



UNITED ARAB EMIRATES

SELECTED ISSUES

July 2014

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UNITED ARAB EMIRATES

SELECTED ISSUES

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THE REAL ESTATE MARKET AND EXPO 2020 IN THE UNITED ARAB EMIRATES: AVOIDING BUBBLES AND MACRO-INSTABILITY¹

The real estate sector in the United Arab Emirates, notably in the Emirate of Dubai, saw large correction in the context of the 2008/09 global financial crisis. A strong recovery in real estate prices has taken place since. In addition, newly announced megaprojects and investment in the run-up to the World Expo 2020 could exacerbate risks of potentially disruptive real estate correction, unless managed well. While the authorities have introduced some fiscal and macroprudential measures to contain real estate price growth and further bolster financial stability, cross-country experience suggests that additional measures may be needed if speculative demand affects real estate prices. The Expo 2020 is expected to bring substantial economic benefits to the economy, given Dubai's well-established status as a hub of regional tourism and well-developed relevant infrastructure. Careful macroeconomic management and appropriate strategic planning measures will be essential to minimize cost overruns, avoid overheating, and mitigate the risk of a real estate bubble. These measures would include preparing a sound feasibility study—in the context of the forthcoming master plan—linked to the post-event period, developing realistic demand projections, and financing the Expo and other large-scale projects in a fiscally prudent manner.

A. Introduction

1. **A fast-paced recovery in some segments of the real estate sector in the United Arab Emirates, especially in the Dubai residential market, is benefitting economic growth, but has raised concerns of a potential real estate bubble.** Several large megaprojects are expected to be executed in Dubai, mostly in the real estate and hospitality sectors. For the Expo 2020, the emirate is expected to spend up to US\$18 billion,² of which the authorities have reportedly committed US\$8 billion in capital spending over the next several years. These megaprojects, if not implemented prudently, could exacerbate the risk of a disruptive real estate correction.

2. **This note discusses the measures that could mitigate risks associated with the real estate cycle, the international experience with real estate booms and hosting large events such as World Expos, Olympic Games, and World Cup tournaments.** Section II discusses the recent developments in the segments of the real estate market in Abu Dhabi and Dubai, focusing on changes in sales' prices, rents, and supply in the market. In the absence of sufficient data to employ

¹ Prepared by Bahrom Shukurov under the guidance of Harald Finger and with assistance from Peter Gruskin.

² According to HSBC (March 2014).

valuation models, the note discusses price-to-income and price-to-rent ratios. The note also takes stock of measures the authorities have introduced recently to reduce the potential for speculative pressure in the real estate market and further strengthen the resilience of the banking system. It also discusses how other dynamic emerging markets dealt with rapid real estate price appreciation (Hong Kong, India, Korea, and Singapore). Section III discusses the impact of the Expo 2020 on Dubai's economy, the experience of other countries hosting large events, and key lessons that could help in managing the Dubai Expo successfully from the macroeconomic point of view. Section IV concludes.

B. Recent Developments in the Real Estate Market and Key Policy Measures

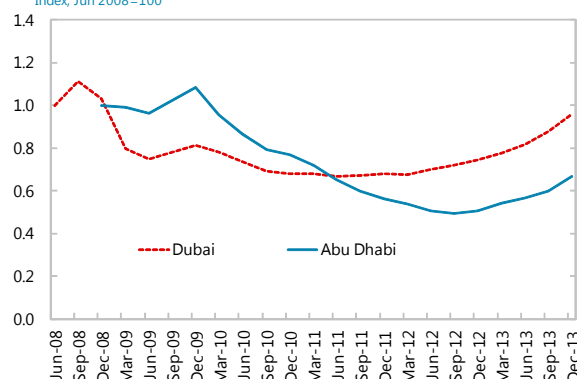
3. **Following a real estate boom in 2002-08, the UAE's real estate market was hit hard.**

Like in other countries, the real estate market in Dubai was adversely affected by the global economic crisis. Following steep price appreciation in the mid-2000s, Dubai saw significant price declines in the second half of 2008 and in 2009. The real estate market in Abu Dhabi also dropped, notably its residential segment, which came under pressure from the collapsed prices in Dubai's real estate market. Residential property prices in Dubai fell until end-2011, while in Abu Dhabi price declines in the same segment continued in 2012.

4. **The residential segment of the real estate market has recovered strongly, especially in Dubai.** With the returned confidence in the real estate market, also helped by a successful bid for the Expo 2020, residential property prices in Dubai have been increasing at a fast pace, though the momentum appears to have slowed in recent months. The recovery in Abu Dhabi's residential market started later than in Dubai. Similar trends can be seen in the residential market's rents (see Annex 1).

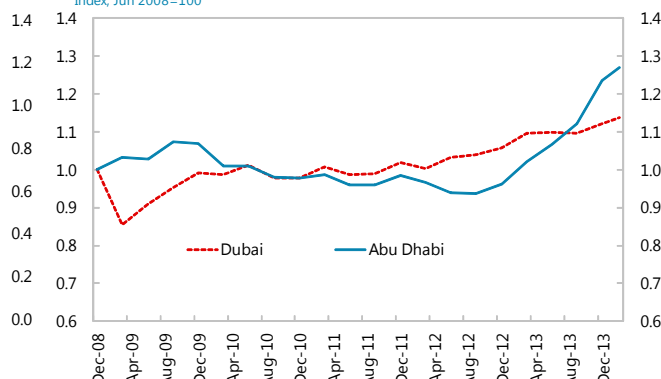
5. **Rising price-income and price-rent ratios can provide some guidance on valuation in the real estate market.** Dubai's price-income ratio has been rapidly accelerating and by end-2013 reached levels last seen in 2008, at the peak of the previous boom (Figure 1). By contrast, Abu Dhabi's price-income ratio at end-2013 remained well below its peak in 2008. Figure 2 indicates that in both Abu Dhabi and Dubai, price-rent ratios have trended up (more so in Abu Dhabi).

Figure 1. Price-to-Income Ratios
Index, Jun 2008=100



Source: Colliers International, JLL, NBAD, Reidin, IMF staff calculations.

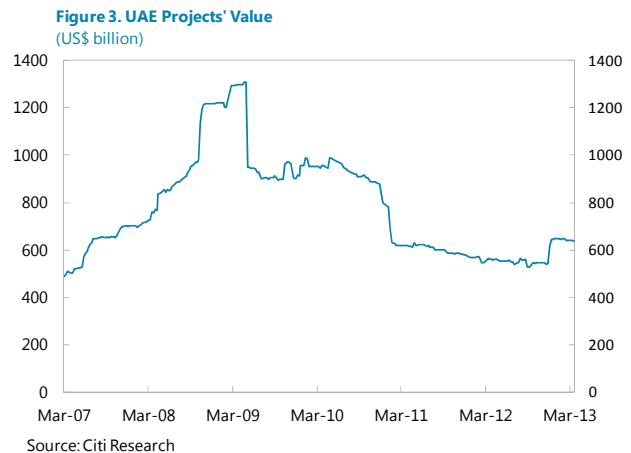
Figure 2. Price-to-Rent Ratios
Index, Jun 2008=100



Source: Colliers International, JLL, NBAD, Reidin, IMF staff calculations.

6. **Dubai is now more resilient to exogenous shocks than before the 2008 real estate collapse:**³

- The construction sector's share in Dubai's economy is much lower today than it was six years ago: about 8 percent in 2013 versus about 14 percent in 2008. Economic growth has become more broad-based compared to 2008, when construction was an important driver of growth. Figure 3 demonstrates how the total value of all projects in the United Arab Emirates declined from its peak six years ago. With a lower share of construction in the economy, the scale by which the sector would affect overall economic activity has also reduced.



- The banking system is more sound and liquid than in 2008: then, the banking system was more vulnerable to global shocks because of the rapid increase in foreign liabilities (growing by about 90 percent annually in 2005–07 compared to an average 20 percent in 2012–13) and the unsustainable credit growth (growth in total credit to the economy was more than 40 percent annually in 2005–08 compared to an average 7 percent in 2012–13).
- Progress has been made in deleveraging, debt restructuring, and extending debt maturities. With the debt restructuring of Dubai Group in January (\$10 billion), reportedly at a large NPV haircut for creditors, the last major restructuring from the 2008/9 crisis has been completed. In addition, \$20 billion in Dubai government debt to the Central Bank of the United Arab Emirates (CBU) and Abu Dhabi, falling due this year, was rolled over at reduced interest rates. Nakheel has begun to prepay bank debt due in 2014. Dubai World has stepped up asset sales (sometimes to other GREs) to raise cash and repay debt under its debt restructuring agreement, though markets continue to monitor Dubai World's capacity to make forthcoming repayments.

7. **Despite the stronger resilience to exogenous shocks, improved market fundamentals, and returned confidence, potential large-scale speculative demand in the residential segment of Dubai's real estate market could have strong negative impact.** Sizable price increases may have inevitably invited some flipping activity, but so far it does not appear to be on the same scale as before the 2008 collapse, as anecdotal evidence suggests. Most new projects are currently being

³ For more details, see "Dubai Property – Why Things Look Differently Now, and Why There's Little Room for Complacency", Citi (February 2014).

launched by solid large-scale developers (before the 2008 collapse, more smaller-scale developers were involved), which plan to keep supply in line with expected demand; however, if demand becomes inflated by speculation, developers could again respond with expanding supply. Inflated demand and oversupply could then prove to be key ingredients for an eventual disruptive correction.

8. Recognizing this risk, the authorities have introduced a number of measures to help reduce speculative demand.

- The recent increase in real estate registration fees from 2 percent to 4 percent was an important step to curb flipping.
- Developers are now required to have 100 percent ownership of their land and hold 20 percent of the construction cost in a special escrow account. Some developers have also introduced self-imposed measures for some projects, including banning resale of unfinished properties before 40 percent of the property's value is paid.
- All real estate transactions must be registered with the Dubai Land Department (Notary Public can no longer issue Power of Attorney for conducting a real estate transaction ⁴).
- The CBU has introduced macroprudential regulations that could help further strengthen the resilience of the banking system and contain credit-financed speculative demand: (i) limiting loan-to-value (LTV) ratios for mortgages (to between 60 percent and 80 percent, depending on value and nationality; and 50 percent for off-plan properties); (ii) limiting borrowers' debt-service-to-income (DTI) ratios to 50 percent, and (iii) restricting bank lending to Emirate governments and GREs (banks will not be able to lend more than 25 percent of their capital to a non-commercial GRE and more than 100 percent of their capital to all GREs and Emirate governments).

9. The Dubai authorities are completing a review of the off-plan transaction market, and will issue additional regulations, which could slow down real estate sector price growth, in the coming months. The introduction of an additional real estate fee for off-plan transactions is under consideration. In addition, the Dubai authorities are expected to introduce new, simpler, contract forms for real estate transactions, and to issue the Dubai real estate investor law that will protect the rights of buyers and sellers. To bring a comprehensive overview on price movements in the Dubai residential market, the development of a residential price index is being considered.

⁴ Powers of Attorney in property purchases were reportedly used in the past to circumvent property registration fees.

