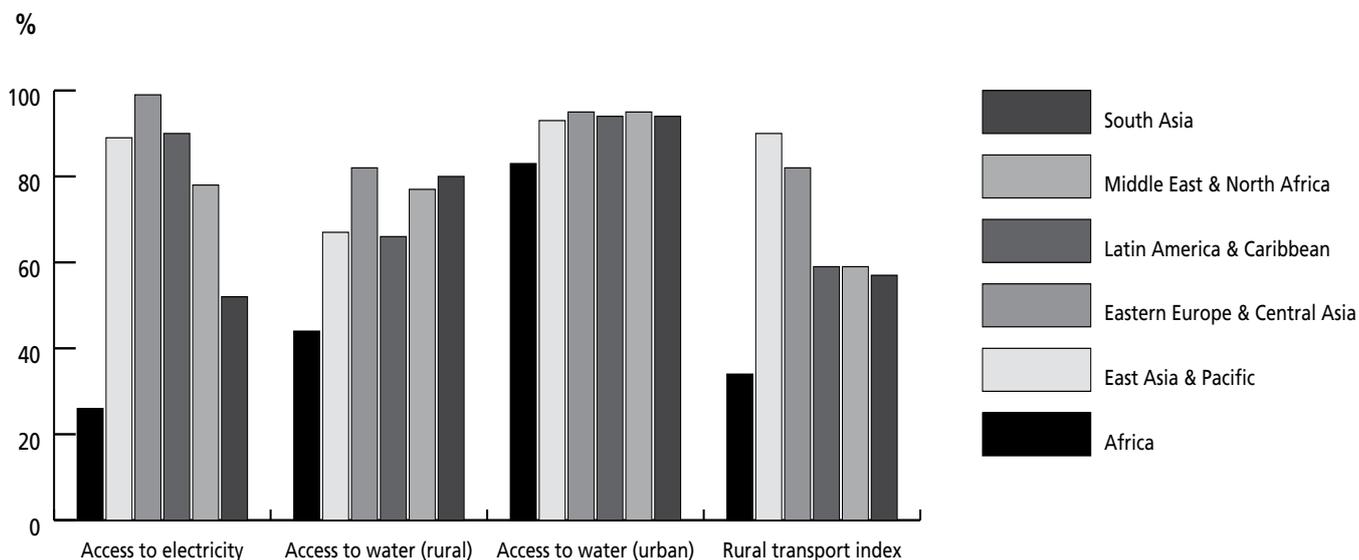
Two main areas contiguous to the MENASA macro-region, East Africa and Central Asia have made significant progress in the first decade of this century. The first is striving to break the vicious circle of isolation and poverty. A patchwork of reforms, although still limited, helped by high commodity prices have produced a steady trend of growth.

Even though it has still to reach the majority of population so that a middle class could emerge, the foundations have been laid and it is very encouraging that the effects of the global financial crisis have been limited in the region, in a demonstration of resilience that few would have taken as granted.

Central Asia presents a mixed record: since the end of the 1990s many countries established institutions – however embryonic – avoided or resolved violent conflicts, established the foundations for market-based economies, and sustained an economic recovery. Others are still marred by weak institutions, rudimentary governance, infighting along sectarian fault lines, and secession threats exacerbated by ethnic divisions and inward looking leaders. Nevertheless, new transport infrastructure for energy resources and trade liberalization are dissipating the clouds over the horizon and the demand for infrastructure is strong and can lead to a transformation of the region and its international integration¹.

There is still a wide gap in the availability of infrastructure capital across the world as highlighted in Fig. 1, and therefore plenty of areas where concentrating resources will produce sizeable benefits. Basic utilities are a notorious hindrance: according to the World Bank the MENA region loses an estimated 3% of GDP a year as a result of hopelessly inadequate water management, while power generation is utterly antiquated. In some cases the gap in infrastructure has narrowed and the next phase of development would put some large cities in emerging markets ahead of many in developed countries. Furthermore the urbanization trend is likely to accelerate as growing population clusters lead to economies of scale and of networking. At the same time, robust GDP growth and supportive balance of payments positions have provided the funding to build infrastructure in most emerging countries. The recent crisis has however brought the mismatch between available resources and cost of infrastructure into sharper focus, placing greater strain on national and metropolitan public expenditure.

Fig. 1 – Access Gap: percentage of population with access to basic services by region



Source: International Finance Corporation, World Bank Group, "Support to Infrastructure", 2009

The rest of this paper is divided as follows. To begin with we will discuss in some detail the factors that drive infrastructure demand, demographics, urbanization, trade, financial markets. Subsequently

we will assess the prospects for India and the GCC and review the empirical evidence on the effect of infrastructure on welfare. A section summarizing the main points will conclude.

¹ For example five countries are landlocked Kazakhstan, the Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan, while Azerbaijan has only a coast on the Caspian Sea, which raises a key issue with transport infrastructure to overcome centuries of isolation.

Drivers of Infrastructure

(a) The Demographic Factor

The main factors that help determine the appropriate supply of infrastructure are the size and the age structure of the population. Hundreds of millions of individuals are expected to reach working age (14 years) in the MENASA region in the next two decades (270mn of whom are in India). In the demographic transition with declining overall dependency rates, we could observe a growing labor force, making particularly critical that economic-focused infrastructure is provided to foster job creation.

The MENASA region has a population of about 2 billion (see Table 1). Its fertility rate has been among the highest in the world over the past decade. By contrast, population growth in Europe and Japan has leveled off together with the decline in fertility (rates barely offset by immigration).

Although the average fertility rate for women in the region went down from 3.8 in 1996 to 2.8 in 2008, the demographic wave is still riding high. The decline in fertility rates could surprise but certainly reassures those who worried that the world population would increase forever. With lower fertility rates, world population is forecast to reach its maximum expansion in 2050 to just over 9 bn, then stabilize, or slightly contract. The MENASA region is approaching “the replacement rate” - equal to 2.2 per woman, a number that guarantees a stable population. This pattern represents a precious opportunity.

High fertility rates over the previous years imply that there is a sizeable number of people in the age-group 0-14 years while the “working-age population” (15-64 years) has become larger, reaching 63% (using a weighted average) of the total MENASA population. Moreover, with fewer children being born, more women will now join the work force, with a direct benefit to production and

aggregate savings: individuals save most during the working years. A decline in the nation’s dependency ratio² implies rise in average savings rate and the growth in the number of workers will help to support economic growth. This leads to a swelling of the ranks of the middle class.

The Middle Class as a Lever of Economic Growth

How do we define the middle class?. A World Bank report by Martin Ravallion defines \$2 to \$13 a day at 2005 PPP prices as the income range which could provide a middle class standard of living, because two dollars a day is considered the definition of the poverty line in the developing countries and thirteen dollars is the poverty line in the USA. According to this definition between 1990 and 2005 the size of the middle class in the MENASA region almost doubled, from 360 mn to 620 mn³. This performance still lags behind China which saw its middle class raise from 173 mn to 806 mn over the same period, but nevertheless constitutes an impressive feat and could be the harbinger of a process similar to China’s.

The economic effects of a rise of the middle class proceed in waves not linearly. As middle class incomes grow, durable goods and large ticket items such as cars, become affordable and their sales increase exponentially. Since middle-class households enjoy a stable source of income which allows some savings after satisfying basic needs they form the basis of the consumer market, the development of the financial markets and an important global political force.

Mobility in a twofold sense is one of the defining features of this emerging middle class: (a) spatial mobility, in India for example newer cars like the Tata Nano and low-cost airlines are opening a whole new range of opportunities; (b) social upward mobility nurtured primarily by better education.

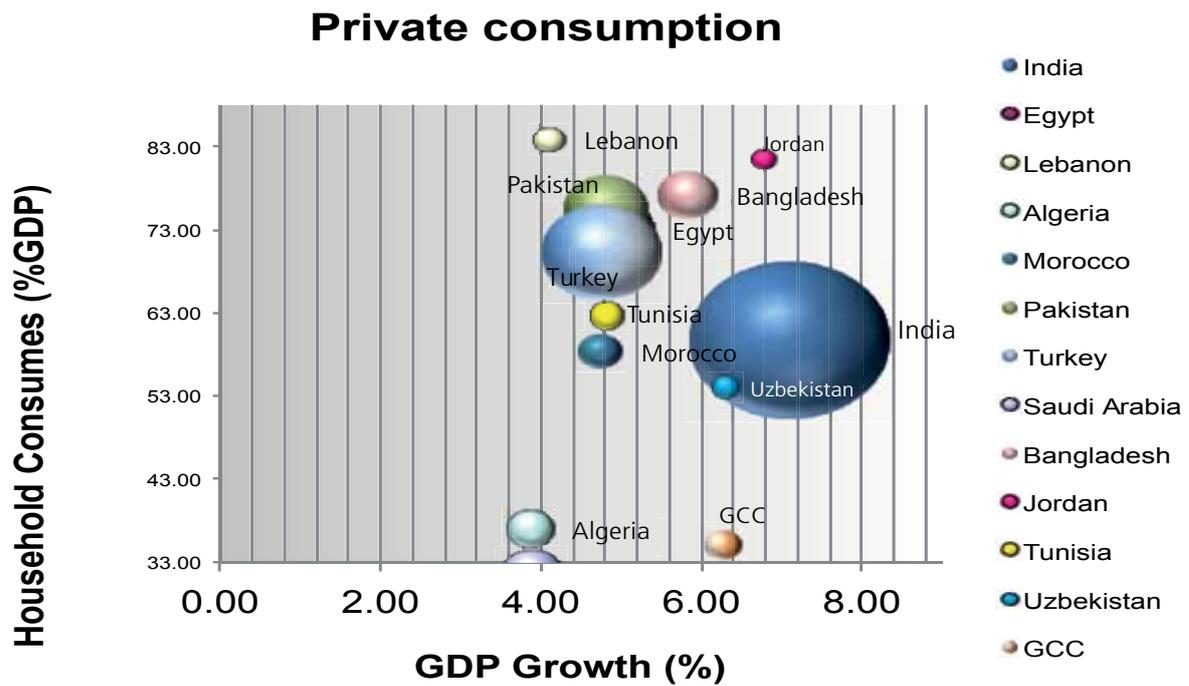
² “Dependency ratio” is the ratio of the dependent population (0-14 & > 65) to the working-age population.

³ Source: Ravallion, Martin (2009): The Developing World’s Bulging (but Vulnerable) “Middle Class”, Policy Research Working Paper 4816, World Bank, January 2009.

Better education spawns entrepreneurship, but without the support of an efficient banking system, as in mature economies, the creation of new

companies will be confined to the rich or the upper class who have resources and (most importantly) the connections.

Fig. 2 – The Middle Class Size and Distribution



Source: DataBank by World Bank <http://databank.worldbank.org>

Household consumption and GDP growth calculated as average on the period 2000-2008; the size of the bubbles represents the household final consumption expenditure, at PPP (current international \$).

(b) Urbanization

The second powerful dynamics in MENASA is the growth of urban population, at an average rate of 2.6% (using a weighted average) per year for the period 1995-2008. Urban areas provide the most efficient breeding ground for the growth of the market economy, enterprise localization, talent pooling, clusters of competencies and specialization. The shift of manufacturing from the developed world to emerging economies has pushed urbanization, putting a strain on existing infrastructure assets.

Across cities in emerging countries a boom is underway

in power generation, aqueducts, water and sewage systems, commercial property, office space, ports and airports. Often governments and private sector are acting in tandem deploying unprecedented amounts of capital. The Boston Consulting Group (BCG) estimated that between \$35-40bn annually would be required to meet the rising demand for infrastructure development at a global level. BCG also estimates that governments would be able to fund almost half this requirement.

Urbanization is a complex phenomenon which involves three different dimensions as underlined by the World Bank: integration between rural and urban areas, integration of slums with other parts of cities,

integration between lagging and leading provinces within a nation. In addition urbanization fits within a much broader phenomenon of economic integration

which involves the integration between isolated and well-connected countries or between advanced and emerging economies.

Table 2 – Population growth in large cities

	Population (millions)			Average annual rate of change (%)	
	1975	2009	2025	1975-2009	2009-2025
<i>Urban Agglomeration</i>					
Lagos, Nigeria	1.9	10.2	15.8	4.96	2.74
Dhaka, Bangladesh	2.2	14.3	20.9	5.47	2.4
Karachi, Pakistan	4	12.8	18.7	3.43	2.37
Delhi, India	4.4	21.7	28.6	4.68	1.71
Kolkata (Calcutta), India	7.9	15.3	20.1	1.95	1.71
Mumbai (Bombay), India	7.1	19.7	25.8	3.01	1.69
Manila, Philippines	5	11.4	14.9	2.44	1.65
Al-Qahirah (Cairo), Egypt	6.4	10.9	13.5	1.54	1.35
Beijing, China	4.8	12.2	15	2.73	1.29
Shanghai, China	5.6	16.3	20	3.14	1.27
Istanbul, Turkey	3.6	10.4	12.1	3.11	0.96
São Paulo, Brazil	9.6	20	21.7	2.15	0.51
Los Angeles-Long Beach-Santa Ana, United States	8.9	12.7	13.7	1.03	0.48
Ciudad de México (Mexico City), Mexico	10.7	19.3	20.7	1.74	0.44
New York-Newark, United States	15.9	19.3	20.6	0.57	0.42
Rio de Janeiro, Brazil	7.6	11.8	12.7	1.32	0.42
Buenos Aires, Argentina	8.7	13	13.7	1.16	0.34
Paris, France	8.6	10.4	10.9	0.58	0.28
Tokyo, Japan	26.6	36.5	37.1	0.93	0.1
Moskva (Moscow), Russian Federation	7.6	10.5	10.7	0.95	0.08
Osaka-Kobe, Japan	9.8	11.3	11.4	0.41	0.02

Note: Urban agglomerations are ordered according to their projected rate of population change during 2009-2025.