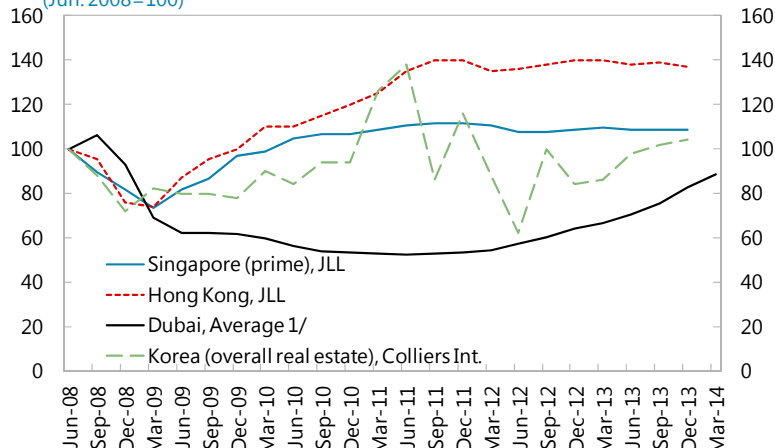
International experience

10. **Hong Kong, Korea, and Singapore also experienced rapid growth in residential sales prices, as does Dubai now.** Figure

4 compares Dubai's residential sales' price index with that of Hong Kong, Korea, and Singapore. The latter countries experienced strong acceleration in sales prices from mid-2009: Singapore saw this acceleration until end-2010, and Hong Kong and Korea until mid- to end-2011. Since then, with the introduction of timely measures, residential sales prices have stabilized in Hong Kong and Singapore, while in Korea, real estate prices experienced volatility but were on a declining trend until mid-2013, and have stabilized since then.

Figure 4. Residential Real Estate Price Index

(Jun. 2008=100)



Sources: Colliers International; JLL, National Bank of Abu Dhabi; Reidin; and IMF staff calculations.

1/ Average of Colliers International, National Bank of Abu Dhabi, and Reidin residential sales indices.

11. These and some other countries can present useful knowledge in containing real estate price pressure and/or protecting their banking systems from the busts:

- Main measures included the following (see Annex 2 for more details): (i) raising stamp duties (especially for properties re-sold within a short period of time); (ii) tightening LTV and DTI limits; (iii) introducing real estate exposure limits; (iv) raising risk weights on housing and consumer loans; (v) increasing general provisions; and (vi) increasing land supply.
- The measures that appeared most effective in containing house price growth were often increases in the stamp duty (e.g., Singapore). LTV and DTI limits also seemed to be effective to some extent, albeit short-lived in many cases. More broadly, macroprudential measures, while helping to some extent to reduce price pressures in the real estate markets, were more effective in mitigating risks to the banking system, as was the main intention of some of the countries considered above (e.g. in India).
- Both stamp duties and macroprudential measures were often tightened repeatedly as price pressures intensified, reflecting the fact that it is difficult ex ante to gauge the precise effect of such measures or the extent of price pressures in the real estate market.

*Policy recommendations***12. More measures from the real estate fee and macroprudential toolkits may need to be taken to contain speculative real estate demand and support stability in the banking system.**

The empirical evidence on the effectiveness of these measures is mixed. Some countries were successful in preventing the boom by applying such measures (e.g., Singapore). Other countries could not stop the boom, but they strengthened their banking systems for the bust (e.g., Hong Kong, Korea, India).

- *Real estate transaction fees* can be useful for real estate markets that are largely based on cash transactions, as is the case in the United Arab Emirates (an estimated 70–80 percent of all real estate transactions are done in cash, that is, out of the purchasers' own resources or financed from abroad). A large general increase in transaction fees is not advisable because it would tend to discourage not only speculative but also real demand. Real estate transaction fees could be raised substantially for properties re-sold within a short time of purchase (as was done in Hong Kong and Singapore), and left unchanged for all other transactions. In addition, imposing differentiated fees for reselling off-plan properties, as currently under consideration, could help further discourage speculative demand without suppressing "healthy" growth. Real estate transaction fees can be considered an effective tool in containing speculative demand in the United Arab Emirates environment.
- *Limits on LTV and DTI* can reduce the pressure on real estate prices by limiting credit-financed speculation, and reduce the degree of exposure of the banking sector, thereby protecting it from a potentially large correction. These measures have been introduced in the United Arab Emirates, but could be tightened more as per international experience (as discussed above), particularly if the pace of price increases remains very high and if real estate lending picks up more strongly. The effectiveness of the measures in addressing speculation, is limited, however, in countries like the United Arab Emirates, where real estate transactions are mostly conducted in cash. There are also implementation challenges that include potential circumvention practices: for LTV, e.g., extending personal loans to meet the required downpayment, and shifting risks to outside the regulatory coverage by expanding credit by non-banks; for DTI, not reporting all outstanding debt obligations.
- *Higher capital requirements/risk weights* linked to real estate price dynamics could also help protect the banking system from a potentially large correction. Emirati banks could build buffers against losses during busts, if they hold more capital for real estate loans during booms. With the higher cost of credit, demand and real estate prices could be contained. This measure will not be fully effective if bank capital ratios are higher than the regulatory minimums (in the United Arab Emirates, banks' capital levels are at 15–20 percent, while the regulatory minimum is at 12 percent), it would still likely raise the interest that banks charge for these exposures, because more capital would be tied up. In the same vein, although this measure will not be fully effective in stopping the boom if real estate transactions are mostly conducted in cash, higher risk weights for housing loans would ensure that the banking system is stronger at the time when the bust comes.

C. World Expo 2020 in Dubai: Impact and Key Lessons

13. **Hosting a global-scale event may offer direct and indirect economic benefits.** Among the direct benefits is infrastructure construction that leads to improved road and rail systems and thereby reduces transportation costs and improves productivity. Another direct benefit comes from increased spending from tourists visiting the event. Indirect benefits include strengthening the country's image, which could lead to more tourists and businesses attracted to the country.⁵

14. **Potential downside risks may also be present.** These include possible distortions to macroeconomic stability, brought about by possible cost overruns. Higher-than-expected costs and potential oversupply of property are also important risks to consider. In addition, a buildup of debt could affect the stability of the financial sector and reduce the resilience of the overall economy to shocks.

Experience from Expos and other global events

15. **International experience from global events such as World Expos, Olympic Games, and World Cup tournaments is mixed** (see Annex 3). Historical evidence on the economic impact of hosting the World Expos suggests that in some countries the impact on growth was substantial, but cost overruns were large too; in other countries, the impact on growth was insignificant. International experience from Olympic Games also point to a large risk of substantial cost overruns and public debt. Experience from some soccer World Cup tournaments suggests that the effects on the economy from tourism and consumption were small, while cost overruns were significant. In some countries that hosted global events, growth slowed down somewhat in the year after the event.

⁵ See "Is It Worth It?" *Finance and Development*, March 2010.

Potential impact on the Dubai economy

16. Preliminary estimates are that the Expo 2020 will boost Dubai's economic growth, create jobs, and support bank lending in the medium term:⁶

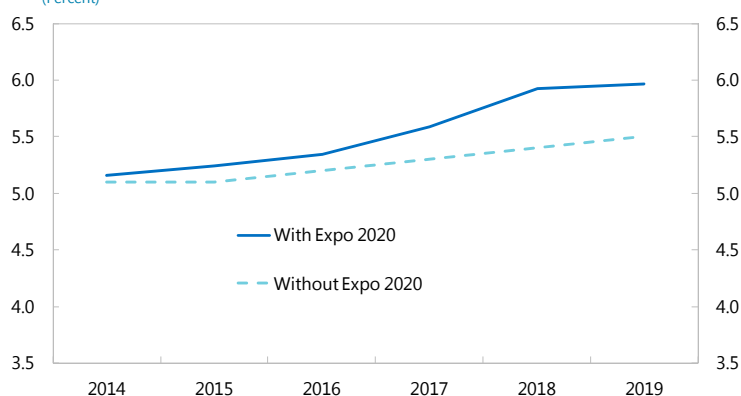
- The main impact in the short and long term would come from reinforcing the trend of returning confidence to the economy.
- Supported by the Expo and increased investor confidence accompanying the event, growth is expected at 5.5 percent on average in 2014–19 and 8 percent in 2020, the year of the event (Figure 5). Without the Expo, growth would average about 5 percent in 2014–20. With the Expo to be located near Jebel Ali, relatively close to Abu Dhabi, positive effects on growth are also expected in Abu Dhabi

during the Expo period (other emirates are also expected to gain from the event). Tourism, trade, transport, travel, construction, and the financial sector are envisaged to be the drivers of growth. Additional infrastructure can bring benefits in terms of higher productivity as improved transport facilities would increase the turnover of

passengers and freight. The Expo can also result in strengthened human capital with skills gained from managing a mega event. In 2021, following the Expo, growth is expected to decline from the 2020 peak, broadly in line with international experience. The decline would constitute a return to its long-term sustained growth of about 5-6 percent annually.

- The Dubai Expo Committee estimates that 25 million people will attend the Expo between October 2020 and April 2021. According to the report by Oxford Economics, commissioned by the Expo bid committee, the number of jobs created in the economy by hosting the World Expo would be 277,000. About 250,000 would be created during 2014–21 and the rest in the following three years. Out of the total number of jobs, 40 percent are expected to be created in the tourism sector (hotels, restaurants), 30 percent in transport and logistics, retail and business services, and the rest in construction.

Figure 5. Dubai Real GDP Growth
(Percent)



Source: IMF.

⁶ See "Dubai – Gearing Up for 2020," Barclays, November 2013; and "Expo 2020: Icing on the Cake," Emirates NBD, November 2013.

- The Expo is also expected to create lending opportunities for banks, which are envisaged to benefit from lending to the government (although lending to the government is now subject to the recently introduced concentration limits). In addition, lending is also anticipated to increase from improved sentiment and confidence that the Expo is likely to generate.

17. Government capital expenditure is projected to double by 2019 on account of Expo-related spending, but fiscal balances are still expected to be in surplus:

- The authorities are expected to spend USD 8 billion for the Expo-related preparations, including extending Dubai's metro and road infrastructure. Under the staff's scenario, one fifth of this amount would be disbursed by end-2016 and the rest in 2017–19 (Figure 6).

Figure 6. Dubai Government Capital Spending
(Percent of Dubai GDP)



Source: IMF.

The scenario also assumes a slight increase in government revenues—customs fees, income taxes, and non-tax revenues such as fees and charges—on the back of buoyant economic activity that is anticipated with Expo 2020. Fees and charges are also expected to increase (also in 2014 on account of a recently introduced increase in real estate fees).

- Dubai's fiscal surpluses are projected to be smaller than without the Expo. This is based on the assumption that current spending growth will not be directly affected by Expo-related activities. In case government revenues increase more slowly than projected, there could be fiscal deficits in some years.

18. GREs and the private sector are also expected to finance Expo-related and other large-scale activities, which could spur a risk of overheating and an increase in already high debt.

- *Risk of excess acceleration of projects.* Estimates are that there would be USD 10 billion of GRE and private sector spending to cover Expo-related costs (HSBC), but total investment may exceed this estimate. The Expo, with its anticipated spike in demand, could accelerate the implementation of Dubai megaprojects.
- *Risk of overheating and construction cost inflation.* The extra demand generated in the infrastructure sector could spur risks of overheating and pressures on supply chains, driving up the cost of raw materials, and fueling real estate risks. The risk of the rising cost of raw materials is especially acute, given that another global-scale event, the FIFA World Cup, will take place in neighboring Qatar in 2022.

- *Financial sector and debt-related risks.* In case GREs bear large-scale financial risks related to the implementation of these projects, and particularly if the implementation of planned megaprojects accelerates in the advent of the Expo, this could undermine the deleveraging of GREs and, ultimately, their financial health. With banks significantly exposed to GRE risk, this could ultimately also affect financial stability.

Key lessons for Dubai

19. With its well-established status as a hub for regional tourism and well-developed related infrastructure, Dubai can benefit substantially from hosting the Expo 2020, but careful macroeconomic management and appropriate strategic planning are essential:

- Whether the economy benefits significantly from the Expo depends on a fiscally responsible and sustainable manner of financing related spending, which should be carefully managed and be part of Dubai's economic development strategy. GREs' borrowing to finance Expo-related and other large-scale activities should therefore be contained to avoid a renewed buildup of contingent liabilities, while the continued proactive focus of impaired GREs on upcoming debt maturities should be encouraged.
- The government will need to ensure that investment projects continue to be implemented in line with projected demand. This could be done by putting in place a mechanism for top-down assessment of planned supply versus demand.
- In the context of the authorities' forthcoming Expo master plan, a sound feasibility study needs to be prepared that would clearly state the allocation of resources throughout the planning and construction periods and maintaining cash flow during operations.⁷ This feasibility study should also have a clear vision for the post-event period—specifying the intended use of the Expo territory/buildings and other infrastructure after the event. This would help mitigate risks of excess infrastructure and tourist accommodation oversupply after the event, by better matching the level of development to the scale of the Expo.
- Appropriate monitoring and evaluation systems are needed to ensure timely assessments of the process and, if required, applications of corrective measures.
- International experience points to a risk of cost overruns and financial losses in hosting global events and thus suggests that a continued focus on strengthening Dubai's public finances is warranted, with a view to increasing the emirate's financial resilience to such potential shocks.

⁷ See "The Expo Book: A Guide to the Planning, Organization, Design, and Operation of World Expositions," 2008.

D. Conclusions

20. **The strong recovery in the real estate market in Dubai requires close monitoring and further measures to discourage speculative demand.** The residential and hospitality segments have seen buoyant growth (although the momentum seems to have slowed in recent months), while growth in the commercial segments (excluding hospitality) has been slower. Dubai's economy is now more resilient to exogenous shocks; however, speculation in the residential segment of the Dubai's real estate market may still return at a significant scale. A number of measures that are expected to help reduce flipping activity have already been introduced. More measures from the macroprudential and fiscal toolkit for containing real estate booms may be needed, particularly if signs of flipping activity emerge strongly.

21. **Hosting a global-scale event may offer direct and indirect economic benefits, but it can also present risks.** With its well-established status as a hub of regional tourism and well-developed infrastructure, the economy of Dubai (and of the United Arab Emirates) economy can benefit substantially from hosting the Expo 2020. Careful macroeconomic management and appropriate strategic planning measures will be essential to minimize cost overruns, avoid overheating, and limit real estate risks. These measures include preparing a sound feasibility study linked to the post-event period, developing realistic demand projections, financing the Expo and other project-related spending in a fiscally sustainable manner, and continuing to strengthen Dubai's public finances to increase buffers for possible cost overruns and losses.

Appendix 1. Recent Developments in the United Arab Emirates' Real Estate Market

The residential segment of the real estate market has recovered strongly in Dubai. With the return of confidence to the real estate market, helped by a successful bid for Expo 2020, residential property prices in Dubai have been increasing at a fast pace. Growth in sales' prices in Dubai's residential segment reached double digits y-o-y starting from the second half of 2012 and accelerated substantially at more than 20 percent y-o-y between the second half of 2013 and the beginning of 2014 (Figures 1, 2).¹ While the momentum of price increases appears to have slowed somewhat in recent months, sales prices nonetheless increased 27 percent y-o-y in May 2014 (according to Dubai Land Department data). The index that averages indices of Dubai's residential sales' prices from various sources suggests that prices have not yet reached their peak level.

Figure 1. Dubai Residential Real Estate Sales' Price Growth
(Y-o-y percent change)

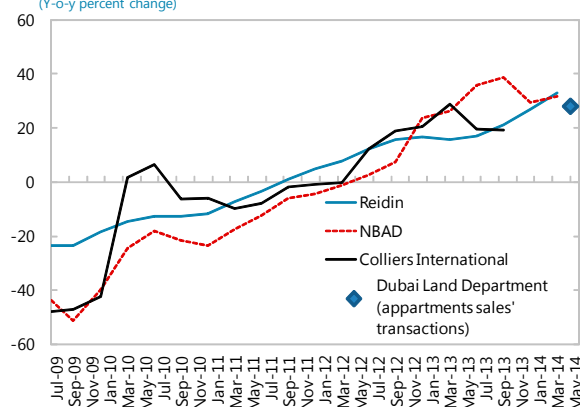
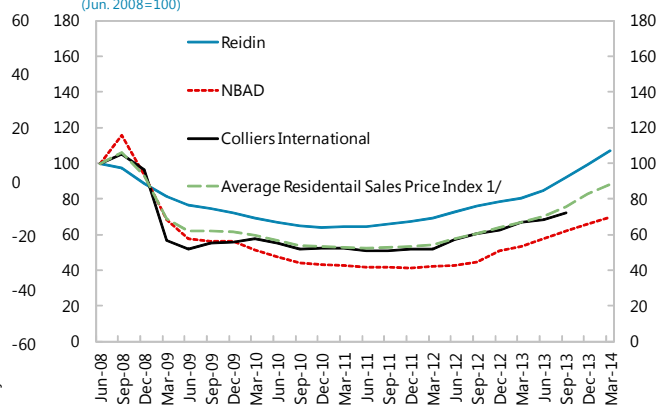


Figure 2. Dubai Residential Real Estate Sales Price Index
(Jun. 2008=100)



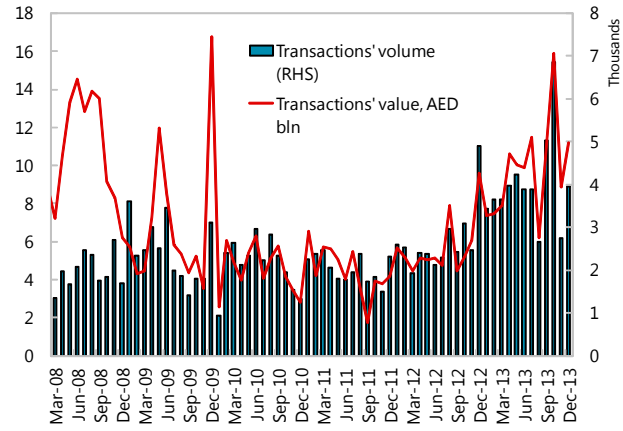
Sources: Dubai Land Department; Colliers International; National Bank of Abu Dhabi; Reidin; and IMF staff calculations.

¹ Several different sources were used for analyzing price developments in Abu Dhabi and Dubai's residential segments (sales and rents): Colliers International, Dubai Land Department, JLL, National Bank of Abu Dhabi (NBAD) and Reidin.

The transaction size and value in the overall real estate market, including residential and commercial segments, were growing quickly during 2012–13. According to the Dubai Land

Department, the value of all transactions in the Dubai real estate market increased by about 72 percent on average in 2013 (Figure 3), driven by a rise of 50 percent in the volume of transactions. The average transaction value is still well below levels seen at the last peak: in 2008, the average transaction value was AED 5.6 million, while in 2013 it amounted to AED 2.5 million. Transactions in the residential market (both value and volume) increased substantially in September/October 2013, and then slowed down, possibly reflecting in part the increase in property registration fees from 2 percent to 4 percent.

Figure 3. Dubai Real Estate Market Transactions, 2008–13



Sources: Dubai Land Department.

The recovery in Abu Dhabi's residential market started later than in Dubai. Sales prices started to grow in the beginning of 2013: growth reached about 20 percent in December 2013 y-o-y and stayed at this level through March 2014 (with the price level below its peak levels, Figures 4, 5).² This strong growth has been supported by strong economic fundamentals (including high levels of job security and confidence).

Figure 4. Abu Dhabi Residential Real Estate Sales' Price Growth (Y-o-y percent change)

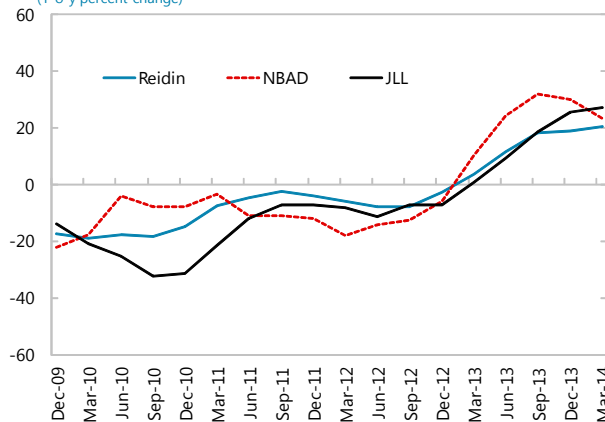
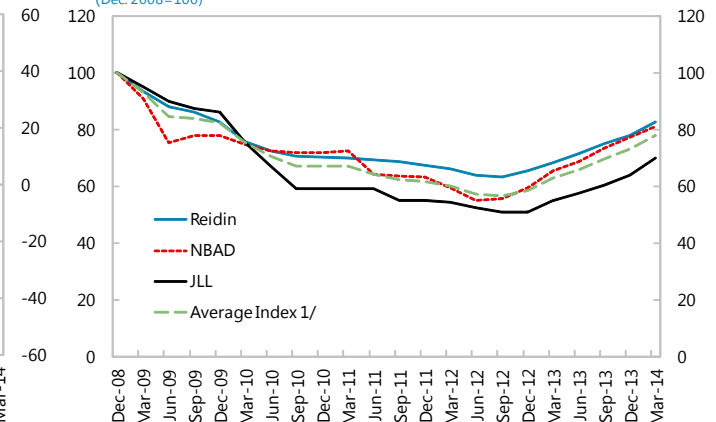


Figure 5. Abu Dhabi Residential Real Estate Sales' Price (Dec. 2008=100)