Source: UN World Urbanization Prospects; Remark: (7 of top-20 most-populated cities are in MENASA region)

The stable growth of urban population goes together with the development of the economy. Changing demographics results in rising demand for private investments – new residents need new homes and the infrastructure that supports community living. Infrastructure demands are closely correlated with population growth and in MENASA out of approximately 2 billion people around 180 million young are expected to join the workforce this decade. This forecast raises the issue of the infrastructure gap in the region, especially in power generation, water, transportation

and health care. Urban areas give a major contribution to country's economy, especially in India where only 1/3 of the population lives in urban areas (11% in cities with more than 1 million people) but they generate 2/3 of the country's GDP and account for 90% of government revenues⁴. What is imperative is the availability of good urban infrastructure – be it drinking water, sewerage disposal, solid waste management, power or roads to name a few essential services.

⁴ Source: "Urbanization in India" by World Bank

Migrants into cities looking for economic opportunities are typically those with skills more likely to spur synergies with existing residents, and therefore it gives rise to a cycle where the demand for more infrastructures will attract laborers and technicians needed to build them. This mutually reinforcing process is one of the main drivers of economic development. Rarely however can this process be planned carefully. Massive immigration into urban areas all over the developing world reminds of the similar process that took place during the impetuous phase of the Industrial Revolution in the XIX century when cities like London, Paris, and New York drew millions often into vast slum areas. But these people eventually escaped poverty—without cities, they might never have done so.

In the emerging markets of the MENASA region this process will require monumental investments in basic utilities which will dwarf anything seen recently in the mature economies where cities' expansion has come to a trickle. Nowadays 35% of MENASA population lives in cities (heavily conditioned by India, with its 1.2 billion people). By 2030, almost 60% of the population of the developing world will be living in urban areas⁵ And a recent McKinsey study (March 2011) estimates that the economic clout will be moving East – with 20 of the world's top 50 cities ranked by GDP located in Asia by the year 2025, up from 8 in 2007: "in this new landscape of urban economic power, Shanghai and Beijing will outrank Los Angeles and London, while Mumbai and Doha will surpass Munich and Denver".

So, what is the relation between urbanization and infrastructure development – which is the cause and which the effect or is it more like a mutually reinforcing cycle? The progress of urbanization leads to an impact on societies and economies, including the development of infrastructure. However, infrastructure in turn underpins efficient urban living conditions, which

consequently promotes more urbanization. Rapid urbanization leads to widening rural-urban income disparities and infrastructure gaps. In such a situation, infrastructure can be seen a counter-balance to correct intra-regional gaps. The cause and effect relationship between the two is not easily identified and hence difficult to classify.

Several studies suggest that urban concentration increases in the early stages of economic development as part of increasing regional disparities, then decreases in later stages of development as part of decreasing regional disparities or regional convergence. Henderson (2002) estimated that increased infrastructure density strongly reduces urban concentration. The paper showed that after controlling for population and land area, waterways have enormous impacts - elasticities of five or six - opening up a country and reducing urban concentration. Road and telephone mainlines have negative but insignificant density effects, reducing urban concentration. So, urban concentration is negatively related to crude measures of infrastructure. Pradhan (2007) used Indian state-wise data to estimate that infrastructure had a significant positive impact on urbanization.

(c) Trade

Empirical evidence confirms that in order to move out of poverty, nations must become producers and exporters to move up in the global income ranking. Public investment in transport facilities, communications and trade logistics are the main ingredient for reducing the production costs of intermediate inputs, thereby fostering specialization, and integration into regional and global supply chains and for making export markets accessible. Increasingly, however, with greater trade liberalization, lower tariffs and non-trade barriers, trade in intermediate products and services is the fastest growing component of world trade⁶.

⁵ Barney Cohen, Committee on Population, National Research Council, "Urbanization in developing countries: Current trends, future projections, and key challenges for sustainability", *Technology in Society* 28 (2006) 63–80.

⁶ See OECD (2010), "Intra-industry trade", in OECD, *Measuring Globalisation: OECD Economic Globalisation Indicators 2010*, OECD Publishing

In essence, a major determinant of trade and growth in developing regions is intra-industry trade in parts and components. This type of trade is more sensitive to transportation costs than trade in raw materials & primary goods, commodities and final products because the just-in-time production methods, the cost of warehousing and the flexibility to consumers' requests constitute the predominant competitive edge. For increased efficiency in such intra-industry trade, appropriate infrastructure should be available for ever greater scope of fragmentation and therefore efficiency.

In a nutshell, moving up the value chain means embracing the growing interdependence between countries - through increased trade and factor mobility. The economies of scale, the technology transfers and the process innovation brought about by the boost in international trade could not have been possible without a revolution in the transport sector which drove costs sharply down while standardizing the procedures and integrating transport modes. For international trade in manufactured goods estimates of the costs of the time-in-transit range as high as 0.5% of the value of goods shipped, per day (Hummels 2001).

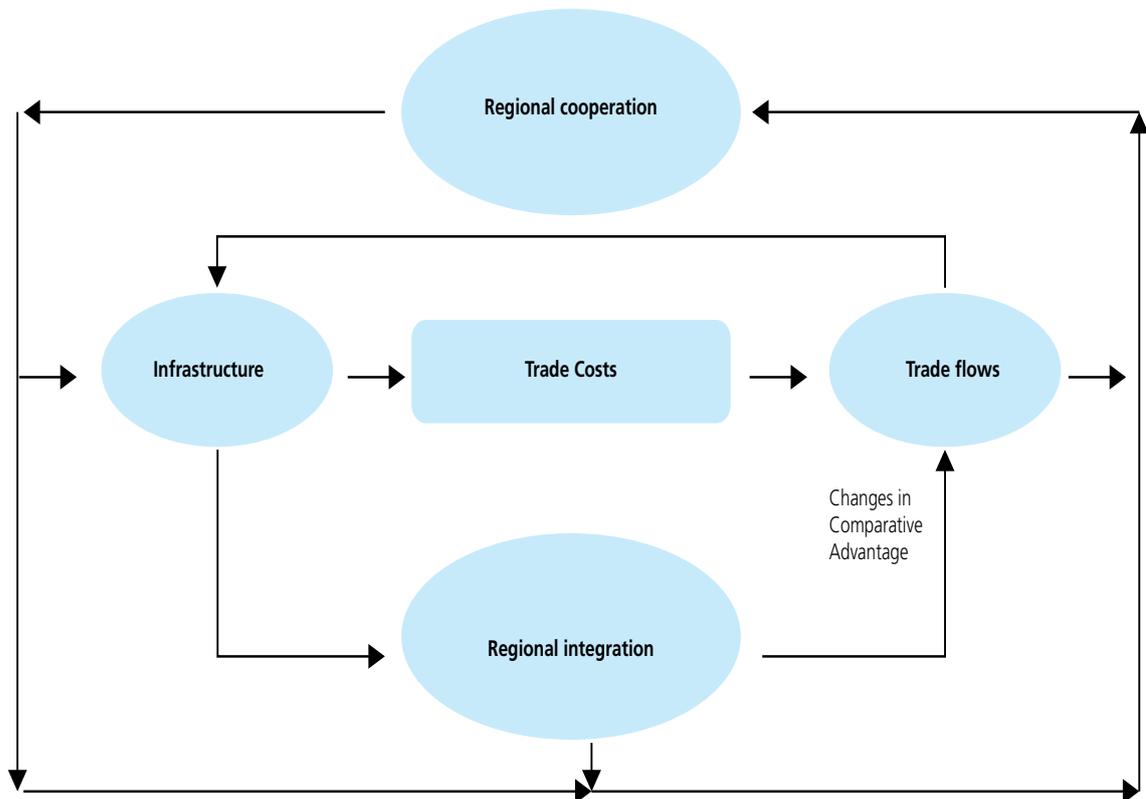
Nordås & Piermartini (2004) explored the role of infrastructure quality on a country's trade performance and found a significant and relatively large impact on bilateral flows - clothing sector was the most time-sensitive, while the automotive sector was the most information-sensitive. The paper also found that if improvements in the quality of infrastructure in developing countries lag behind that in developed countries, their share of world trade is likely to decline. It is also the case that time to market, and hence the quality of infrastructure, mattered more than before in sectors such as textiles and clothing. Such a development that threatens to undermine least developed countries' comparative advantage in important segments of these sectors.

A recent study by Korinek & Sourdin (2011) provides an empirical analysis for a large number of countries of the effects of the quality of logistics on trade⁷. To illustrate the effects of improved air transport infrastructure, their results show "that a one-unit increase in the quality of the exporter's air infrastructure at low levels of income as measured by the index, results in more than 140% increase in trade and the effect of improvements at the lower-middle income and upper-middle income levels is associated with increases in exports of 258% and 213% respectively. The estimated impact at high income levels is around 227% for a one-unit increase in the air infrastructure index."

Infrastructure investment that reduces trade costs spurs regional economic integration much more than previously thought on the basis of old fashioned economic models of export led demand. For the MENASA region and particularly for the GCC countries, the lessons are very clear: greater regional economic integration requires investment in regional infrastructure, and also requires regional cooperation, on trade facilitation, streamlining and simplifying international trade procedures, customs and standards. To quote from the conclusions of the cross-country study of Korinek & Sourdin (2011): "The findings in this study highlight the importance of promoting policies to continue to move trade facilitation reforms forward. This analysis confirms that spillovers from improvements in trade logistics can be significant. By reducing the time and cost involved in administrative procedures, businesses stand to gain very significantly in terms of their ability to trade competitively in international markets. Developing and least developed countries gain particularly from these investments which will contribute to economic development through increased trade flows."

⁷ See the discussion in Korinek, J. and P. Sourdin (2011), "To What Extent Are High-Quality Logistics Services Trade Facilitating?", OECD Trade Policy Working Papers, No. 108, OECD Publishing.

Fig. 3 – The interrelationship between infrastructure and trade flows



Source: Prabhir De (2010).

Trade costs are cited as an important determinant of the volume of trade. About 170% of ‘representative’ trade costs in industrialized countries breaks down into 21% transportation costs, 44% border related trade barriers and 55% retail and wholesale distribution costs (Anderson and van Wincoop, 2004). High trade transaction costs across borders happen largely due to regulations, poor institutions and poor infrastructure especially in trade across developing countries. Lack of integrated regional transport network or missing links, absence of harmonization of tracks etc. are all factors that push up transaction costs.

There has been very little recent evidence on trade/transaction costs for the MENA region. However,

Zarrouk (2003) identified, through a survey among export/import companies, that trading costs averaged some 10.6% of the value of trade (cost arising from customs clearance, bribes, certification processes relating to product standards, trans-shipment regulations and entry visa requirements) in the MENA region. Customs clearance procedures (it was estimated that the average company spent 95 man-days per year resolving problems with customs and other government authorities) and public sector corruption were recognized as the next two most important contributors to additional costs of trade.

The MENA region’s participation in global production chains has been minimal as well – the region was more

focused on exporting primarily low-value finished goods and importing parts and components for an inefficient manufacturing base—typical of inward-looking import-substitution economies (Iqbal & Nabli, 2004). A World Bank study on “Strengthening MENA’s Trade and Investments Links with China and India” (2008) found MENA countries export and import a large share of intermediate goods – imported semi-finished goods include steel, non-ferrous metals, and other products used as inputs in the early stages of production, but less so of the technologically advanced machinery. Trade in parts and components are usually considered better indicators of the degree of integration to the global production high value-added production chains. Globally, trade in parts and components quadrupled between 1993 and 2006, increasing from 17% of total manufacturing exports to 27% while trade with parts and components accounted for less than 10% of the region’s exports and about 15% of imports in MENA countries⁸.

The lack of adequate infrastructure is a cause for investor concern in the MENA region “with respect to institutional failure to provide crucial public goods and services, an important exception being the Gulf” (Bhattacharya & Wolde, 2010). Evidence from the

World Bank’s Doing Business 2011 also shows that the MENA & SA regions combined have much ground to gain when it comes to ease of trading across borders.

Another means of inferring the importance of infrastructure is analyzing the importance of logistics. According to the World Bank’s Logistics Performance Index, the MENA region’s performance at 2.6 is superior to that of the Sub-Saharan Africa & South Asia regions (2.4 & 2.5), but lags slightly behind the other three developing regions (East Asia & Pacific, Europe & Central Asia and LatAm & Caribbean – all at 2.7). However, variations exist within the MENA region – with performance in the GCC noticeably stronger, though still below their income group average. The standout performer is the UAE, ranked 24th in the world in the 2010 LPI, with a score comparable to that of Korea. The gap between the GCC and the rest of the region is stark especially in areas such as infrastructure quality.

Table 3: Trading Across Borders

	Documents for exports (number)	Time to export (days)	Cost to export (\$ per container)	Documents for imports (number)	Time to import (days)	Cost to import (\$ per container)
Middle East & North Africa (MENA)	6.4	20.4	1,048.9	7.5	24.2	1229.3
East Asia & Pacific (EAP)	6.4	22.7	889.8	6.9	24.1	934.7
Eastern Europe & Central Asia (ECA)	6.4	26.7	1,651.7	7.6	28.1	1845.4
Latin America	7.1	19.0	1,310.6	7.5	22.0	1441.1
Orgn for Eco. Co-Operation & Devt (OECD)	4.4	10.9	1,058.7	4.9	11.4	1106.3
South Asia (SA)	8.5	32.3	1,511.6	9.0	32.5	1744.5

Source: Doing Business 2011, World Bank.

⁸ There is however a large variation in component trade across countries - only a negligible share of Egypt and Syria’s trade is in components, whereas Morocco, Tunisia, and Jordan all have a high share of exports in components.