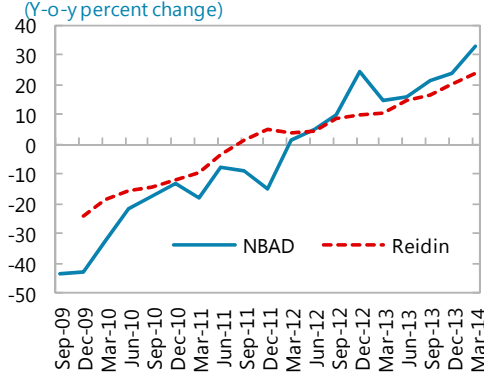
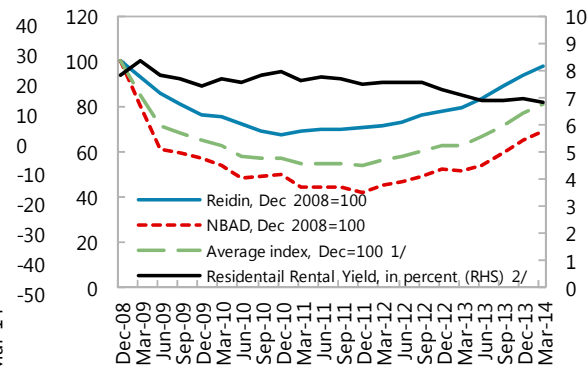
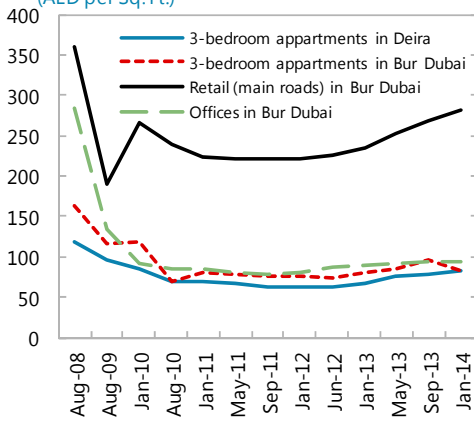
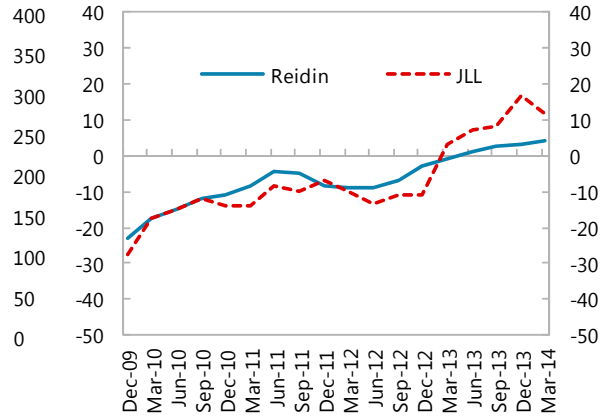
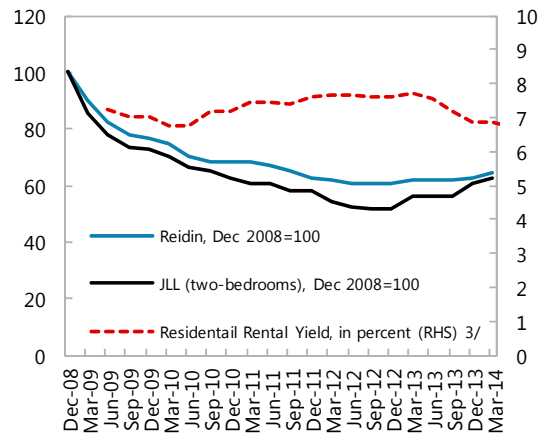
Sources: Colliers International; JLL, National Bank of Abu Dhabi; Reidin; and IMF staff calculations.
1/ Average of JLL, National Bank of Abu Dhabi, and Reidin residential sales indices.

² According to the index that averages the indices from JLL, NBAD, and Reidin.

Similar trends can be seen in residential rents. In Dubai, rental growth in the residential segment was increasing from end-2012, reaching from 24 percent y-o-y according to Reidin to 33 percent according to NBAD in March 2014 (rents are, so far, below their 2008 peak, Figures 6, 7). According to the Dubai Land Department, a pick-up in residential rent prices in some areas of Dubai has been significantly slower (Figure 8).³ The rental yield has been slowly declining, because of higher growth in sales prices compared to rent prices. A recent regulation that was issued to allow landlords in Dubai to increase rents by up to 20 percent, if rents are below the market value of that area by 11 percent, constitutes a loosening of previous rent ceiling regulation and could lead to accelerating rents in some areas.⁴ In Abu Dhabi, rents in the residential segment started growing only in the second half of 2013. In March 2014, rent prices increased between 4 percent y-o-y (Reidin) and 12 percent (JLL) (Figures 9, 10). As a result of the slower growth, rents in Abu Dhabi remain well below their peak levels. The rental yield has been broadly stable. The recent removal of the 5 percent rent cap together with the new requirement for public sector employees to reside in Abu Dhabi, is expected to put upward pressure on rents.

³ Rent prices cover three-bedroom apartments in Bur Dubai and Deira.

⁴ This regulation aims at achieving the right balance between tenants and landlords.

Figure 6. Dubai Residential Real Estate Rents' Price Growth
(Y-o-y percent change)**Figure 7. Dubai Residential Real Estate Rents Index****Figure 8. Dubai Real Estate Rents**
(AED per Sq. Ft.)**Figure 9. Abu Dhabi Residential Real Estate****Figure 10. Abu Dhabi Residential Real Estate Rents**

Sources: National Bank of Abu Dhabi; Dubai Land Department; JLL; Reidin; and IMF staff calculations.

1/ Average of National Bank of Abu Dhabi and Reidin residential rental indices.

2/ Rental yield is calculated using data from National Bank of Abu Dhabi and Reidin.

3/ Rental yield is calculated using data from JLL and Reidin.

The commercial segment has also been recovering in Dubai, and more modestly in Abu Dhabi (Figures 11, 12).⁵

- The buoyant retail and hotels segments have seen lower vacancy rates in Q4 2013 (12 percent and 20 percent, respectively). Rents in the retail sector were broadly stable in 2013. Average daily hotel rates increased by about 5 percent in 2013, supported by a 11 percent increase in tourists visiting Dubai (the number is estimated to have exceeded 11 million).⁶ In the office segment, rental growth has been slower and the vacancy rate remained high at 29 percent—the existing supply remains large, while demand comes mostly from prime locations. The supply in these segments is projected to increase modestly in the coming years (also on account of the Expo 2020 preparations).
- In Abu Dhabi, rental growth in the commercial segments has been more sluggish because large oversupply still exceeds the growing but still limited demand. The vacancy rate in the office segment increased to 39 percent in Q4 2013, and office rents in prime locations have been stable.⁷ The vacancy rate in the hotel segment declined slightly by end-2013, but still remain high at 33 percent. Average daily rates declined by 2 percent. The retail segment has fared better, helped by strong demand from the resident population, with the vacancy rate at 2 percent and rents stable. Large expected supply in 2014 may put some downward pressure on rents in the commercial segments.

Figure 11. Dubai: Real Estate Supply
(Annual percent change)

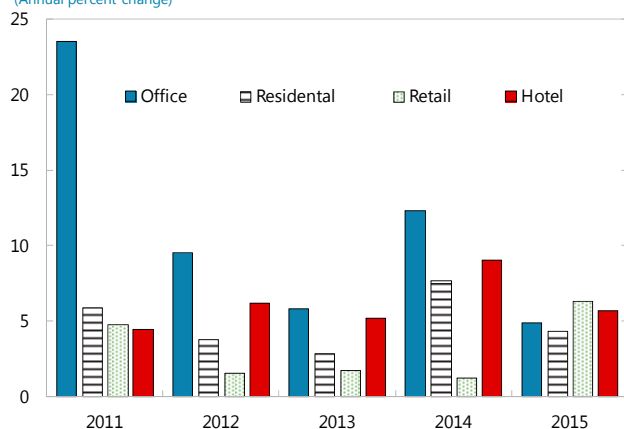
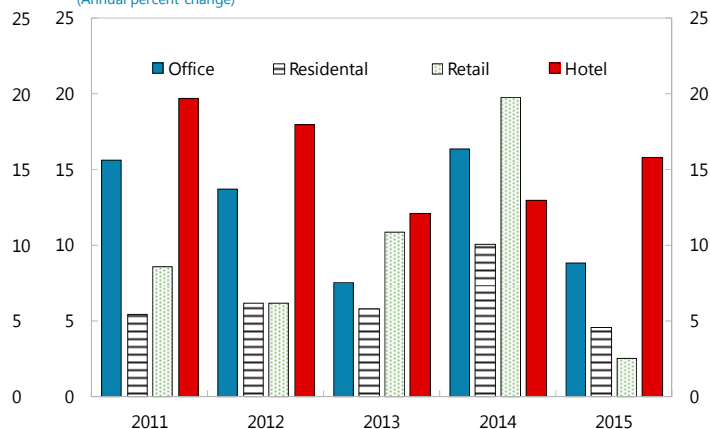


Figure 12. Abu Dhabi: Real Estate Supply
(Annual percent change)



⁵ For more details see JLL reports.

⁶ According to the press release of the Department of Tourism and Commerce Marketing in Dubai.

⁷ Office rents in secondary locations declined by 9 percent in 2013.

Appendix 2. Containing real estate booms: the cases of Hong Kong, India, Korea, and Singapore¹

Hong Kong (1990s)

In Hong Kong, two periods are worth examining: the 1990s and 2000s.

- In the 1990s, real estate prices were rising, accelerating by 1993; mortgage loans increased substantially in terms of GDP. In 1991, the LTV limit was reduced from 80 percent to 70 percent. As price growth increased, additional measures were introduced in 1994: real estate exposure limits of 40 percent of total loan portfolio and a ceiling of 15 percent per annum on mortgage lending growth. In 1997, the LTV limit was reduced to 60 percent for luxury residences. The exposure limit of 40 percent was abolished in July 1998, after the market plunged.

Hong Kong (2000s)

- After the boom-bust between 1995 and 2003, real estate prices were growing modestly until 2007, but then growth accelerated. During the 2008 world economic crisis, prices dropped significantly, but then quickly recovered. Since September 2009, several measures have been made to tighten loan eligibility criteria. The maximum LTV for properties with a value of HK\$20 million or more was reduced to from 70 percent to 60 percent. In August 2010, the limit was extended to properties valued at or above HK\$12 million and to non-primary residence loans by the placement of a loan cap of HK\$7.2 million on mortgages subject to the 70 percent LTV guideline. Also, the DSTI limit was standardized at 50 percent from the previous 'range' of 50–60 percent. The stamp duty was raised from 3.75 percent to 4.25 percent on transactions above HK\$20 million. In August 2010, the government announced plans to increase land supply. In November 2010, to further discourage speculators, stamp duty was increased to 15 percent for properties re-sold within six months of purchase and LTV limits were tightened to 50–70 percent, depending on the type of properties—from below HKD 8 million to above HKD 12 million. Growth in prices continued until late 2011 and have stabilized since then. While the stamp duty increase led to some decline in price growth, there is not much evidence that the measures overall were very effective in containing price growth, which was rising again after some short-term declines resulting from interventions. However, the Hong Kong experience suggests that macro-prudential measures in the early 2000s appeared to be effective in mitigating risks to the banking system.

¹ Source: “How to Deal with Real Estate Booms: Lessons from Country Experiences”, C. Crowe, G. Dell’Ariccia, D. Igan, P. Rabanal, IMF 2011.

India

- In India, a real estate boom developed on the back of strong economic growth and soaring construction. Demand was still stronger than supply because infrastructure was still inadequate, while planning and land-use laws were inefficient. Residential property prices increased by more than 20 percent from 2002 to 2005, while commercial rents saw even steeper hikes. Housing loans and consumer credit increased substantially. The following measures were introduced. Risk weights on housing and consumer loans were increased as follows: to 50 percent both in October 2004, and to 75 percent for housing loans, to 125 percent for consumer credit and commercial real estate exposure in July 2005. General provisions for standard assets were increased across the board from 0.25 percent to 0.4 percent in October 2005 (further increased to 1 percent in April 2006 and to 2 percent in January 2007) and the risk weight on commercial real estate exposure was further increased to 150 percent in May 2006. In 2007, risk weights and general provisions on exposure to systemically important non-deposit-taking financial companies were increased from 100 percent to 125 percent and from 0.4 percent to 2 percent, respectively. Cash reserve requirements were increased gradually from 4.5 percent to 6 percent by 2007. In November 2010, additional measures included a mandatory ceiling of 80 percent on LTVs for residential real estate loans and an increase in the risk weights of housing loans above Rs.75 lakh to 125 percent (irrespective of the LTV). The authorities' main intention was to prepare the banking system for bust, rather than to attempt stopping the boom. Following the bust, the banking system appeared to be generally sound indeed.

Korea

- In Korea, following the Asian crisis, expansionary policies resulted in a credit boom that went to bust in 2003. House prices increased by about 30 percent in real terms between 2001 and 2003. Another period of house price increases occurred between 2005 and 2007 (prices grew by 15 percent). Maximum LTV limits were introduced in 2002 and maximum DTI limits in 2005. LTV limits were lowered in speculative areas twice in 2003, first to 50 percent and then to 40 percent down from 60 percent. The LTV reduction was expanded to loans made by non-bank intermediaries bringing the ratio from 60–70 percent to 50 percent. DTI limits in speculative areas were reduced to 40 percent. LTV limits were reduced in 2009 in non-speculative areas as well. DTI limits were tightened twice in 2007 and 2009. The LTV and DTI limits seemed to be effective, but the impact did not appear to last long; therefore, the measures had to be tightened repeatedly. Because the limits were already very low, limited room remained for further interventions. Also, calibrating these tools proved difficult: the DTI tightening appeared to be too strong ultimately, suppressing “healthy” growth.

Singapore

- In Singapore, real estate cycles have also been significant. House prices increased by 45 percent in real terms between 2004 and 2008. During the 2008 global economic crisis, prices declined only modestly, by 4 percent. Following the crisis, house prices rose more than 30 percent by mid-2010, and have stabilized since then. The authorities' measures included LTV limits that were repeatedly reduced (differentiating between individuals and non-individuals): LTV limit was initially reduced from 90 percent to 80 percent, then to 70 percent for second and subsequent mortgages, and then to 60 percent for individuals with one or more outstanding housing loans at the time of the new purchase and to 50 percent for purchases that are not individuals. A seller's stamp duty on all residential land and properties sold within one year of purchase was introduced in February 2010, and later in the year the holding period for stamp duty was extended to three years. In January 2011, Seller's Stamp Duty was increased and the holding period for its imposition was raised from three to four years; in January 2013, Additional Buyer's Stamp Duty was raised for all types of buyers except citizens purchasing their first property (Tables 1, 2). The supply of properties was increased and the completion time of build-to-order apartments was shortened. The measures seemed to be effective; property sales and price growth declined. At the same time, prices for single-family houses continued to rise, indicating the likely continuation of speculative activity.

Table 1. Seller's Stamp Duty (SSD) for Residential Properties

Date of purchase	Holding period	Rates
14 January 2011 to present	Within 1 year	16%
	1 to 2 years	12%
	2 to 3 years	8%
	3 to 4 years	4%
	More than 4 years	0

Source: Inland Revenue Authority of Singapore.

Table 2. Buyer's Stamp Duty (BSD) and Additional Buyer's Stamp Duty (ABSD) for Residential Properties in Singapore

BSD rates: 1% of the first \$180,000; 2% of the next \$180,000; 3% on the remainder

Profile of buyer	ABSD rates	ABSD rates
	Dec 2011 - Jan 2013	Jan 2013 to present
Foreigner and entity buying any residential property	10%	15%
Singapore Permanent Resident buying 1st residential property	0	5%
Singapore Permanent Resident buying 2nd and subsequent residential property	3%	10%
Singapore Citizen buying 1st residential property	0%	0%
Singapore Citizen buying 2nd residential property	0%	7%
Singapore Citizen buying 3rd and subsequent residential property	3%	10%

Source: Inland Revenue Authority of Singapore.

Appendix 3. International Experience with Hosting Global Events

Historical evidence on the economic impact of hosting World Expos is mixed:

- Expo 2010 in Shanghai generated up to USD 10 billion, and the impact on growth was substantial; however, cost overruns were extensive, with the final cost of holding the fair at about USD 50 billion, higher than Beijing's spending on the 2008 Olympics. The event also left an overhang of empty buildings that were subsequently demolished.
- In Hannover 2000, impact on the city's growth was insignificant because investments were mostly focused on the fair itself (the infrastructure was already well developed). Only about half of the expected 40 million visitors attended, resulting in losses of USD600 million.
- The 2005 Aichi Expo in Japan was attended by 22 million visitors, but generated only USD122 million.
- Some World Expos left a highly positive legacy, which was little in direct economic terms, but indirectly benefitted the countries and their populations. The examples include the Eiffel Tower in Paris (1889); the Palace of Fine Arts in San Francisco (1915); a city park in Spokane, Washington (1974); the Science City research and development park in Tsukuba, Japan (1985); and the South Bank Parklands in Brisbane, Australia (1988).

International experience from the Olympic Games also points to a large risk of substantial cost overruns and public debt:¹

- In the 1976 Olympic Games in Montreal, the projected cost of the event was USD 124 million, but the actual cost was much higher, leaving Montreal with a debt of USD 2.8 billion (it took many years to repay the debt).
- Los Angeles generated surplus during the Olympics in 1984 because the city did not spend much on construction. Moreover, the bulk of financing was borne by the private sector, an experience that was difficult to repeat in subsequent games.
- The Barcelona Olympics in 1992 resulted in a USD 4 billion debt for the central government, and an additional USD 2.1 billion debt for the local governments.
- The 1998 Nagano Games in Japan also left the various levels of the government USD 11 billion in debts because of higher spending.

¹ See "Is It Worth It?" *Finance and Development*, March 2010; and "The economic impact of the Olympic Games", PricewaterhouseCoopers *European Economic Outlook*, June 2004.

- The 2004 Olympic Games in Athens had initial cost estimates of USD 1.6 billion. Actual cost reached 10 times that amount.
- Beijing projected costs of USD 1.6 billion for the Olympics in 2008, but the final cost reached USD 40 billion.
- The 2014 Games in Sochi, Russia, were budgeted at USD 12 billion; the preliminary cost as of October 2013 was USD 51 billion, with most of the amount financed by the public sector.

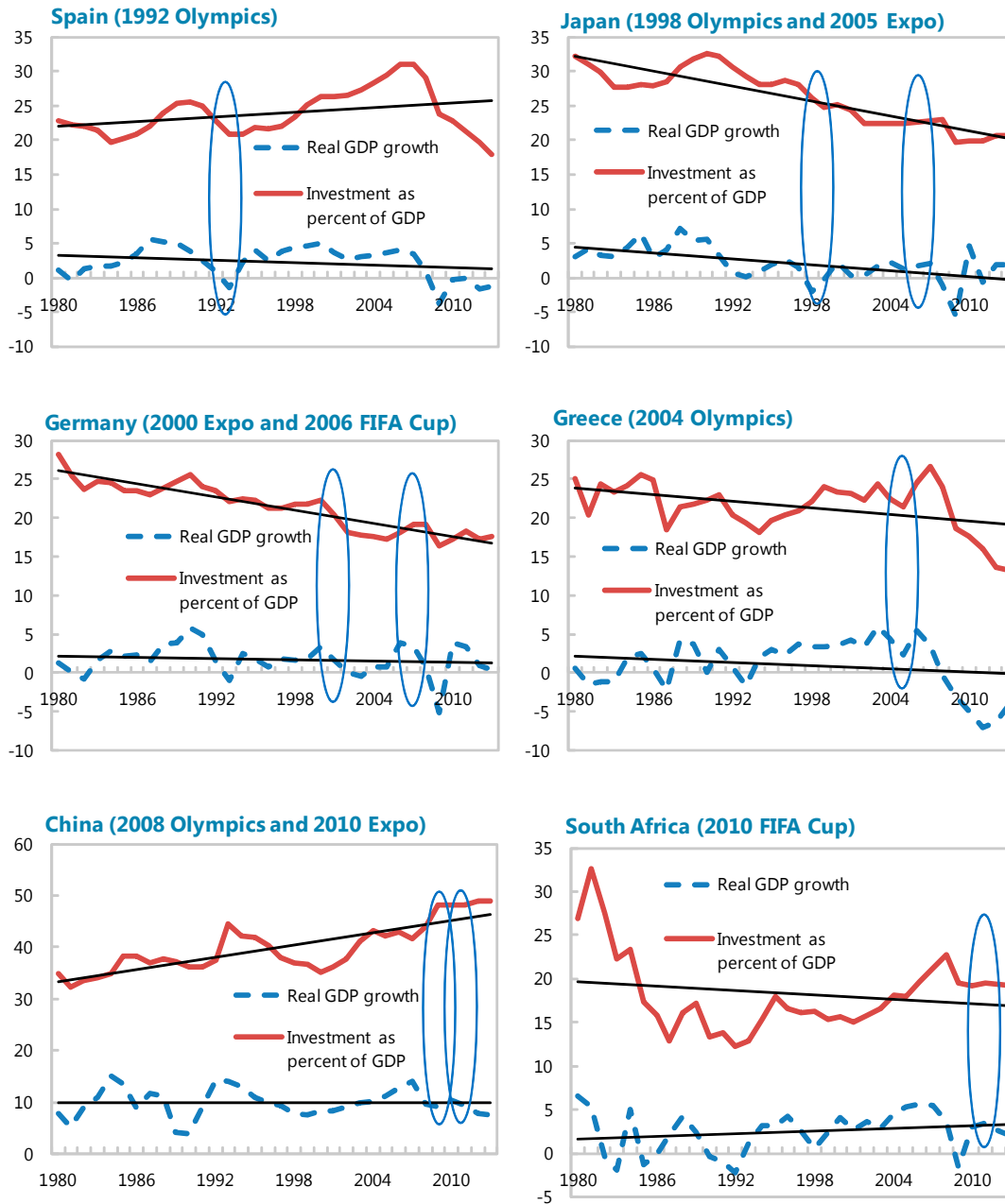
Experience from some soccer World Cups suggests that the effects on the economy from tourism and consumption can be small, with significant cost overruns taking place:

- For the 1996 FIFA World Cup in France, ex ante reports had expected 500,000 tourists for the event; in fact, no increase was registered in the overall level of tourists compared to a previous year. As a result, retail sales and consumption did not increase substantially during the event.
- Economic benefits from the 2002 FIFA World Cup in South Korea were lower than expected.
- For the 2006 FIFA World Cup in Germany, ex-ante studies had pointed to an increase of 340,000 tourists (some studies had even indicated more than 3 million tourists); the final number was less than 100,000. As in France, retail sales and consumption in Germany did not increase sizably.
- In South Africa, the 2010 FIFA World Cup was hosted with a cost substantially larger than initially planned.