Fig 4- MENA LPI performance in 6 Core Logistics Areas

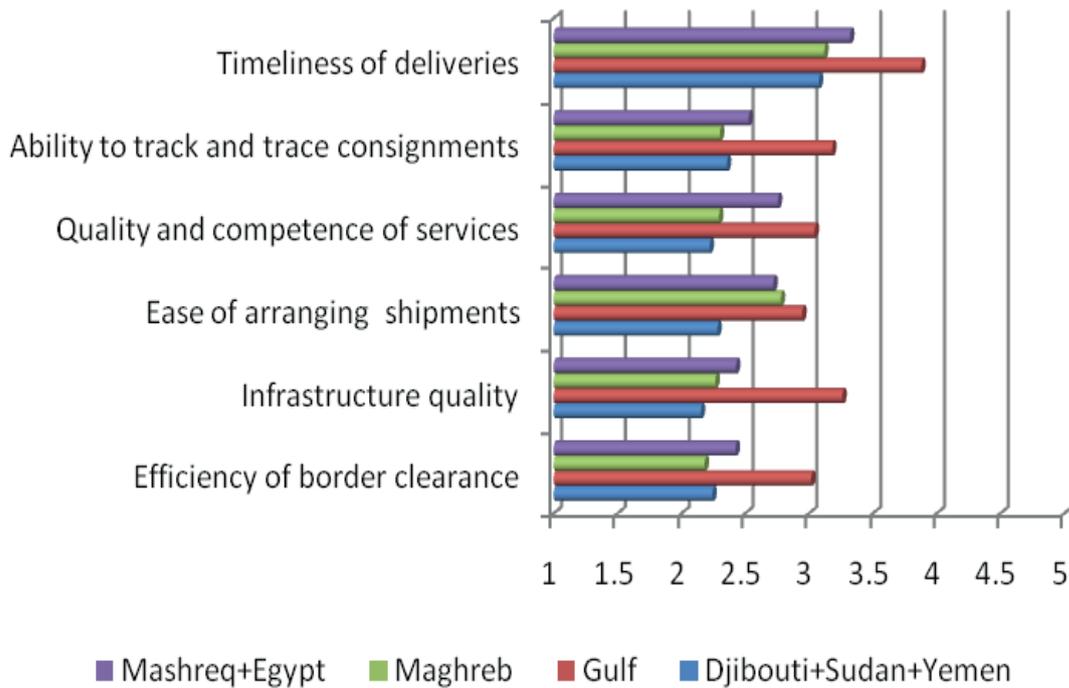
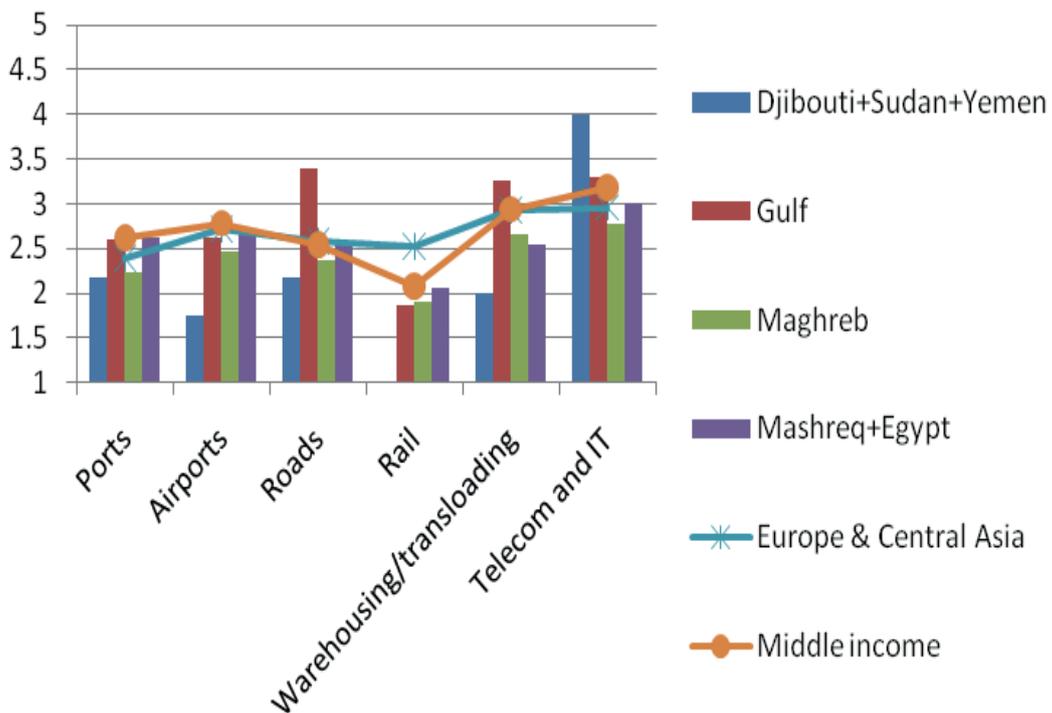


Fig 5-Infrastructure Quality in MENA region



Source: Logistics Performance Index, World Bank, 2010.

Role of Infrastructure Investment in Economic Growth & Development

Common sense suggests that a higher infrastructure endowment will have a positive impact on growth. However studies which reach clear cut conclusion are rare. Estimating, empirically, the effects of and returns to infrastructure investment are a complex task. In particular it is difficult to isolate the effect, say, of a new road on the local economy which might be intertwined with equally powerful effects such the increase in income availability of cars or cheaper gas prices.

Above all, data are a major hurdle. Few aggregate data exist and their quality is often patchy, while international comparison and aggregation are difficult due to different criteria followed in the compilation of data. Even when the data are available, they are not easy to interpret - so empirical evidence comes in many shapes and strands and depends crucially on *ad hoc* assumptions. It must also be kept in mind that the same project yields different returns depending on when it is built and where it is located. Hence an aggregate figure on returns is not informative. Further, firms and individuals cannot react immediately to the availability of, say, a new road or improved port access or better energy supply. This lag, which might vary across countries, is an additional complication for empirical analysis. Finally, there are network effects and infrastructure service complementarities that reinforce the impact of infrastructure availability. For example, a new road might not be enough to spur the location of factories if power supply is erratic or there is no broadband. This point was underscored by Hurlin (2006) who found that when the available stock of infrastructure is very low, investment in additional capacity has the same productivity as non-infrastructure investment. However, when a minimum network is available, marginal productivity of infrastructure investment is largely greater than the productivity of other investments. After an optimal network effect is achieved, its marginal productivity becomes similar to the productivity of other investments.

In this section we will present a critical review of selected evidence and try to distill the key messages from the

empirical literature useful for policy makers and finance practitioners with the proviso that these are indicative. Even the US Congressional Budget Office, despite the pressure exerted by the US administration to come up with some solid evidence could only profess a lack of certain conclusion in the documents sent to Congress on infrastructure investment: "Although the economic rationale for some additional infrastructure spending is strong, the economic returns on specific projects vary widely".

One of the earliest papers on public capital was Aschauer (1989) who measured the effects of public infrastructure capital on US total factor productivity, finding that output elasticity at very high levels of 0.4 to 0.5 – such that implied marginal product of infrastructure capital was close to 100% per year! However, this study was criticized due to the possibility of spurious correlations and even on the measurement of the true value of public infrastructure.

Several studies have dealt with this relation. Caledron, Moral-Benito and Servén (2011) estimate that the output elasticity of infrastructure lie in the range of 0.07 to 0.10, while also finding little evidence of heterogeneity among the 88 country sample – i.e. the output elasticity of infrastructure does not seem to vary with countries' level of per capita income, their infrastructure endowment or the size of their population.

The World Bank estimates that the infrastructure projects for which they have provided financing have annually earned on average 17% of the cost of the project for the period 1974-92 (World Bank, 1994). The infrastructure is exposed to damage loss, either from natural disasters, civil disruption, or lack of proper maintenance. Returns were seen to be lowest and declining for irrigation and drainage, airports, railways, power, water supply and sewerage: reasons given were overestimation of the rate of growth in demand for new production capacity, inadequate procedures for assessing demand and network bottlenecks.

The most compelling evidence that one can present is contained in Fig. 6 portraying the relationship between infrastructure ranking and competitiveness ranking (as calculated by the World Economic Forum for 2009-10) for selected countries (the numbers here refer to the ranking in the world classification, i.e. a higher number means worse infrastructure and worse competitiveness). This relationship is rather clear and has very few outliers. India is one of them, which roughly implies that there is ample scope to improve overall productivity through increased investment.

Foreign investors are comfortable with the idea of investing in Indian infrastructure as the risk returns ratio is comparable with that of most other developing markets. While some players said that the average internal rate of return (IRR) on infrastructure projects in India is about 15-18%, others said it was higher at about 20% or more. Thanks to the higher comfort levels, foreign investors no longer seek guarantees from the state and central governments in return for investments.

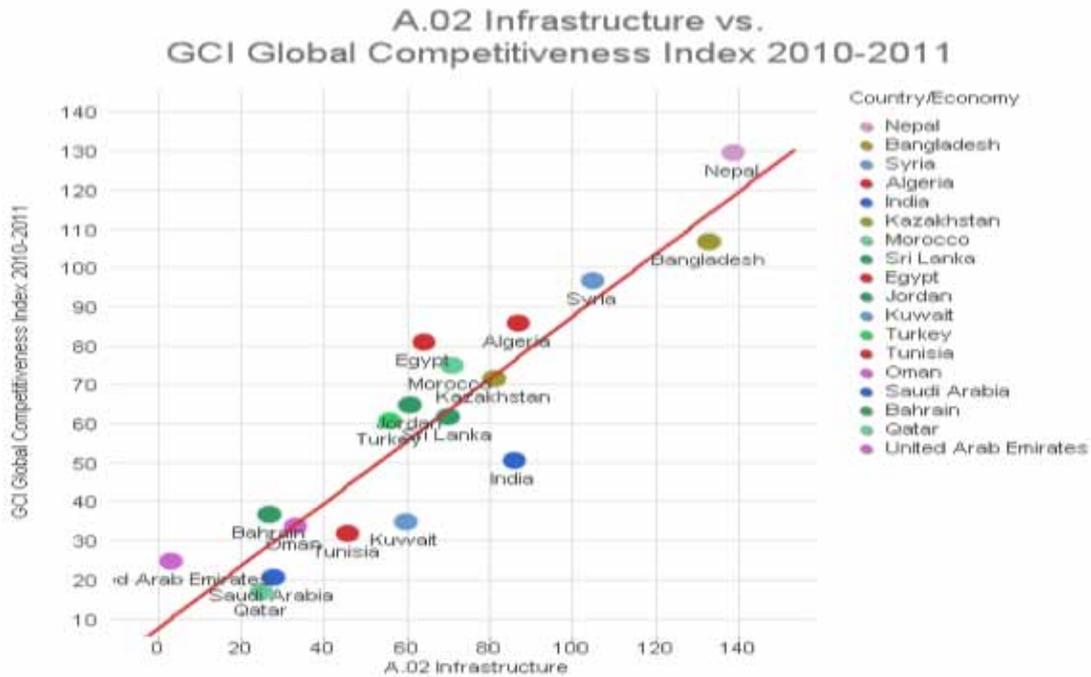
This is in line with the classic finding of Easterly and Rebelo (1993) who investigated whether changes in the level of various policy variables permanently increased the economic growth rate, and whether or not investments related to information and telecommunications raised the economic growth rate. They found that public infrastructure investment is a large fraction of both total and public investment, and infrastructure in transportation and communication

is consistently correlated with economic growth. The rate of return in these sectors is 63% and elasticity of change in output with respect to a 1% change in the level of infrastructure is 0.16.

Shah (1992) estimated a cost function including infrastructure such as, transportation, communication, and electric power in Mexico and showed that public infrastructure has a small but positive multiplier effect on output. The rate of return is 5-7%, and elasticity in output with respect to a 1% change in the level of infrastructure is 0.05.

Röller and Waverman (2001) studied the telecommunications infrastructure and its impact on economic development. The study finds that investments in communication infrastructure have significant growth effects - for OECD countries it is about .59% (on average). Interestingly, findings also imply that telecommunications infrastructure investments are growth generating only after a certain "critical mass" point - the author's penetration rate of approximately 24% for the OECD countries. Since non-OECD countries have a mean penetration rate of only 4%, which is well below the threshold level, marginal improvements might not generate the desired aggregate growth effects. Therefore, for non-OECD countries growth effects can only be realized if a significant improvement in the telecommunications infrastructure is achieved. This "critical mass phenomenon" is a significant distinction between public infrastructure and telecommunications infrastructures.

Fig. 6 – The Relation between Competitiveness and Infrastructure



Source: World Economic Forum and DIFC Economics elaboration

The review of the literature allows us to assert that modern economies cannot function without a significant investment in infrastructure: an upgrade in the quantity and quality of infrastructure raises welfare and to a large extent fuels growth, which in turn increases demand for infrastructure. There is no consensus on the quantitative estimate of the rate of return on infrastructure investment; but it is clear that the largest benefits, and hence the largest long

term returns, are enjoyed in lower income countries or countries that are in the early stages of development or diversification. While the optimal amount of infrastructure supply might not be pinpointed precisely, evidence from power generation, telecommunication, roads, ports and irrigation highlights that the effects are predominantly positive even for developed countries.