In some countries that hosted global events, growth slowed down somewhat in the year after the event; in other countries growth remain unchanged (Figure 1).

- By the time Barcelona was approaching the Olympics in 1992, public consumption and investment slowed. In 1993, these aggregates contracted, falling below their trends; although, the contraction was also driven by a wider economic slowdown in Europe at that time. In the aftermath of the 2000 Expo in Hannover, growth in Germany slowed, which was also driven by an exogenous factor: in 2001, economic growth slowed globally. Growth in Greece's economy slowed after the 2004 Olympics, but was still higher than its trend. After the 2010 Expo in Shanghai, growth decelerated, also on account of unwinding fiscal stimulus and other measures aimed at cooling the housing sector.
- Following the Nagano Olympics in 1998, growth was almost flat and lower than its trend, while after the 2005 Expo in Aichi, growth increased slightly, rising to a level above the trend. In 2007, the year after the FIFA World Cup, growth was almost unchanged, though above its trend. Growth in China after the 2008 Olympics, and in South Africa after the 2010 FIFA World Cup, stayed practically unchanged.

Figure 1. Deviations from Trend Real GDP Growth and Total Investment in the Year Following the Event



Source: IMF.

THE EFFICIENCY OF PUBLIC SPENDING IN THE UNITED ARAB EMIRATES¹

1. **In 2014, the federal and emirate governments will together spend about AED 350 billion, or about one quarter of the United Arab Emirates' GDP.** The spending will promote important goals such as "equal opportunity and access to first-rate education" and "long and healthy lives" for all Emiratis (United Arab Emirates' Vision 2021). The efficiency with which this money is spent will help determine the extent to which these goals are met. Assessing and, where possible, improving the efficiency of the spending is thus of great importance.
2. **This paper examines the efficiency of the United Arab Emirates' public spending.** It starts by looking at survey-based indicators of the effectiveness of government spending, and then compares outcomes such as life expectancy and school test scores with the amount that Emirati governments spend on health and education. Drawing on a regional study, it then looks in more depth at the efficiency of public investment, by (i) comparing the quality of infrastructure with spending on public works, (ii) examining scores on the Public Investment Management Index, and (iii) presenting data on the cost of constructing roads and metros. Because budgeting determines how public resources are used, the paper turns finally to an examination of the federal government's new approach to budgeting, which aims to improve the efficiency of spending by establishing a three-year cycle, classifying spending into programs and services, and tracking performance indicators.
3. **Budgeting and assessments of the efficiency of public spending confront important measurement problems.** The objectives of government spending are often multidimensional and hard to specify precisely. In addition, the achievement of the government's objectives depends on factors outside the government's control. These problems mean that governments must allocate spending in the budget on the basis of highly imperfect information. They also make any assessment of the efficiency of public spending necessarily provisional.

A. Overall Perception of Effectiveness

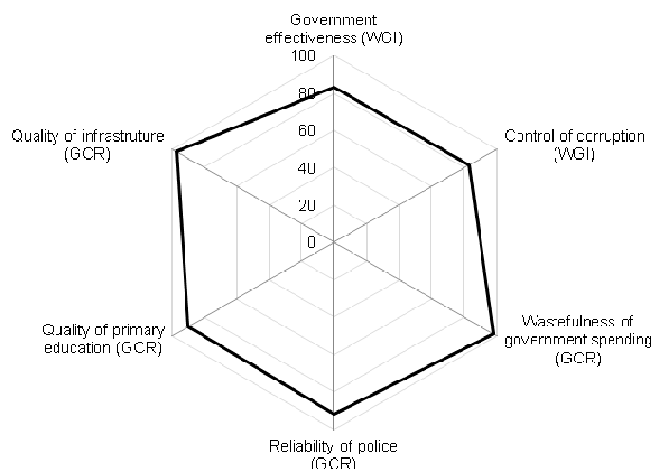
4. **Surveys show that governments in the United Arab Emirates are generally perceived as effective (Figure 1).** Some of the World Bank's Worldwide Governance Indicators, which are based mainly on surveys, are relevant to the effectiveness of government spending. The 2012 results ranked the United Arab Emirates 35th and 36th, respectively, out of 215 economies for government effectiveness and the control of corruption.² Transparency International's 2013 Corruption Perceptions Index also ranks the United Arab Emirates well (26th out of 177 economies). Several

¹Prepared by Tim Irwin and Bahrom Shukurov under the guidance of Harald Finger and with assistance from Peter Gruskin.

²See <http://info.worldbank.org/governance/wgi/index.aspx#doc>.

other, mainly survey-based results come from the World Economic Forum's *Global Competitiveness Report 2013–14* (World Economic Forum, 2013). This gives the United Arab Emirates high rankings for the absence of wastefulness of government spending (third best in a sample of 148 economies). The reliability of the police is rated 12th best, and quality of primary education 19th best. As detailed below, the United Arab Emirates' infrastructure is rated fourth best in the world.

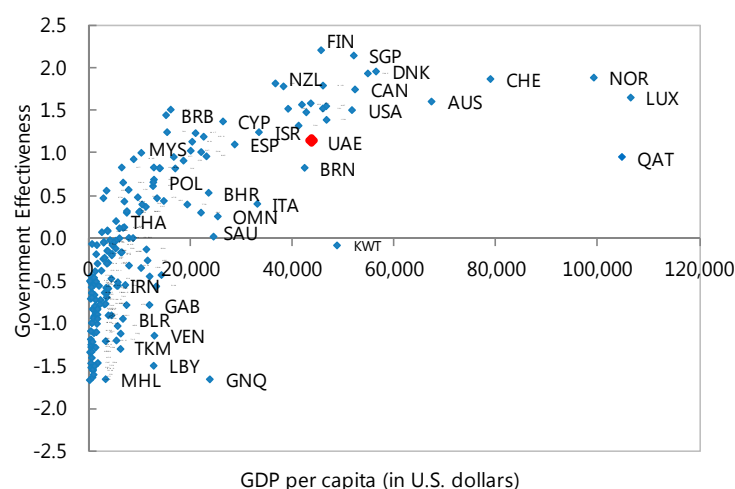
Figure 1. Selected Indicators Relevant to Efficiency of Public Spending
(Percentile, 2012)



Source: World Bank's Governance indicators (WGI) and *Global Competitiveness Report, 2013/14* (GCR).

5. Stronger evidence of efficiency requires comparisons of outcomes with spending.

Survey participants may have a good idea of the quality of government services, but they generally do not know how much the services cost to produce. High-income countries can usually provide better services whether or not they are efficient. The United Arab Emirates' score on government effectiveness, for instance, is high relative to those of most other countries, but not especially high given the country's per capita income (Figure 2). To evaluate efficiency, it is necessary to compare indicators of quality with information on spending.

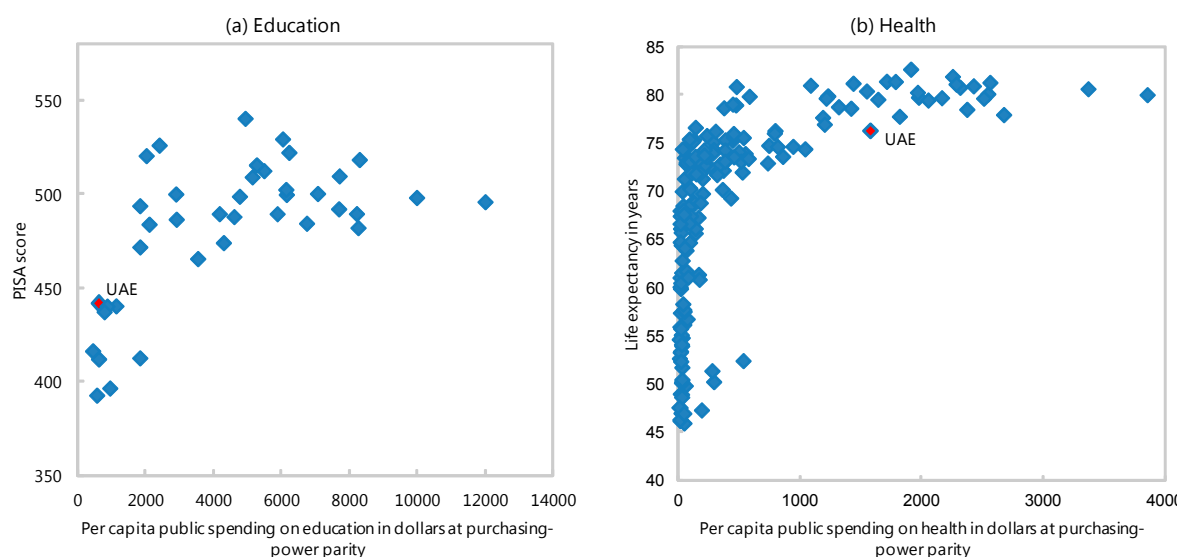
Figure 2. Perceived Government Effectiveness and GDP Per Capita, 2013

B. Efficiency of Spending on Health and Education

6. **On the face of it, public spending on education is low but efficient.** A common measure of the outcome of education spending comes from Program for International Student Assessment (PISA) tests of students' ability in reading, science, and mathematics. In the United Arab Emirates, PISA scores are a little below average. But the United Arab Emirates appears to spend very little per capita on education compared to other countries of similar incomes, and no country that spends as little as the United Arab Emirates has higher PISA scores (Figure 3, panel (a)). In this sense, the data suggest *prima facie* (we consider some qualifications below) that Emirati governments are efficient in producing educational outcomes, but they also raise the question of whether the United Arab Emirates is spending too little on education.

7. **Public spending on health, by contrast, is relative high, but seems less efficient.** The data suggest that, relative to other countries, UAE governments' spending on health is much higher than is their spending on education. Here, however, the data suggest that there is room for improved efficiency. Panel (b) of Figure 3 shows that, in several countries, people expect to live longer than in the United Arab Emirates even though their governments spend less.

Figure 3. United Arab Emirates: Public Spending and Selected Outcomes in Education and Health, 2012



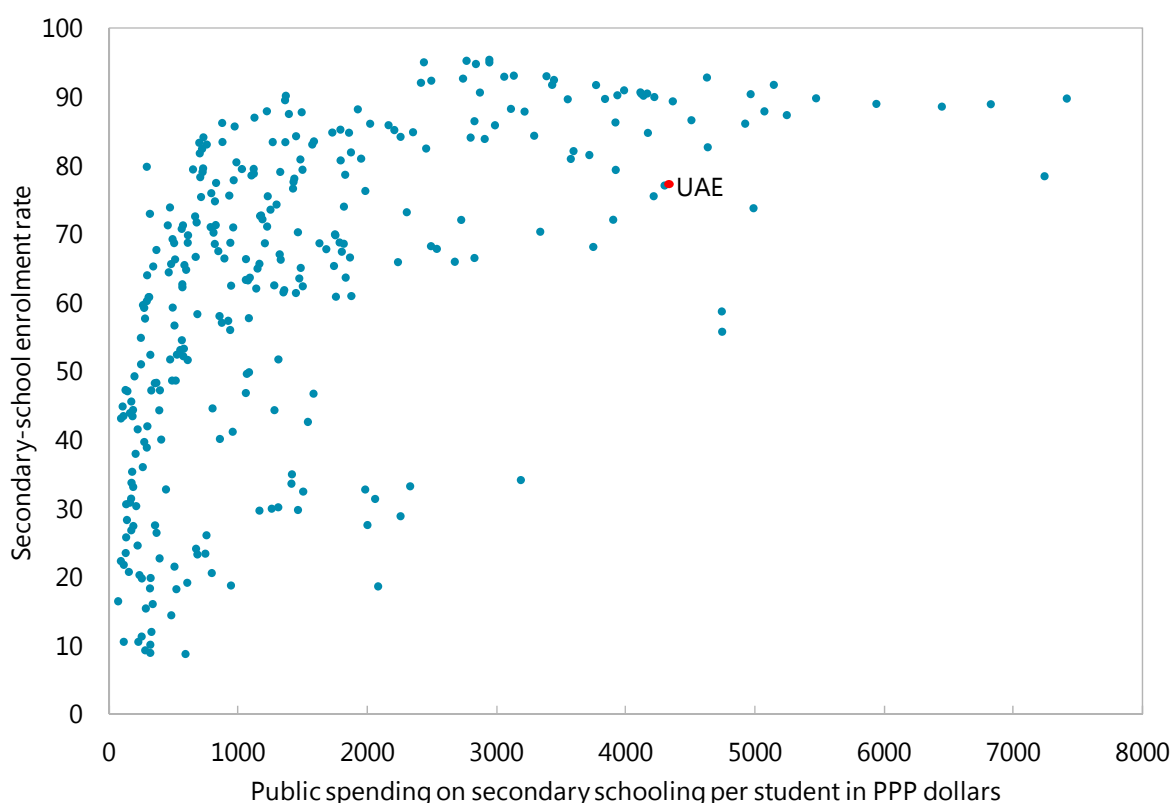
Sources: OECD for PISA scores. Public spending on education in the UAE is for 2011 and is taken from the Government Finance Statistics Yearbook 2013 (IMF, 2014, p. 519). For the UAE, the purchasing-power-parity exchange rate is the same as the actual exchange rate, according to the World Bank (<http://data.worldbank.org/indicator/PA.NUS.PPPC.RE>). Note: The PISA scores are unweighted average of 2012 mean scores

8. **These initial comparisons are, however, far from conclusive.** First, the achievement of the governments' objectives cannot be satisfactorily summarized by a single indicator such as test scores or life expectancy. Education, for instance, is about more than teaching students to read, understand science, and solve mathematical problems. Second, the extent to which the governments' objectives are met depends on more than just the efficiency of public spending. Longevity, for instance, may depend on private as well as public spending on health care, and on diets, exercise, climate, and so on. For these reasons, the apparent room for improvement in the efficiency of health spending in the United Arab Emirates suggested by Figure 3(b) (above) could be an illusion. Likewise, public spending on education may be low in the United Arab Emirates per capita because many residents are immigrant workers without school-age children. Finally, there may be errors in the measurement of spending and outcomes and cross-country differences in definitions. The United Arab Emirates is only just beginning to measure consolidated government spending and classifying that spending by function, so its data need to be viewed with particular caution. In particular, some spending on education may not be classified as such.³

³The classification of the United Arab Emirates' spending by function assigns a very large share to "general public services" (IMF, 2014, pp. 518–19), a category that may include some spending on education.

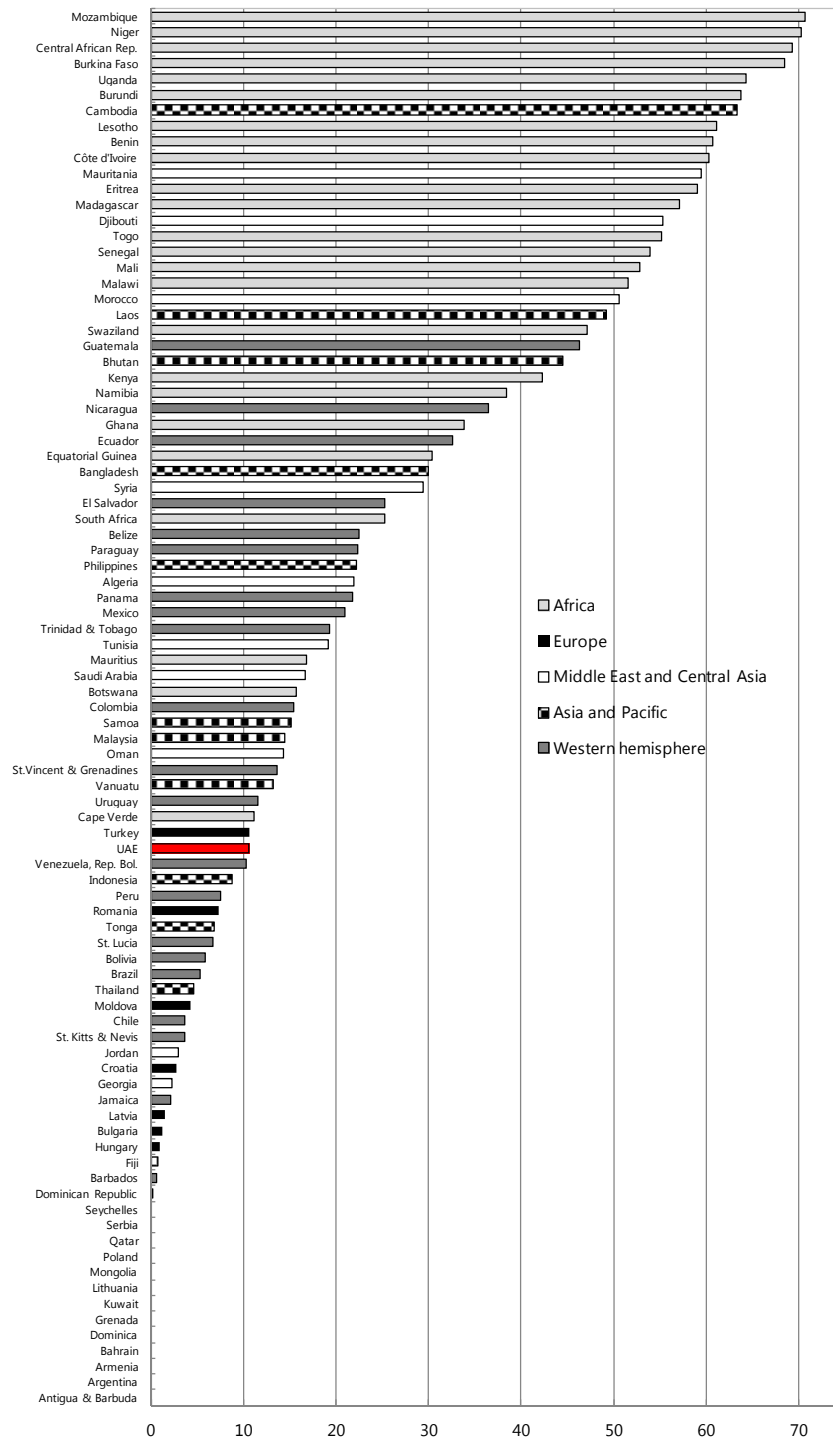
9. **It is possible to mitigate some of the problems with simple comparisons.** Health spending, for instance, can be compared not with life expectancy but with a measure developed by the World Health Organization of *health-adjusted* life expectancy (see Grigoli and Kapsoli, 2013). Substituting this measure for simple life expectancy in Figure 3(a) above also suggests that spending in the United Arab Emirates has room for improvement in efficiency. It is also possible to compare spending not with outcomes such as ability to read and solve mathematical problems, but with outputs, such as numbers of students taught. Outcomes are what ultimately matters, but outputs are what are under the government's control. Grigoli (2014) considers spending on secondary education and secondary-school enrolments in emerging and developing economies. His data imply that public spending on *secondary education per student* (in contrast to total education spending per capita as shown in Figure 3(b) above) is relatively high. His results suggest that Emirati governments are more efficient in the production of schooling than most, but that more students could still be educated without increasing spending if the United Arab Emirates were fully efficient (Figures 4 and 5). As these issues suggest, a satisfactory assessment of the efficiency of spending requires an examination of the problem from many angles, including detailed public-expenditure reviews which are beyond the scope of this study.

Figure 4. Public Spending and Enrollment Rates in Secondary Schooling



Source: Grigoli (2014, figure 6).

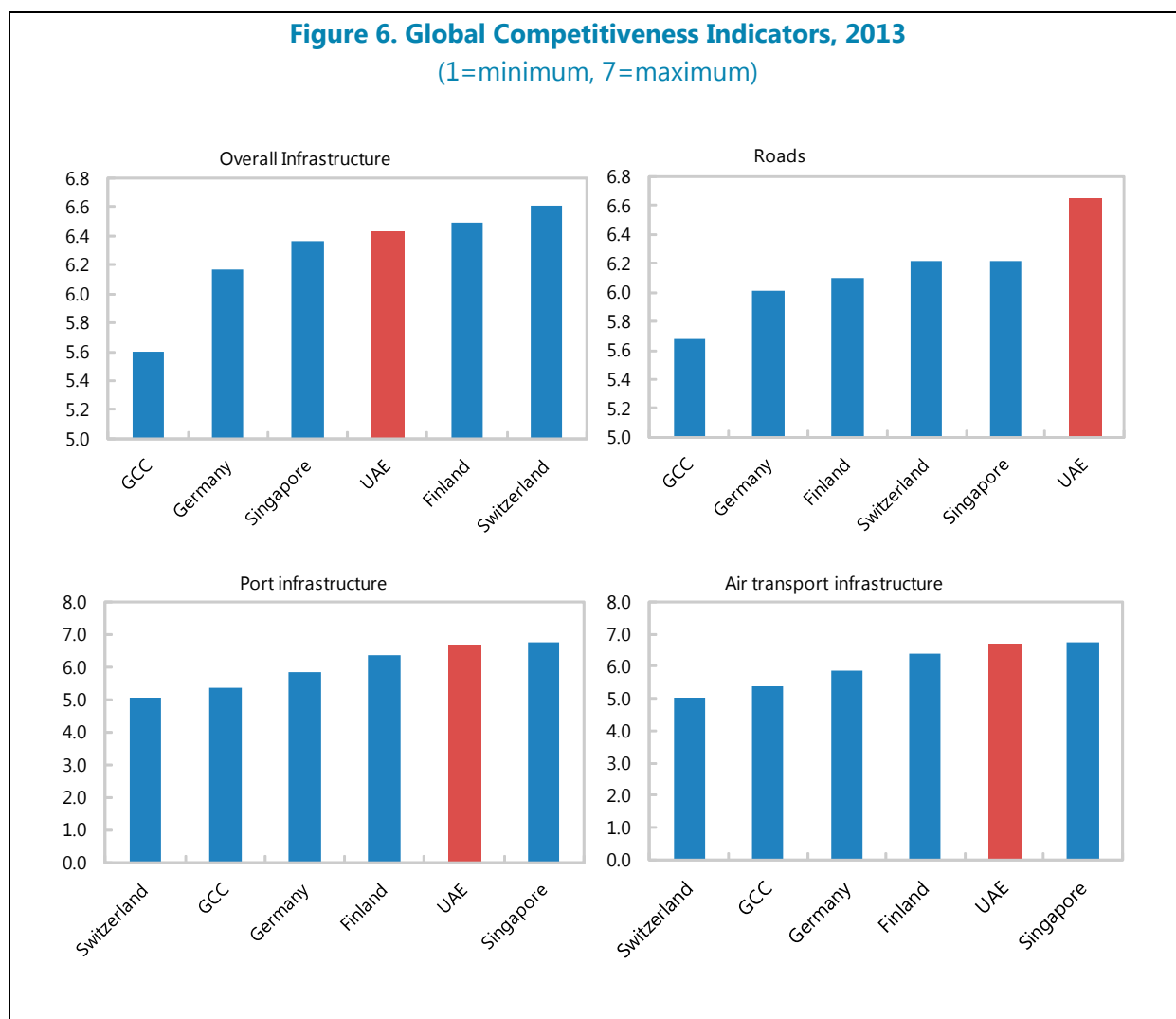
Figure 5. Potential Efficiency Gains in School Enrolment
(Percentage)