Financing Infrastructure in MENASA & Role of Developing Financial Markets: Financial Capital and Institutional Capital

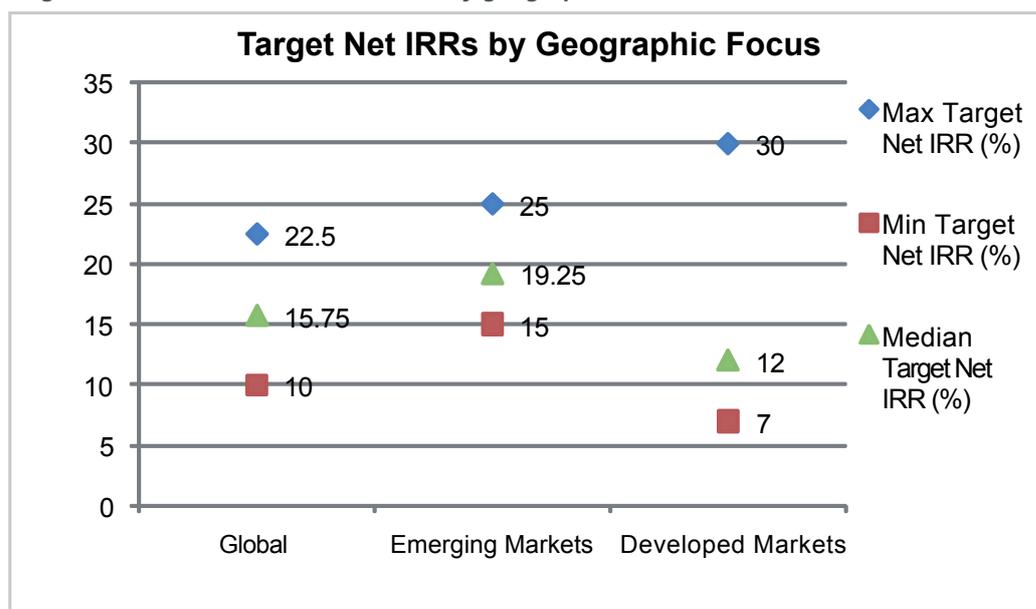
Infrastructure investment is capital intensive, requires long gestation, with revenue generation subject to policy uncertainty. As a consequence infrastructure investments are perceived as more risky by most investors. For this reason the bulk of financing has traditionally come from the government or government owned companies such as public utilities. Private funding has been scarce until very recently and is still far from abundant, requiring a clear and transparent framework for private sector provision of infrastructure services or participation (PPP). Nevertheless coming out of the financial crisis, where the excesses of leveraged credit almost destroyed the international capital markets, asset backed loans might appeal to conservative long-term oriented wealth managers in the form of conventional project finance, but also as innovative dedicated infrastructure funds. A surge in market listings of owners, operators and contractors to build infrastructure assets in emerging countries is underway.

In addition, the financial crisis has revitalized the interest in the Keynesian policy prescription for countercyclical infrastructure investments especially

in countries that have felt most the effects of the financial crisis. Today infrastructure projects top the policy agenda. In the US for example where decades of neglect and underinvestment have led, among other things, to collapsing bridges, crumbling highways and outdated electric grids, a flood of public funds is being deployed in an attempt to boost growth. But in the haste to appease various special interests, the priorities have in all likelihood been established haphazardly. For example public transport in large urban areas does not seem to feature prominently in the list.

This renewed interest raises a set of questions: which new sources of finance can be tapped and how can returns be calculated? How can the role of the private sector be widened without giving rise to monopolistic rents? How can existing and future infrastructures be managed more effectively and more efficiently? In short, what business model can be envisaged for financing, organizing, regulating and delivering infrastructures and infrastructure services, to respond adequately to the complex challenges they face, and will they be sustainable over the longer term?

Fig. 7 – Target Net IRR for Infrastructure funds by geographical location



Source: Preqin

Public Private Partnership in MENASA

There is a fundamental difference between the accounting framework for a company and public sector accounting. In a company, the investment is spread out over several years through amortization. In the government budget, investments are concentrated in the year in which the expenditure is made. This anachronistic accounting quirk distorts the incentives for public policy. Since infrastructure always represents large ticket items, cash strapped governments tend to slash them in bad times and tend to be very conservative in their planning.

In the past two decades a way to circumvent this practice has been offered by Private Public Partnerships (PPP) in which a public infrastructure, be it a road or a hospital, is funded and planned by a government authority, but its construction is assigned to a private company or a consortium which finances the project through the market, often enjoying a public guarantee or offering as collateral the fees which the government will pay for its use or the toll collected from users.

Two advantages arise: on the one side the government budget is not burdened with large outlays, while on the other the market will be induced to scrutinize the cost-benefit equation and therefore will give its verdict on the economic viability (hopefully weeding out white elephants and politically motivated projects). In the MENASA region there has been some notable progress in many countries, but equally striking is the fact that countries in the GCC (and Libya) where the institutional framework is more propitious and capital is abundant, PPP are virtually absent. This compares unfavorably with a country like Turkey, but also with a country such as Pakistan or Bangladesh.

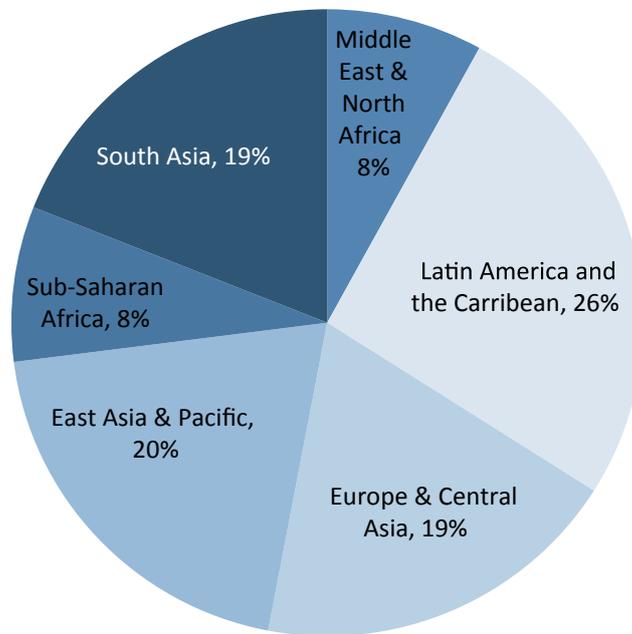
One of the main drawbacks of PPP projects in the region⁹ are the absence of a framework for

privatization and PPP, notably the absence of relevant laws and regulations. The OECD in 2006 developed a set of principles for international investor participation in infrastructure after identifying that the cause for failures was not project specific, but short-comings in investment environments, capacities and attitudes. Additionally, the introduction of a PPP law would benefit the legal and regulatory framework. Egypt has enacted a new PPP law on 1 July 2010, Syria, Lebanon and Jordan already have or are developing specific PPP laws, while Algeria and Morocco have a PPP program without a specific law. Egypt's law establishes a PPP Central Unit (falling under the auspices of the Ministry of Finance) which has overall responsibility for the country's PPP program and if projects are approved, they are included in the relevant ministry's five year strategic plan. The PPP law requires that contracts range from five to 30 years, unless it is in the public interest for them to be longer. While provisions allow for a change in tariffs, the project company has to be compensated, and there is a prohibition on appropriation of project assets by the government. The existing gap elsewhere –notably in the GCC- underscores the need to develop a credible PPP program with a clear policy framework such that countries across the region can capitalize their enhanced ability to attract foreign investment.

The ensuing vision blends public and private on the full spectrum of dimensions associated with infrastructure service delivery, hopefully injecting a dose of pragmatism and reducing the scope for wasteful undertakings. The public sector is expected to clear the administrative and organizational hurdles while the private sector delivers on construction, operations and to a large extent, financing in sectors such as telecoms, energy generation and transport services where fees can be more easily forecast.

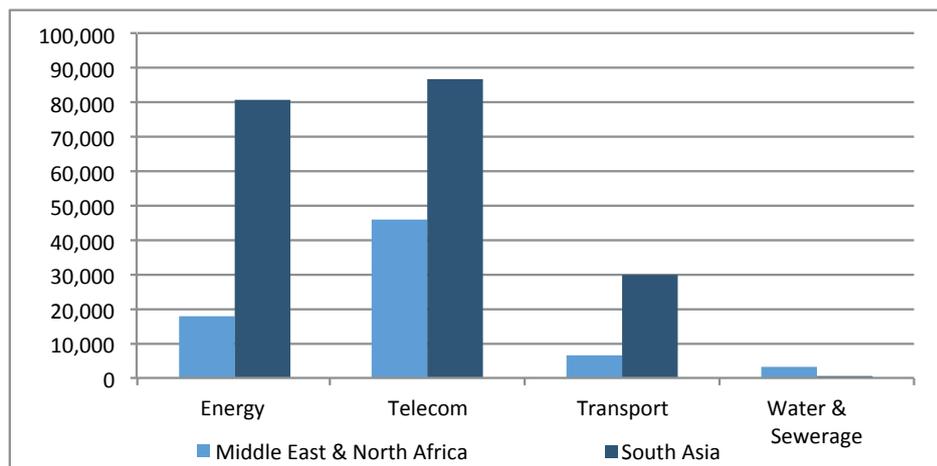
⁹ For example five countries are landlocked Kazakhstan, the Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan, while Azerbaijan has only a coast on the Caspian Sea, which raises a key issue with transport infrastructure to overcome centuries of isolation.

Fig. 8 - Investment commitments to infrastructure projects with PPP in developing countries, by region, 2000-09



Source: World Bank and PPIAF, PPI Project Database

Fig. 9 - Investment commitments to infrastructure projects with PPP in MENA and South Asia, by type of project, 2000-09 (in US\$ mn)



Source: World Bank and PPIAF, PPI Project Database

Due to persisting economic uncertainty and intense competition for assets, fund managers are increasingly searching for opportunities in exotic (for them) locations far from the developed European and North American markets and in search of higher returns, while compensating for the higher learning fixed costs and the sometimes adverse conditions. As a reflection of this new attitude fund managers express a willingness to invest in emerging markets but expect substantially higher returns (Fig. 7).

Public-private partnerships (PPP) were initially driven by limitations in public funds to cover investment needs and also in an effort to increase the quality and

efficiency of public services. PPPs present a number of advantages for the public sector including the ability to raise additional finance in case of budgetary restrictions/ deficits, reduce cost and increase quality to the public (through use of the private sector) and the ability to speed up infrastructure development.

In a PPP, there exists significant risks relating to the costs of design and construction of the facility, the market demand for the facility (usage), or service provided by the facility (including its availability for use) and the facility's operation and maintenance costs. These are often transferred from the public authority to the project company.

Public and private provision of infrastructure

Contract type	Public project					
	Public-private partnership					
	Public-sector procurement	Franchise	Design-Build Finance-Operate (DBFO)*	Build-Transfer-Operate (BTO)**	Build-Operate-Transfer (BOT)***	Build-Own-Operate (BOO)
Construction	Public sector (2)	Public sector (2)	Private sector	Private sector	Private sector	Private sector
Operation	Public sector (3)	Private sector	Private sector	Private sector	Private sector	Private sector
Ownership (1)	Public sector (4)	Public sector	Public sector	Private sector during construction, then public sector	Private sector during contract, then public sector	Private sector
Who pays?	Public sector	Users	Public sector or users	Public sector or users	Public sector or users	Private sector offtaker public sector (5) or users
Who is paid?	n/a	Private sector	Private sector	Private sector	Private sector	Private sector

*Also known as Design-Construct-Manage-Finance (DCMF) or Design-Build-Finance-Maintain (DBFM)

** Also known as Build-Transfer-Lease (BTL), Build-Lease-Operate-Transfer (BLOT) or Build-Lease-Transfer (BLT)

***Also known as Build-Own-Operate-Transfer (BOOT)

(1) In all cases, ownership may be in the form of a joint venture between the public and private sector

(2) Public sector normally designs the Facility and engages private-sector contractors to carry out construction on its behalf (design-bid-build)

(3) Public sector may enter into service (outsourcing) contracts (for operation and maintenance) with private-sector contractors.

(4) Ownership maybe through an independent publicly-owned Project Company, ie. 'Public-Public Partnership'.

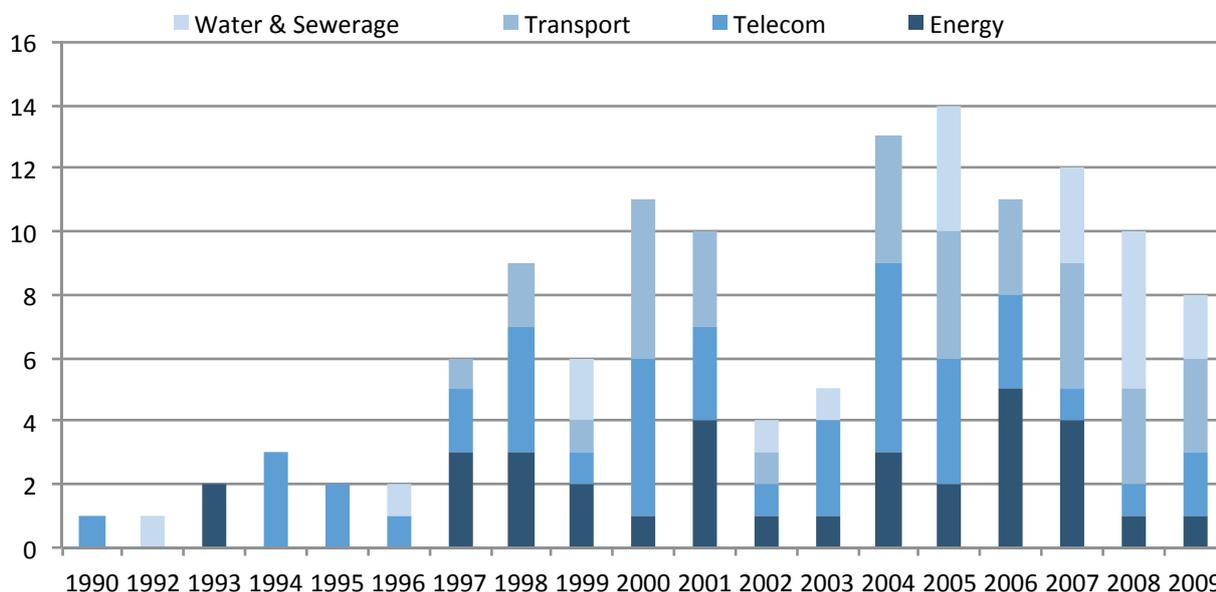
(5) The BOO Contract form applies to PPPs in the minority of cases where ownership of the Facility does not revert to the Public Authority at the end of the PPP Contract.

Source: Yescombe, E. R (2007): "Public-Private Partnerships: Principles of Policy and Finance", Elsevier Finance.

The year 2009, following the crisis-hit 2008, showed selective recovery with a pickup in the second half of the year. Investment commitments to new infrastructure projects with private participation reaching closure in developing countries grew by 15% yoy in Q4 2009 and by 15% yoy in 2009 as a whole. These growth

rates indicate a strong recovery from the 45% yoy drop in investment commitments in 2H 2008. Investments however concentrated in large energy projects in a few countries - Brazil, China, India, and Turkey¹⁰. Among sectors, only energy had investment growth in 2009 as a whole (+40% yoy), picking up because of activity in

Fig 10 - Number of projects by Primary Sector: MENA region



Source: World Bank and PPIAF, PPI Project Database

Private activity in infrastructure in the MENA region in 2009 was concentrated on **Egypt, Algeria and Morocco**, which accounted for more than 60% of total investments in the region.

- Telecom was the most successful sector, attracting 69% of regional investment (or \$42.3 bn) and implementing 30 projects in 11 countries.
- Energy accounted for 14% of regional investment

(or \$8.8 bn) which was directed to 23 projects in 9 countries.

- Transport was the third most active sector, accounting for 11% of regional investment (or \$6.6 bn) directed to 29 projects in 9 countries.
- Water and sanitation accounted for 5% of regional investment (or \$3.3 bn) which was directed to 16 projects in 3 countries: Algeria, Jordan and Lebanon.

¹⁰ These countries were able to maintain liquidity in their markets thanks to countercyclical measures by government and domestically generated liquidity. If these countries were excluded, investment in developing countries would have fallen by 58% in the fourth quarter of 2009 compared with the same period of 2008, and by 32% in 2009 as a whole.

Institutional Capital as Magnet for Capital

Despite the high expected returns and demand for asset backed investments (especially in Islamic finance) in many emerging economies and developing countries, the role of the private sector in the delivery of large infrastructure is disappointingly marginal. The recent history of infrastructure financing is marred by misconceived attempts to lure private investors into supplying capital for public projects with long gestation periods, subject to construction risks, political hazard and uncertain revenues. The misconception runs over several issues. Often government officials have only a vague understanding of the parameters which international investors adopt in their investment decisions. They are inclined to believe that a welcoming attitude and a host of promises is all that is required to attract funding.

However reality is different. Private capital is deployed where the return/risk ratio is highest and measurable. Fund managers undertake a thorough due diligence encompassing both economic risks and what can be broadly described as the political risk, which essentially depends on the quality of the public sector and its governance and the "rule of law". Decision on whether to take on a new project involves a forecast over a horizon of 10 - 30 years, so it is unlikely that in the

absence of a solid institutional framework with legal and regulatory safeguards, investors will be convinced by a mere declaration of intent.

Countless presentations to investors, the so-called road shows, often organized and conducted by well paid consultants, focus on aspects such as the high growth rates and prospects, the young population, natural resources, educated population, a few success stories, possibly a favorable tax regime, cheap labor and so on. These are hardly trivial aspects, but they must be considered at best necessary, but not sufficient conditions to attract private capital.

What investors are looking for is to minimize political risk, broadly defined, which spans the protection of property rights, the enforcement of contracts, the recourse against arbitrary decisions by the government, independence of the judiciary, protection against partial or total expropriation, clarity in the regulations which materially affect the return on investments, labor market rigidity, regulatory clarity, unambiguous decision making process, timeliness in implementation of measures, and last but not least, corruption among officials.

DIFC-MIGA Guarantee: The Dubai International Financial Centre (DIFC) and the Multilateral Investment Guarantee Agency (MIGA), a member of the World Bank Group, signed a Memorandum of Understanding (MoU) to promote foreign direct investment (FDI) into the Middle East and North Africa in October 2009. The MoU paves the way for exploring opportunities for co-branding of existing political risk insurance products, joint business development efforts, and development of a mutual referral process.

Public and private sector enterprises benefit from improved access to cross-border financing as a result of MIGA's provision of political risk insurance, which also helps international investors mitigate non-commercial risks. MIGA can insure eligible investments made by investors in a MIGA member country into a developing member country. The types of investments the agency can cover include equity, shareholder loans, certain shareholder loan guarantees, management contracts, asset securitizations, capital market bond issues, and leasing, services, franchising and licensing agreements. The political risks MIGA cover include currency inconvertibility and transfer restrictions; expropriation; war, terrorism, and civil disturbance; breach of contract; and non-honoring of sovereign financial obligations.

MIGA and DIFC Collaborate to Promote Foreign Direct Investment in Middle East and North Africa | Dubai International Financial Centre

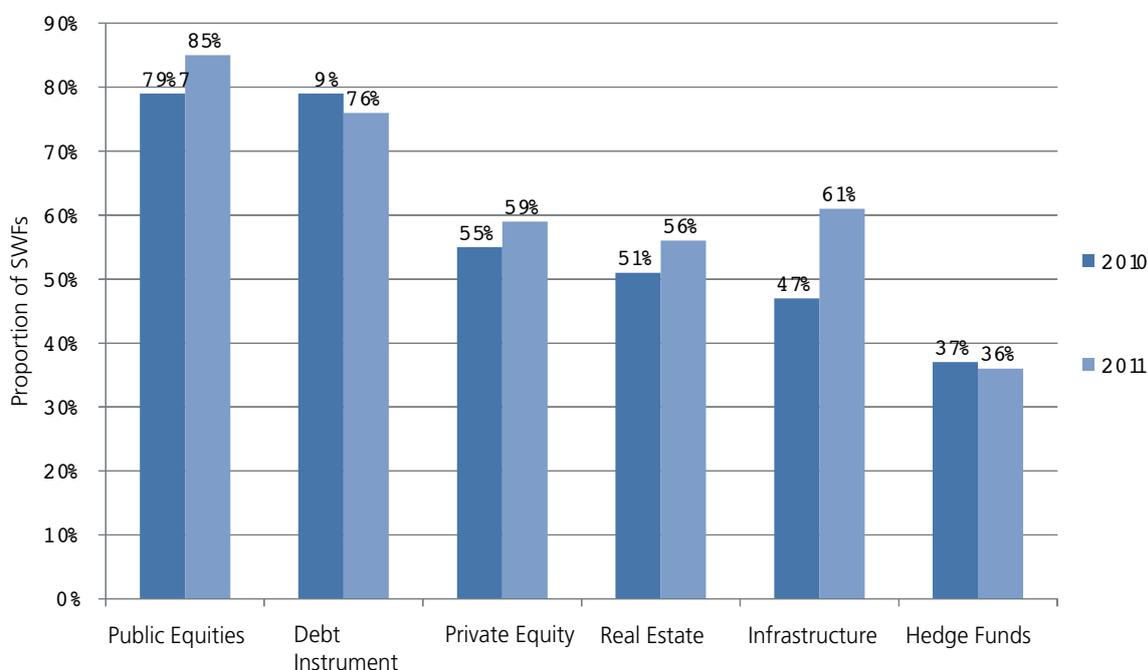
This set of conditions forms what can be defined the “institutional capital” of a country or a region and is by far the most decisive factor to attract capital. It is this area where policy makers need to concentrate to drive the flow of capital. Currently there is an abundance of capital in international markets in search of sound investment opportunities. Institutional capital is a fundamental issue also for the donor community which is expected to be a central actor in contributing to public investment efforts, at least in the poorer countries which is hampered by the low initial capacity of its population to pay the full price of the services.

Preqin, a consultancy, in its 2011 Sovereign Wealth Fund Review, revealed that the proportion of SWFs investing in infrastructure has risen from 47% in 2010 to 61% at the beginning of 2011, while real estate and private equity have risen from 51% to 56% and from 55% to 59% respectively, over the same time period.

Finally, it is notable that the financial crisis is opening a myriad of ‘South-South’ cooperation channels. Financial links are deepening with China and the GCC assuming a leading role. Chinese companies are venturing into remote areas thanks to the experience gained in modernizing China’s own infrastructure and their less capital-intensive technology which suits economies endowed with abundant cheap labor. Furthermore they enjoy two competitive advantages compared to competitors in developed economies: lower labor and material costs and access to substantial, long-term financing which in the shell-shocked western banking sector remains constrained.

While the focus of the GCC countries remains within MENASA and countries like India, their SWFs and independent investment funds, are increasingly taking advantage of cultural, historical and religious ties to forge ventures outside the region, in countries such as Malaysia and Indonesia with large Muslim populations.

Fig. 11 – Proportion of Sovereign Wealth Funds Investing in Each Asset Class



Source: Preqin 2011 Sovereign Wealth Fund Review.

Role of IFIs & Development Banks & Islamic Finance in Infrastructure Financing

International Financial Institutions (IFIs) historically have been well placed to develop financing structures which encourage private sector participation: structures which are simple, cost-efficient and can be easily replicated. Careful design, innovative use of the wide variety of IFI instruments and risk allocation are keys to success. IFIs should not only share the general project risk with private partners (through equity or non-recourse debt), they should also assume those risks that they are well placed to mitigate. These tend to include general economic and political risks and risks arising from shifts in regulatory regimes.

Another under-utilized potential source of infrastructure financing is Islamic finance. Given the focus on asset-backed and equity-based financing, the infrastructure sector provides an ideal opportunity for Islamic finance. The current infrastructure projects in the Gulf (in the region of some \$ 2.9 trillion, as of Apr '11) and Asia regions are an unprecedented opportunity to create an Islamic financial market.

Given the size of infrastructure projects in the region, it is both opportune and desirable to raise this financing through securities backed by future cash flows from the infrastructure services, as is typical of project financing

schemes. In this region, infrastructure should be financed through the debt markets and no longer rely on oil & gas revenues. The role of governments, which were the largest source of infrastructure financing, has changed post crisis - given fiscal constraints and funding for long-gestation projects, it is necessary that governments enter the project finance markets. Additionally, state-owned infrastructure banks and multilateral agencies will continue to play an important role in financing infrastructure projects, but the coming years will redefine the involvement of the private sector.

The DIFC will play a key role by encouraging active participation of the private sector in infrastructure financing through the development of deep and liquid local currency debt markets. Additionally, given the region's young and fast-growing population, housing finance is another key issue that needs to be addressed: a mortgage-backed securities market has to be developed which could allow banks to better manage their exposure to the real estate market. Also, it would be desirable to institute a mortgage guarantee scheme, which could insure against defaults on payments linked to unforeseeable events such as premature death or unemployment.

Infrastructure & Islamic Finance

Core Islamic finance instruments can each be packaged together in whole or in part (as below), in a wide variety of ways to fund any infrastructure projects.

Istisna: To finance assets which do not exist yet - suitable for the construction phase of infrastructure projects.

Ijara: To lease a variety of built or partially built assets;

Murabahah: Cost plus finance to fund the purchase of commodities needed to build the infrastructure facilities;

Tawarruq (Commodity Murabahah): Tawarruq is used to provide cash to the Project Company for its use. Under organized tawarruq, the Funding Company buys a commodity from a broker and sells it to the Project Company at a mark-up. The Funding Company then sells the commodity to another broker as an agent of the Project Company and delivers the payment to the latter. While the Project Company gets cash on the spot, the price due to the Funding Company is paid in the future in installments.

Musharakah: To act as the joint venture partnership vehicle - that will share the profits and/ or any losses. Musharakah is a partnership in which all partners contribute both capital and labour; all the partners are entitled to participate in the management of the project. Also available is its variant, **diminishing Musharakah**, under which the funding company partners can progressively sell their interests in the partnership to the project company partners.

Sukuk are another easy way to finance infrastructure investments, especially as it provides an alternative to the traditional bank financing. Some suggestions, going forward, in terms of easing infrastructure financing via IF/ Sukuk are:

- Greater clarity documentation, increased standardization, and lower overall complexity;
- Consensus among Islamic scholars around the world, including better issuer and investor education about Sukuk and Sharia compliance generally;
- A liquid secondary market; and
- Clarity in the legal framework, e.g. enforceability of collateral.

Focus on MENA Infrastructure

In the MENA region infrastructure upgrade has been on an upward trend for the past 15 years. Within this region the GCC countries have accounted for the lion's share of this investment, as they used a windfall in oil revenue to build state of the art infrastructure in an effort to diversify away from oil dependency. This process of transforming oil wealth to set in place the conditions for the launch of a XXI century economy is still in full swing despite the enormous progress so far achieved and the slower pace forced by the financial crisis.

Countries in the MENA region that have gone through years of war (e.g. Iraq, Sudan, Lebanon etc.) are in urgent need of reconstruction including the rebuilding of basic infrastructure, with the recent Middle East turmoil only adding to this burden. For example, poor existing infrastructure conditions and estimating the potential demand in coming years led the Iraqi government to increase its capital budget by 22% this year, allocating close to USD 25bn to spend on capital

projects. Additionally, separate plans by the Ministry of Planning and the National Investment Commission estimate an investment of USD 186bn and USD 150bn over the next five and fifteen years respectively, to be spent on large-scale infrastructure projects (Source: EIU).

The need of the hour is to address the demographic and socio-economic factors which are the root cause of the protests: income and wealth disparities across and within countries of the region; to reconstruct the countries that have collapsed in the past months; and to develop programs that address small and medium enterprises and infrastructure development among others, while leading towards greater economic diversification, employment generation and bridging the wide income gap. There exists a gap in the region of a Reconstruction and Development Bank that could provide the funds and encourage greater private sector participation in this regard.

Table 4 - MENA Infrastructure projects by Primary Sector and Type (USD mn)

Primary Sector	Subsector	Project Count	Total Investment
Energy	Electricity	27	12,813
	Natural Gas	6	4,816
Total Energy		33	17,629
Telecom	Telecom	43	45,828
Total Telecom		43	45,828
Transport	Airports	11	1,913
	Railroads	2	343
	Roads	1	104
	Seaports	20	4,323
Total Transport		34	6,683
Water and sewerage	Treatment plant	11	3,202
	Utility	9	0
Total Water & sewerage		20	3,202
Grand Total		130	73,342

Source: World Bank

Increasingly these investments are financed by PPP with the exception of GCC, Libya and Iran. In 2009, 8 infrastructure projects (investment commitments: \$ 2.2bn) with private participation reached financial

or contractual closure in the MENA. Infrastructure projects implemented in previous years had additional commitments of \$ 3.8bn, bringing total investment in 2009 to over \$6 bn.

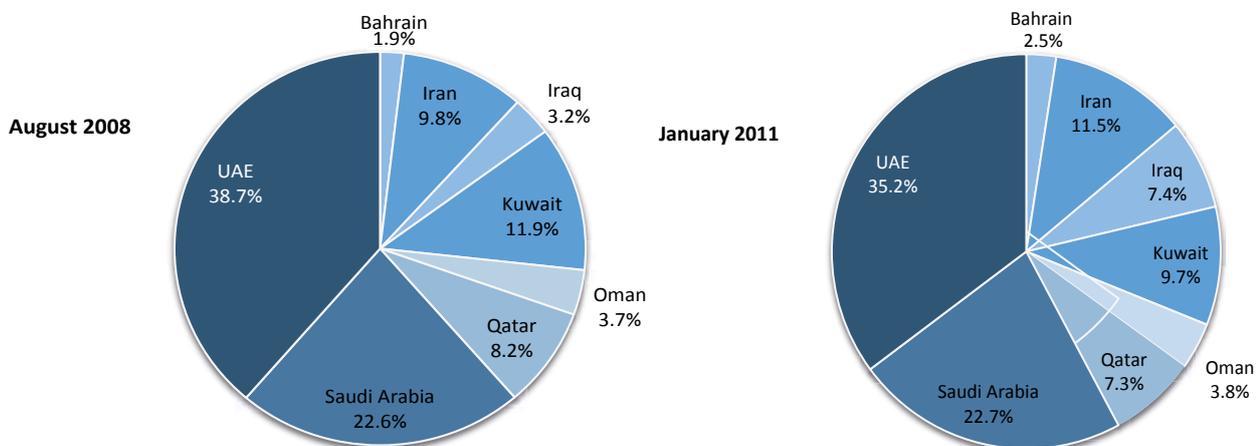
The Making of a XXI century economy in the GCC

The GCC countries have invested heavily in infrastructure an increasing amount of their energy commodity revenues as part of a long term goal to diversify their economy away from dependence on oil and gas extraction. An impressive list of projects has been completed and an even more impressive number is underway which will transform these largely desert territories into a magnet for high value added sectors, such as petrochemicals, logistics and tourism.

The MENASA region was less affected from the financial crisis, thanks to the accumulated budget surpluses which

allowed a continuation of key projects while pushing the less-critical projects to the back-burner. The value of projects completed, under construction and planned in the Gulf increased to US\$2.6 trillion in Jan 2011 as reported by MEED. There continue to be anecdotal evidence of some plans being put on hold - possibly without a formal announcement while some others are proceeding at a slower pace. Actually, the timely delivery of infrastructure projects depends crucially on the quality and quantity of existing infrastructure (e.g. to build a power plant one needs first to build roads to the construction site).

Fig. 12 – GCC Projects by Country



Source: MEED

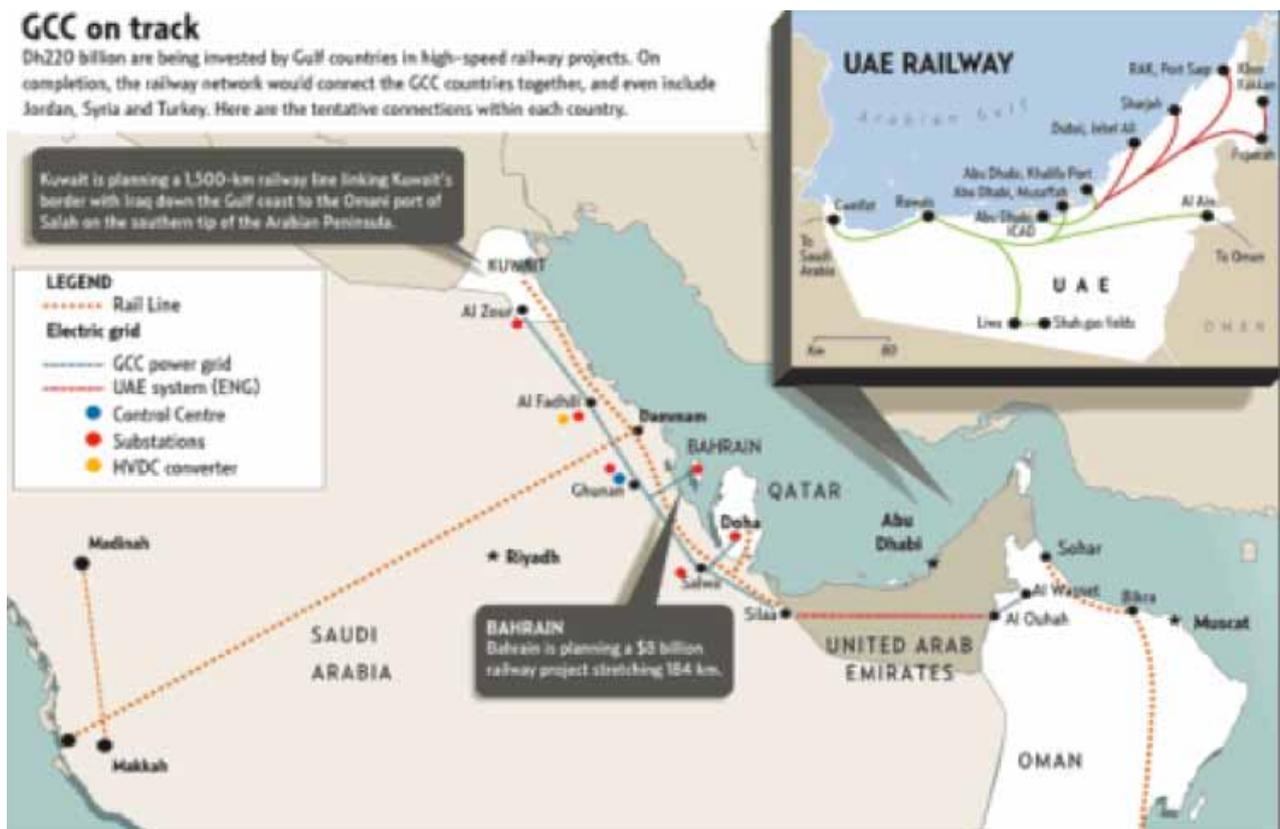
The GCC countries are investing in both national and trans-national regional, massive, infrastructure projects with private sector participation. Eventually, a pan-GCC integrated network is emerging of transport, communications and energy which will propel the GCC to become a regional hub for the MENASA. The networks will support strong growth of both trade in goods and services and international integration and openness.

With the planned GCC railway, GCC Customs Union and GCC Common Market in place, the latest development is that of the UAE joining the second phase of the three-phase GCC power grid which became operational on April 20, 2011. This contribution of AED 800mn by the UAE to the overall AED 5.1bn GCC Power Grid project stands dwarfed in comparison to the USD 1.6bn to be spent on electricity and water networks in UAE's Northern Emirates, announced earlier this year.

Saudi Arabia is the other country increasing spending on infrastructure: in the aftermath of the recent Middle East turmoil the Saudi King announced that 500,000 housing units would be constructed in addition to

building and expanding hospitals. This was in addition to the 10.4% of the overall budget (SAR 580bn) allocated to infrastructure development in the 2011 budget.

Figure 13: GCC Rail & Power Integration



Source: Gulf News

Final Remarks

The major contribution to world growth in the past two decades has come from emerging markets where (1) prudent macroeconomic policies contributed to strengthening economic fundamentals, and (2) infrastructure investment and modernization has been relentless.

Closing the infrastructure gap between the developing and the developed world is the single most important driver of global growth, and is likely to remain so for the coming decade. The success stories of South East Asia, East Europe, Brazil, China and the GCC can be attributed as much to effective public investment as to export driven policies. This process is likely to continue in the foreseeable future on the wings of two powerful engines: demographics and urban middle class expansion in the emerging economies, fueled by trade liberalization and increasing financial sophistication.

Developed economies have been progressively supplanted as an engine of growth over the last decade in one of the most remarkable shifts of economic prominence since the emergence of the United States before World War I. A central chapter in this transition process is being written after the sub-prime mortgages insolvencies in the US ignited the most devastating global financial crisis in living memory. Until the Lehman bankruptcy, a lively argument took place on whether the emerging markets would decouple from developed economies. After the Lehman Brothers bankruptcy the contagion shock proved too powerful to be averted: financial markets and growth tumbled everywhere. However, EMEs have recovered more quickly and there is a clear two-speed growth process with advanced economies living an anemic recovery, while EMEs are growing at pre-crisis levels.

The recent economic history of emerging markets shows that a fundamental role in this process can be attributed to the investments in infrastructure in regions that had remained for centuries cut off from technological advances and market access. Lifted by the transfer of management and technology ignited

by the relocation of factories, productivity gains have been momentous as the migration process has spread them to billions of individuals.

It would be easy to be carried away by optimism. But in times where the policy agenda is dictated by crisis management and economic emergency, the role of economists is to remind that the central effect of infrastructure is not the short term stimulus to growth, but the long lasting contribution to a transformation of economies and societies, to the upward shift in productivity and in productivity growth. In this regard it is of fundamental importance to point out to policy makers that public capital produces its most durable benefits when it exerts a positive effect on private investment by widening the business opportunities or by reducing the cost of inputs. In short, when public investments increase, the competitiveness of an economy is boosted.

Infrastructure projects are not an end in themselves: there lies always the temptation to treat the achievements in this field as a showcase of national prestige. Nevertheless infrastructures are a means for ensuring the delivery of goods and services that promote prosperity and growth, greater rural-urban equality, and contribute to quality of life and the health of the environment. However, significant social and economic benefits will be long lasting only if projects are scrutinized through a rigorous cost-benefit analysis.

Infrastructure investment can be the key to inclusive development, bringing together economic geography and social geography by transforming regions that are less developed. We have also learned that infrastructure will tend to form integrated systems interacting ever more closely with one another, fostering interdependency and complementarities. It is also true that interdependency can generate vulnerability, and thereby posing new risks and challenges as the volcanic eruption in Iceland highlighted or the nuclear incident in Fukushima.

Isolating the effect on variables like GDP, productivity or public health stemming from a specific infrastructure investment is difficult, but a host of research however points to returns that are in the order of 19%-20% for the emerging countries. Infrastructure is a sector that can be attractive for the glut of savings in search of sound investments.

But a pre-condition for attracting these funds is an institutional framework where properties rights and contractual arrangements are clear and easily enforceable. The lack of an institutional framework in many MENASA countries and notably the GCC, has negatively affected the private sector's role in the

delivery of large infrastructure. Creating a framework that allows for privatization and PPP should be high on the economic policy agenda.

With the ever-growing demand for infrastructure development and the potential high returns as highlighted by the empirical evidence, in the MENASA region the private sector involvement is entering the equation. Especially sovereign wealth funds have both the capital and resources to play a greater role in this field. In fact nearly half of all SWFs inside and outside MENASA are actively investing in the infrastructure sector and this is likely to increase as demand continues to grow.

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Appendix A - Infrastructure in India

India is the largest country in the MENASA region, accounting for roughly 60% of its population and displaying a growth performance in the 7-9% range over several years, by and large unfettered by the financial crisis. Given the rising middle class and subsequent increased demand for infrastructure, it has the potential to drive infrastructure investment for several years.

India's infrastructure industry presents a striking dichotomy: on the one hand it has some of the biggest potential for growth and opportunities for investment in the world, but on the other it suffers from chronic problems of weak decision making, governance, red tape, execution timing and protection of property rights.

Facts: Urbanization in India	Facts: Development Indicators
<p>Most Urbanized States: Tamil Nadu 43.9%; Maharashtra 42.4%; Gujarat 37.4%</p> <p>3 out of world's 21 mega cities: Mumbai (19 mn); Delhi (15 mn); Kolkata (14 mn)</p> <p>Large Cities: 23 in 1991; 40 in 2001</p> <p>Urban Pop.: 25% of 850 mn in 1992; 28% of 1,030 mn in 2002</p> <p>Estimated Urban Pop. by 2017: 500 mn</p> <p>% of Urban Residents who are Poor: About 25%</p> <p>Slum Population: About 41 mn in 2001</p> <p>Estimated Slum Pop. by 2017: 69 mn</p>	<p>Population ages 15-64 (% of total): 63.5 (2008); 60.7 (2000)</p> <p>Age dependency ratio (% of working-age pop.): 57.5 (2008); 64.7 (2000)</p> <p>Literacy rate: 62.8(2006) ; 48.2 (1991)</p> <p>Telephone lines (per 100 people): 3.3 (2008); 0.67 (1991)</p> <p>Electric power consumption (kWh per capita): 542.1 (2007); 275.8 (1990)</p> <p>Improved sanitation facilities, urban (% of urban population with access): 52 (2006); 44 (1990)</p> <p>Improved water source, urban (% of urban population with access): 96 (2006); 90 (1990)</p> <p>Net migration: -1,540,000 (2005); -373,995 (1990)</p>

Source: The World Bank

Table A1 - India: Infrastructure Indicators

	1990	2000	2007	2008
Air transport, freight (million ton-km)	663	548	968	1,234
Air transport, passengers carried	10,862,200	17,299,483	51,897,450	49,877,935
Air transport, registered carrier departures worldwide	125,800	198,426	569,033	592,292
Container port traffic (TEU: 20 foot equivalent units)	-2	,450,656	7,376,733	6,623,256
Rail lines (total route-km)	62,367	62,759	63,327	63,327
Railways, goods transported (million ton-km)	235,785	305,201	480,993	521,371
Railways, passengers carried (million passenger-km)	295,644	430,666	694,764	769,956
Road density (km of road per sq. km of land area)	--		1,001	-
Roads, total network (km)	2,000,000	3,316,078	3,316,452	-

Source: The World Bank

This implies that India's soft infrastructure sectors (like telecom, air and port services) have performed well - helping the country grow faster while also improving integration with the world market. However, physical infrastructure like road, rail and power connectivity

grew comparatively slowly due to governance weakness and decision making stalemate. The Deepak Parekh Committee on Infrastructure Finance has identified certain key constraints to address the speed of investments, as below:

Macroeconomic Challenges	Institutional Challenges
<p>Nature of savings – The overall savings are large but there is shortage of long term savings.</p> <p>Fiscal discipline – Within the constraints of the Fiscal Responsibility & Budget Management laws, there will be limited scope for central and state governments to raise their support budgetary as well as guarantees to infrastructure (as share of GDP) in the coming years.</p>	<p>Commercial Banks – With the impending constraints on government spending (including on infrastructure) due to the FRBM laws at a time when infrastructure spending is sought to be accelerated, the banking system's exposure to infrastructure would have to rise significantly as a % of GDP. It is possible that sector exposure norms and maturity mismatches may prevent banks from meeting this challenge.</p>
<p>Availability of risk capital – Key constraints in infrastructure financing is the lack of availability of risk capital to support debt raising.</p>	<p>Insurance companies – Eligible investors such as insurance companies have invested limited amounts in private infrastructure development. This can be attributed to regulatory restrictions, underdeveloped corporate bond markets and the absence of efficient credit risk transfer mechanisms.</p>
<p>Concentration of risk – The financing risks of some of the infrastructure sectors, especially the ones that require large amounts of funds, have tended to get concentrated in the hands of few financiers.</p>	<p>Infrastructure focused central PSUs – It may be noted that these PSUs already play a significant role in infrastructure financing (accounting for nearly 40% of India's infrastructure spending) and would have to continue to do so in future.</p>

It is clear that there is substantial need and demand for the Indian infrastructure sector, which, in other words, offers large investment opportunities. The potential for infrastructure investment becomes

apparent from the two tables below: one, on the sectoral infrastructure deficit and another, on planned investments in core infrastructure sectors, as outlined by the Planning Commission.

Indian Infrastructure Deficit

Highways: 70,548 Km of NH (2% of network, 40% of traffic): only 17% Four-lane; 53% Two-lane; and 30% Single-lane

Ports: Inadequate berths, rail / road connectivity are constraints

Airports: Inadequate capacity: Runways, aircraft handling capacity, parking space & terminal buildings

Railways: Old technology; saturated routes: slow average speeds (freight: 22 kmph; passengers: 50kmph); low payload to Tare ratio (2.5)

Power: 14% peaking deficit and 11% energy

shortage; 27% T&D losses; absence of competition; and inadequate private investment

Source: <http://infrastructure.gov.in>

Table A2 - Planned Investments in Core Infrastructure Sectors: 2008-12

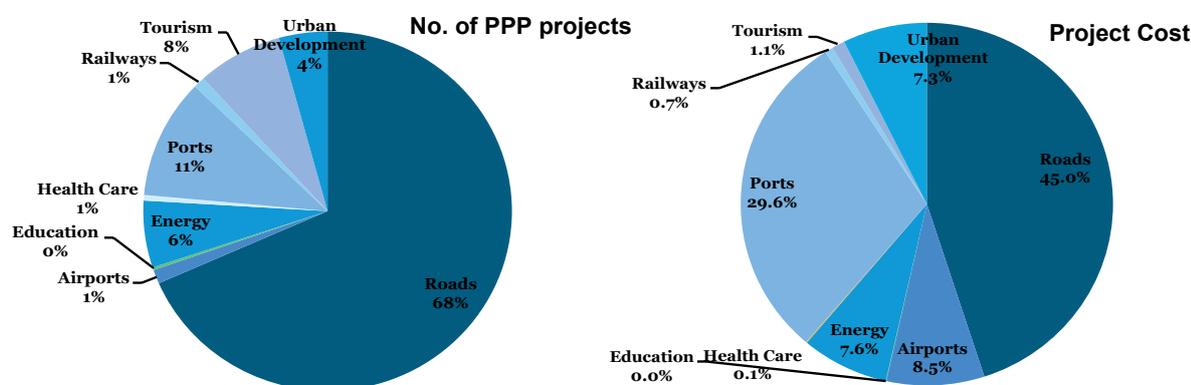
Sector	2008	2009	2010	2011	2012	Total
Power	18	23	28	36	45	150
Roads	13	13	14	17	19	76
Railways	8	10	12	14	19	63
Water	6	8	9	12	14	49
Ports	3	3	3	4	5	18
Airports	1	1	2	2	2	8
Storage	1	1	1	1	1	5
Gas	1	1	1	1	1	5
Irrigation	7	8	11	13	16	55
Core infrastructure	58	68	81	100	112	429
Telecom	8	10	12	15	20	65
Infrastructure total	66	78	93	115	142	494

Source: Indian Planning Commission

Many of the new investments (such as gas pipelines) seem viable on commercial terms and often suitable for partnership with private investors. For many other infrastructure investments, PPP is emerging as the preferred instrument¹¹, where the private sector gets its normal financial rates of return while the public sector partner provides concessional funding based on the long-term direct and indirect benefits to the economy.

There is an ongoing debate as to the capability of India to finance its own infrastructure - the IMF view is that to achieve this goal, India needs to rethink its capital account framework and quickly expand the country's real and financial absorptive capacity, including the development of a corporate bond market. Goldman Sachs however recently released a paper wherein the argument was that robust domestic corporate, banking, household, government and external sector balance sheets could support India's infrastructure

Fig. A1 - Ongoing PPP Projects & Costs in India



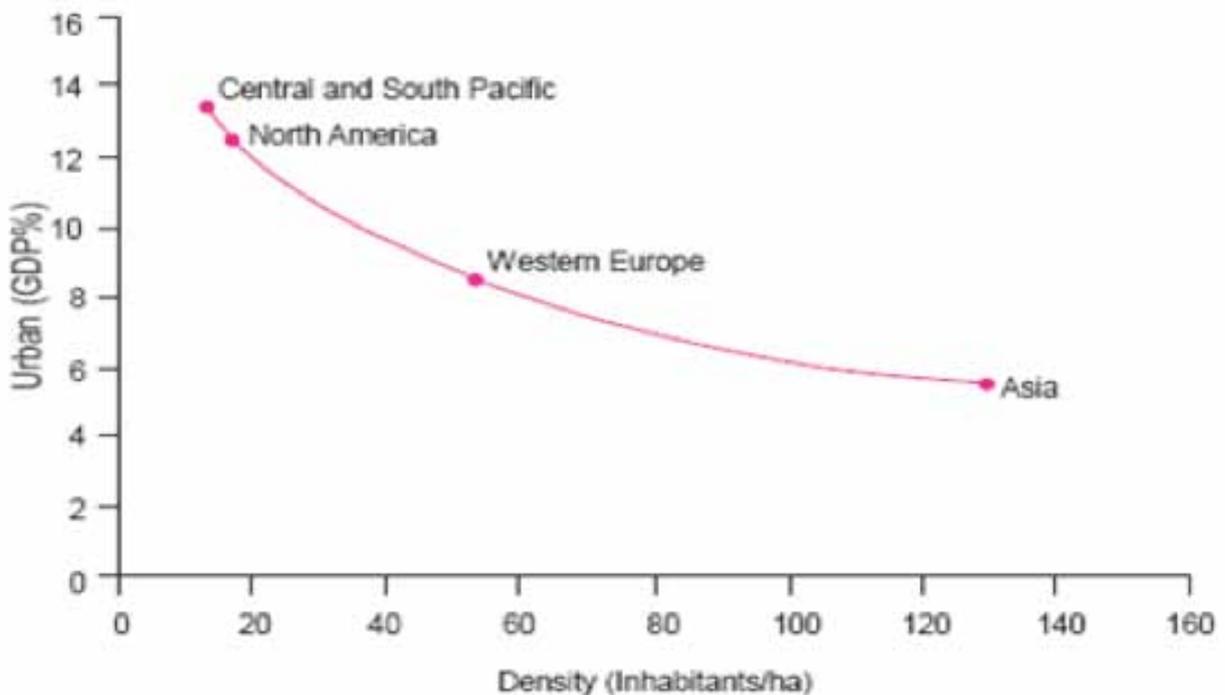
Source: PPP India

¹¹ New instruments such as Viability Gap Funding (VGF) through a special purpose vehicle (SPV) set up recently by the Government of India to fund mega infrastructure projects may be relevant for other MENASA countries as well.

The bottom line is that India has a monumental infrastructure shortfall and the rising middle class, young and growing population will aggravate the situation. While infrastructure requirements can be met through both the public and private sector – through joint ventures, cross-listing on exchanges and infrastructure funds – there is still a long way ahead. India needs to reinforce the enabling environment for private investment, improve on the delivery of public sector projects, adopt standardized documents and processes for accelerating competitive investment flows, leverage budgetary resources & multi-lateral loans for PPPs, accelerate the roll-out of PPP projects, with the objective of creating sustainable world class infrastructure.

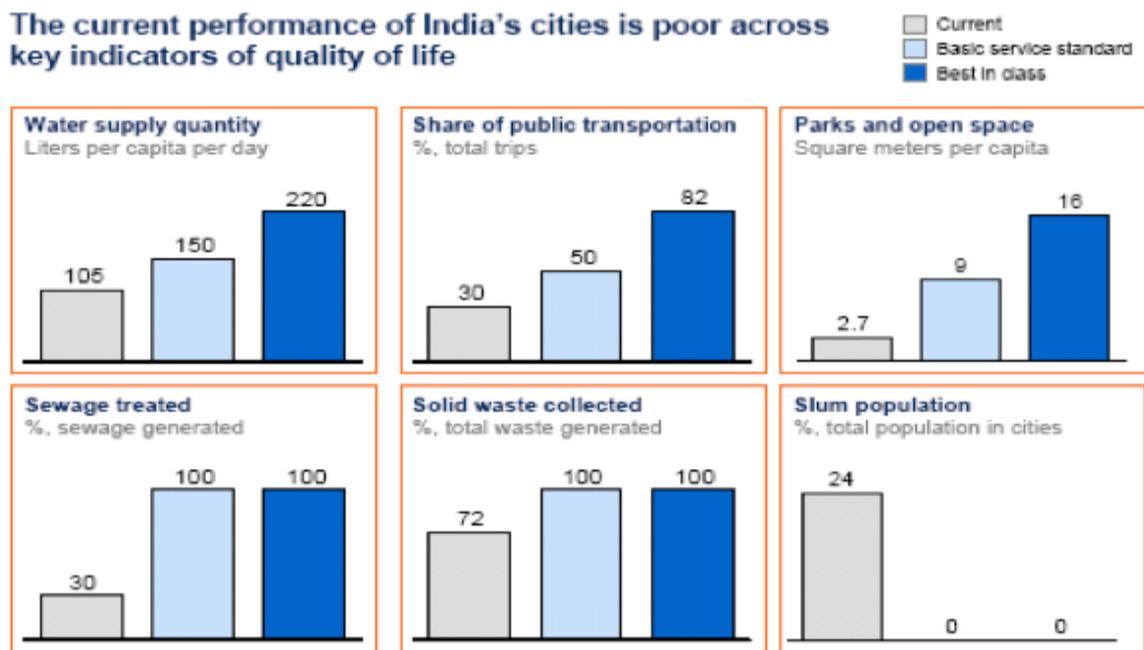
But undoubtedly what is at stake in India is a huge leap forward. The lesson from history is a powerful reminder of the potential. India's rail expansion in the 1860s reduced transport costs by about 80%, equalizing prices across districts which were often 8 or 10 times higher than in others with the occurrence of famines rather common but unavoidable due to lack of transport system. The rail system and the coefficient of variation of wheat and rice prices fell from more than 40 percent in 1870 to below 20% in the decade before World War I.

Fig. A2 - Cost of Urban Transportation: International Scenario



Source: UITP (1995)

Fig. A3 – Quality of Infrastructure Services in India



SOURCE: United Nations; press search; City Development Plans; The Energy and Resources Institute; Planning Commission; Census 2001; Central Pollution Control Board; McKinsey Global Institute analysis

Appendix B - Statistical Appendix

Table B1 – Fertility rate in selected MENASA countries

	1996			2000			2008		
	Fertility rate	Popu. 15-64 (% of total)	Age dependency ratio (% of working-age population)	Fertility rate	Popu. 15-64 (% of total)	Age dependency ratio (% of working-age population)	Fertility rate	Popu. 15-64 (% of total)	Age dependency ratio (% of working-age population)
Algeria	3.2	57.6	73.6	2.6	61.7	62.0	2.3	68.1	46.9
Azerbaijan	2.1	61.3	63.1	2.0	63.2	58.3	2.3	69.1	44.7
Bahrain	2.9	67.4	48.3	2.6	69.1	44.7	2.2	71.4	40.1
Bangladesh	3.5	57.3	74.5	3.0	59.8	67.2	2.3	64.7	54.7
Egypt, Arab Rep.	3.6	56.6	76.8	3.3	58.8	70.0	2.8	63.1	58.4
India	3.6	59.6	67.9	3.3	60.7	64.7	2.7	63.9	56.5
Iran, Islamic Rep.	2.9	57.1	75.0	2.2	63.4	57.8	1.8	71.1	40.7
Iraq	5.5	52.9	88.9	5.0	53.6	86.4	3.9	55.6	79.7
Jordan	4.6	56.8	76.0	3.9	57.7	73.4	3.4	61.9	61.6
Kazakhstan		63.4	57.7	1.8	65.5	52.6	2.6	69.2	44.6
Kuwait	2.8	71.2	40.5	2.4	72.6	37.7	2.2	74.4	34.4
Kyrgyz Republic	3.0	57.3	74.5	2.4	59.6	67.9	2.8	65.4	52.8
Lebanon	2.8	62.0	61.4	2.4	62.7	59.4	1.8	67.4	48.4
Libya	3.5	60.4	65.4	3.2	64.5	55.1	2.6	65.6	52.4
Morocco	3.2	58.9	69.8	2.7	61.7	62.2	2.3	66.3	50.9
Oman	5.5	58.5	71.0	4.4	61.1	63.7	3.0	65.6	52.5
Pakistan	5.2	53.4	87.4	4.7	55.1	81.6	3.9	59.0	69.4
Qatar	3.6	72.1	38.6	3.1	72.9	37.2	2.4	82.9	20.6
Saudi Arabia	4.9	56.5	76.9	4.2	59.3	68.7	3.0	64.7	54.6
Sri Lanka	2.2	64.9	54.0	2.2	67.0	49.2	2.3	68.3	46.5
Sudan	5.6	53.9	85.7	5.1	54.6	83.3	4.1	57.3	74.6
Syrian Arab Republic	4.2	53.0	88.7	3.8	56.4	77.4	3.1	61.8	61.8
Tunisia	2.5	60.6	65.0	2.1	63.7	57.1	2.1	70.0	42.8
Turkey	2.7	62.6	59.8	2.4	64.2	55.9	2.1	67.3	48.6
Turkmenistan	3.3	56.8	76.0	2.8	59.4	68.3	2.4	66.3	50.9
United Arab Emirates	3.2	71.8	39.4	2.7	75.1	33.1	1.9	79.8	25.2
Uzbekistan	3.3	55.8	79.3	2.6	58.3	71.4	2.7	66.2	51.0
Yemen, Rep.	7.0	48.0	108.3	6.3	49.4	102.6	5.1	53.9	85.7

Source: DataBank by World Bank <http://databank.worldbank.org>

Table B2 – Investments with Private Participation in Selected Sectors

current US\$	2001			2006			2009		
	Energy	Telecoms	Transport	Energy	Telecoms	Transport	Energy	Telecoms	Transport
Algeria	na	368500000	103860000	2320000000	702000000	0	na	398000000	108000000
Azerbaijan	230000000	17000000	na	na	413600000	na	na	207900000	na
Bahrain	na	na	na	na	na	na	na	na	na
Bangladesh	483000000	61300000	na	17800000	1113000000	0	64630000	372000000	0
Egypt, Arab Rep.	678000000	391600000	270000000	na	3751000000	na	na	1791000000	na
India	235300000	3445300000	343000000	5330050000	6829200000	9828970000	22871750000	9531600000	3629950000
Iran, Islamic Rep.	na	na	na	na	0	na	na	483000000	na
Iraq	na	na	na	350000000	90000000	na	na	447000000	na
Jordan	na	192100000	na	na	363600000	705000000	465000000	164000000	na
Kazakhstan	na	645000000	na	na	635200000	na	0	596300000	na
Kuwait	na	na	na	na	na	na	na	na	na
Kyrgyz Republic	na	5000000	na	na	35900000	na	na	0	na
Lebanon	na	53800000	na	na	0	na	na	0	na
Libya	na	na	na	na	na	na	na	na	na
Morocco	689000000	268000000	na	na	750600000	na	na	240000000	na
Oman	na	na	na	na	na	na	na	na	na
Pakistan	na	60000000	na	297600000	2473000000	40000000	1479500000	1252000000	na
Qatar	na	na	na	na	na	na	na	na	na
Saudi Arabia	na	na	na	na	na	na	na	na	na
Sri Lanka	132000000	10800000	na	na	336600000	na	na	421000000	na
Sudan	na	0	na	na	706300000	30000000	na	357000000	na
Syrian Arab Republic	na	161000000	na	na	45000000	37000000	na	108000000	45000000
Tunisia	na	na	na	na	2343000000	na	na	287000000	na
Turkey	1700000000	197000000	na	247050000	1991700000	217000000	4315000000	3908000000	0
Turkmenistan	na	na	na	na	16300000	na	na	52000000	na
United Arab Emirates	na	na	na	na	na	na	na	na	na
Uzbekistan	na	130200000	na	na	90000000	na	na	166900000	na
Yemen, Rep.	na	130000000	na	15790000	270800000	na	na	50000000	na

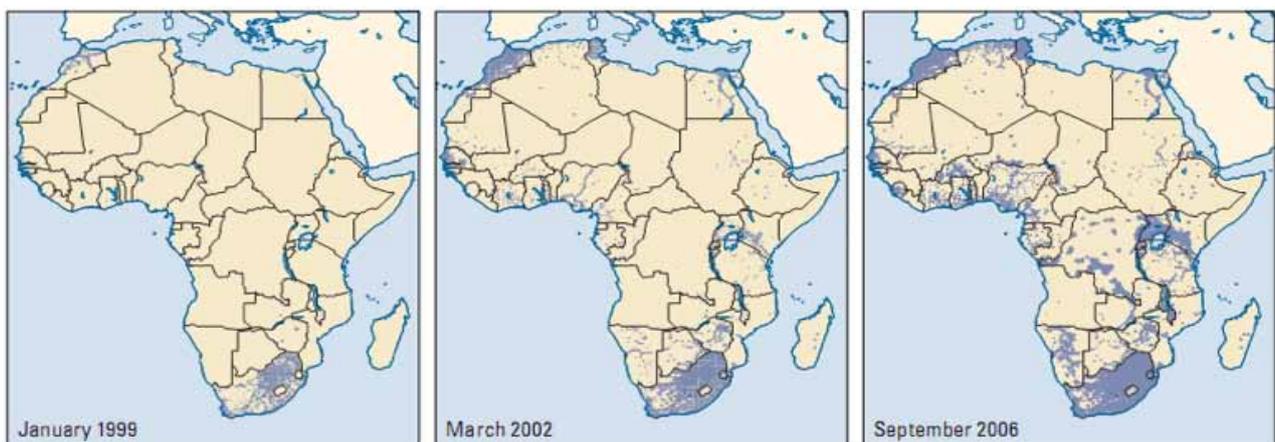
Source: DataBank by World Bank <http://databank.worldbank.org>

Table B3 – Infrastructure Funds in Emerging Markets

Largest Infrastructure Funds Raised Focused Primarily outside Europe & North America				
Fund	Firm	Primary Geographic Focus	Size (mn)	Year Closed
Chilean Transmission Fund	Brookfield Asset Management	Chile	2,800 USD	2006
Abraaj Infrastructure and Growth Capital Fund	Abraaj Capital	Bahrain	2,000 USD	2007
AIG Asian Infrastructure II	AIG Investments - Infrastructure	Asia	1,670 USD	1997
Macquarie Korea Opportunities Fund	Macquarie Capital Funds	South Korea	1,214,200 KRW	2006
3i India Infrastructure Fund	3i	India	1,200 USD	2008

Source: Preqin

Fig. B1 - The Spread of Telecommunication in Africa



Source: Buy and others

Table B4 – Urban population in selected MENASA countries

	2000				2005				2009			
	urban population	% of total	urban population living in cities > 1M	% of total	urban population	% of total	urban population living in cities > 1M	% of total	urban population	% of total	urban population living in cities > 1M	% of total
Algeria	18,242,620.3	59.8	2,254,354.0	7.4	20,796,920.7	63.3	2,512,420.0	7.6	22,982,156.5	65.9	2,740,065.0	7.9
Azerbaijan	4,120,849.8	51.2	1,805,977.0	22.4	4,321,802.8	51.5	1,867,301.0	22.3	4,571,440.7	52.1	1,950,028.0	22.2
Bahrain	574,610.6	88.4	na	na	643,173.6	88.4	na	na	700,928.5	88.6	na	na
Bangladesh	33,220,990.5	23.6	14,878,793.0	10.6	39,352,364.0	25.7	18,198,512.0	11.9	44,805,374.5	27.6	20,702,975.0	12.8
Egypt, Arab Rep.	29,894,035.8	42.6	13,761,920.0	19.6	32,867,778.2	42.6	14,538,417.0	18.8	35,490,540.4	42.8	15,206,731.0	18.3
India	281,410,671.0	27.7	115,751,837.0	11.4	314,145,321.0	28.7	133,849,109.0	12.2	344,524,677.6	29.8	146,504,901.0	12.7
Iran, Islamic Rep.	41,048,610.8	64.2	15,510,701.0	24.3	46,219,250.1	66.9	16,731,751.0	24.2	50,289,124.9	69.0	17,815,761.0	24.4
Iraq	17,023,579.6	67.8	6,255,511.0	24.9	19,050,888.5	66.9	6,563,089.0	23.0	20,943,700.6	66.5	7,153,220.0	22.7
Jordan	3,756,442.5	78.3	1,006,850.0	21.0	4,237,204.5	78.3	1,041,577.0	19.2	4,785,556.0	78.5	1,087,914.0	18.3
Kazakhstan	8,379,466.8	56.3	1,159,423.0	7.8	8,648,937.0	57.1	1,267,096.0	8.4	9,216,311.6	58.2	1,360,043.0	8.6
Kuwait	2,150,580.0	98.2	1,499,245.0	68.5	2,492,343.5	98.3	1,888,300.0	74.5	2,749,431.6	98.4	2,229,992.0	79.8
Kyrgyz Republic	1,740,016.2	35.4	na	na	1,841,373.0	35.8	na	na	1,939,101.7	36.4	na	na
Lebanon	3,244,163.4	86.0	1,486,686.0	39.4	3,534,660.4	86.6	1,777,348.0	43.5	3,677,870.0	87.1	1,909,406.0	45.2
Libya	4,084,630.5	76.4	1,022,452.0	19.1	4,560,580.6	77.0	1,059,445.0	17.9	4,989,565.7	77.7	1,095,112.0	17.1
Morocco	15,364,852.3	53.3	5,419,963.0	18.8	16,772,245.1	55.0	5,747,934.0	18.8	18,031,024.9	56.4	6,058,765.0	18.9
Oman	1,719,963.7	71.6	na	na	1,871,750.6	71.5	na	na	2,039,024.4	71.7	na	na
Pakistan	45,842,560.0	33.2	23,905,296.0	17.3	54,364,428.0	34.9	27,709,001.0	17.8	62,079,297.1	36.6	30,684,418.0	18.1
Qatar	585,359.3	94.9	na	na	844,708.8	95.4	na	na	1,349,099.7	95.7	na	na
Saudi Arabia	16,474,008.6	79.8	8,038,383.0	38.9	18,823,484.9	81.4	9,316,988.0	40.3	20,683,297.4	82.3	10,410,922.0	41.0
Sri Lanka	2,938,052.6	15.7	na	na	2,969,868.0	15.1	na	na	3,065,825.0	15.1	na	na
Sudan	12,600,333.2	36.1	3,949,488.0	11.3	15,788,976.6	40.8	4,518,303.0	11.7	18,735,143.2	44.3	5,021,386.0	11.9
Syrian Arab Republic	8,519,604.3	51.6	5,122,666.0	31.0	10,172,613.5	53.2	5,970,834.0	31.2	11,507,937.9	54.6	6,788,074.0	32.2
Tunisia	6,063,259.0	63.4	na	na	6,548,937.0	65.3	na	na	6,979,342.5	66.9	na	na
Turkey	42,999,347.0	64.7	17,286,897.0	26.0	47,896,761.9	67.3	19,418,945.0	27.3	51,727,577.1	69.1	20,889,537.0	27.9
Turkmenistan	2,061,791.0	45.8	na	na	2,290,827.5	47.3	na	na	2,506,907.6	49.1	na	na
United Arab Emirates	2,519,206.0	77.8	905,669.0	28.0	3,177,177.9	77.7	1,263,932.0	30.9	3,584,148.8	77.9	1,518,214.0	33.0
Uzbekistan	9,194,450.0	37.3	2,134,602.0	8.7	9,603,424.4	36.7	2,168,742.0	8.3	10,222,678.7	36.9	2,200,911.0	7.9
Yemen, Rep.	4,781,795.8	26.3	1,364,718.0	7.5	6,075,847.0	28.9	1,800,721.0	8.6	7,361,744.7	31.2	2,228,532.0	9.5

Source: DataBank by World Bank <http://databank.worldbank.org>

Table B5 - Largest international flows of labor are between neighboring countries

(% of world migrants recorded as a bilateral movement between pairs of countries/ regions, circa 2000)

Countries/ regions of origin	Destination countries/regions												
	USA	Canada	UE15 & EFTA	AU & NZ	Japan	HI MENA	LAC	ECA	MENA	AFR	EAP	SAS	Total
USA	n.a.	0.16	0.34	0.04	0.02	0.03	0.43	0.04	0.05	0.03	0.15	0.02	1.29
Canada	0.54	n.a.	0.10	0.02	n.a.	0.01	0.02	0.01	n.a.	0.01	0.01	0.01	0.74
EU15 & EFTA	2.22	0.98	5.59	1.13	0.01	0.14	0.68	0.78	0.16	0.39	0.20	0.19	12.47
AU and NZ	0.06	0.02	0.16	0.23	n.a.	n.a.	n.a.	0.01	n.a.	0.01	0.03	0.01	0.55
Japan	0.28	0.02	0.06	0.02	n.a.	n.a.	0.04	0.01	n.a.	n.a.	0.05	0.01	0.50
HI MENA	0.10	0.03	0.06	0.01	n.a.	0.12	n.a.	0.02	0.72	0.01	0.04	0.03	1.14
LAC	10.22	0.36	1.45	0.05	0.13	0.10	2.07	0.17	0.08	0.14	0.14	0.25	15.15
ECA	1.27	0.39	4.75	0.26	n.a.	0.92	0.07	16.98	0.33	0.34	0.18	0.41	25.88
MENA	0.47	0.17	2.85	0.10	n.a.	1.49	0.04	0.16	1.79	0.28	0.05	0.12	7.52
AFR	0.41	0.12	1.58	0.10	n.a.	0.25	0.02	0.11	0.18	7.00	0.03	0.16	9.97
EAP	3.32	0.71	1.09	0.63	0.54	0.48	0.06	0.14	0.14	0.09	3.86	0.27	11.32
SAS	0.83	0.31	1.13	0.12	0.01	2.66	0.02	0.13	2.07	0.14	0.37	5.67	13.46
Total	19.71	3.25	19.14	2.72	0.74	6.22	3.45	18.56	5.53	8.44	5.10	7.15	100

Source: World Development Report, 2009



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