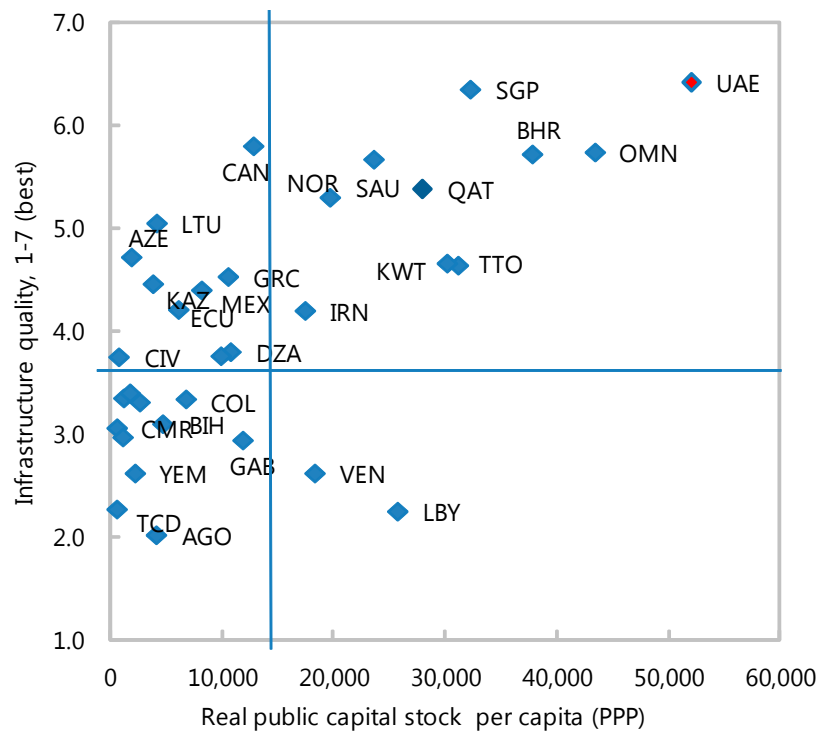
Source: Grigoli (2014, figure 6).

C. A Closer Look at the Efficiency of Public Investment⁴

10. **As noted above, the perceived quality of United Arab Emirates' infrastructure is high.** According to the World Economic Forum's Global Competitiveness Indicator's 2013/14, the United Arab Emirates' ports are the fourth best in the world, its air transport the third best, and its roads the best. In terms of overall infrastructure quality, the United Arab Emirates compares favorably to advanced countries such as Finland, Germany, Singapore, and Switzerland, and its public capital stock is high (Figures 6, 7).



⁴ This section is based on Albino-War and others (forthcoming).

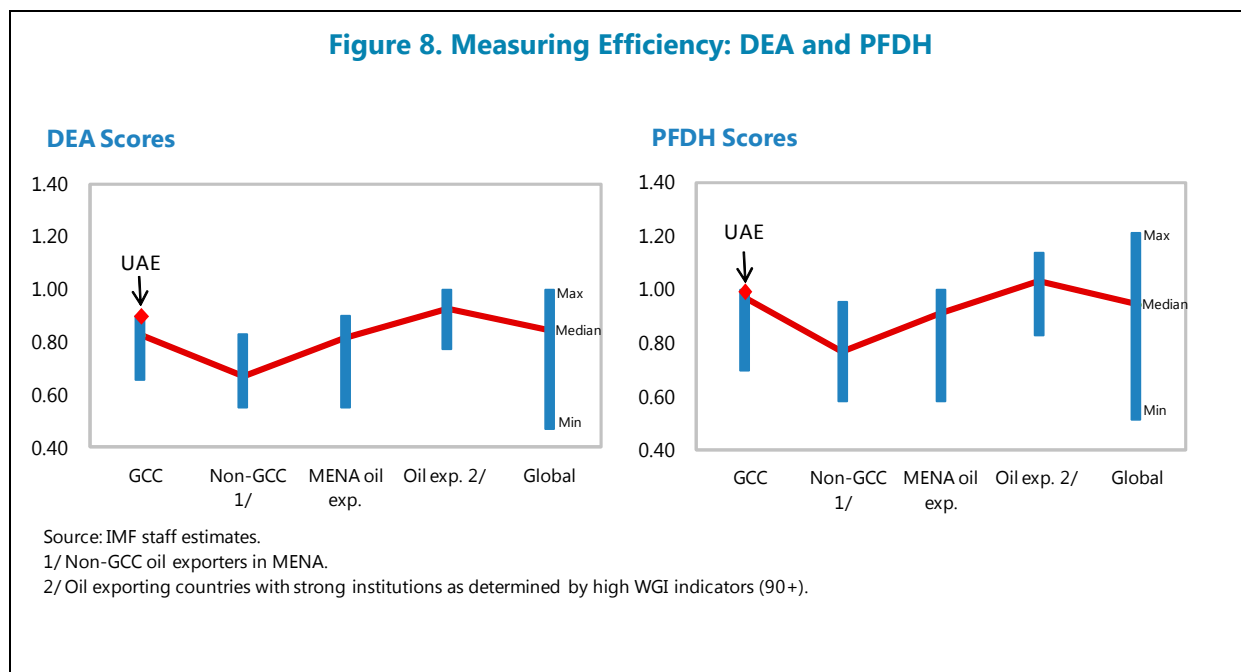
Figure 7. Public Capital Stocks and Quality of Overall Infrastructure, 2013

Sources: Global Competitiveness World Economic Forum; IMF staff

D. Efficiency Frontier Analysis

11. **The efficiency of public investment can be assessed using two techniques that measure how well countries transform inputs (money) into outputs (infrastructure).** Specifically, efficiency can be measured using a Data Envelopment Analysis (DEA) and a Partial Free Disposal Hull (PFDH). The main difference between these approaches is that the DEA compares each country against a fixed country sample, whereas the PFDH makes the comparison against repeated randomized subsamples, thus reducing sensitivity to outliers (See Appendix 1 for details). In the analysis reported here, output (the quality of infrastructure) was approximated using the infrastructure subcomponent of the Global Competitiveness Indicators, while inputs were measured as the real public capital stock per capita in PPP terms, taken from the Penn World Table. GDP per capita is included as a control variable. In addition, PFDH analysis was conducted to limit sensitivity to outliers. In both cases, a higher score implies greater efficiency.

12. **The results of both methods suggest that the efficiency of UAE public investment spending compares favorably to peers in the Gulf and the wider MENA region (Figure 8).** The United Arab Emirates has attained a relatively high degree of infrastructure quality, having spent an amount of resources comparable to amounts spent by other Gulf Cooperation Council countries. The DEA results suggest that the United Arab Emirates' score is among the highest among the GCC and non-GCC oil exporters. That said, comparing the United Arab Emirates with some advanced economies with strong institutions such as Canada, Chile, and Singapore, suggests room for further improvement. The results derived from the PFDH assessment are broadly similar.

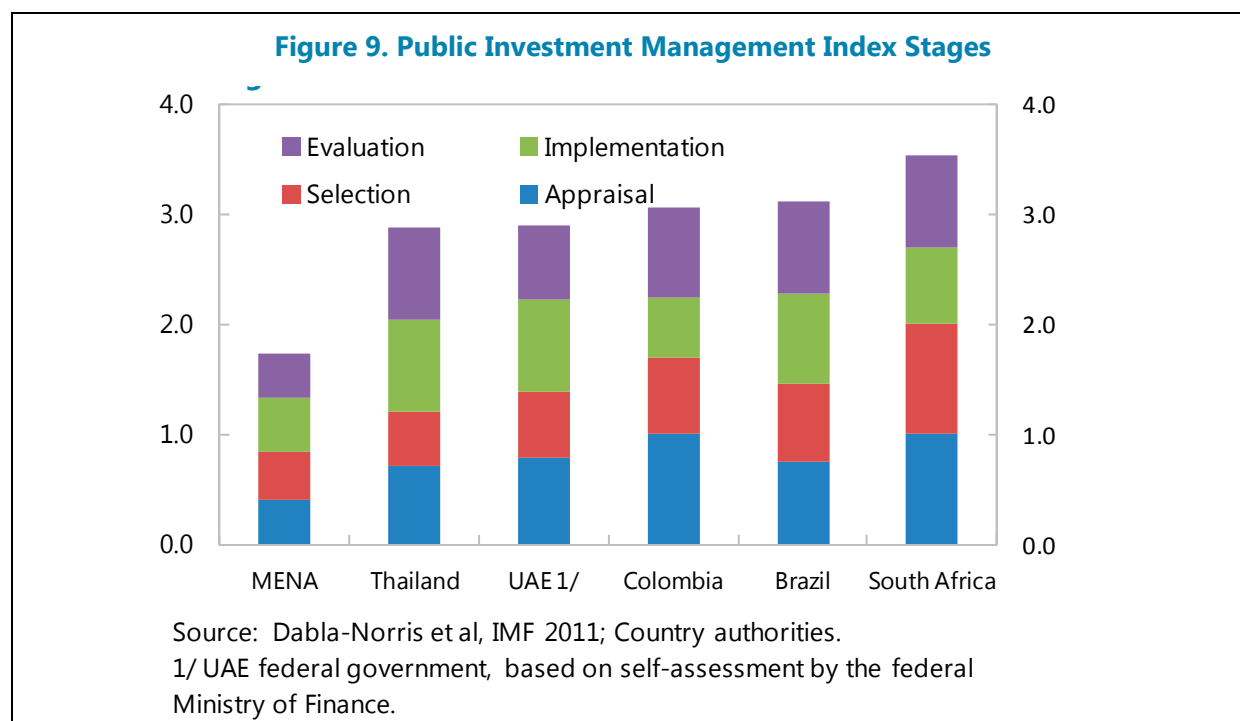


E. Public Investment Management Index

13. **The processes that are used to manage public investment can be examined using the Public Investment Management Index (PIMI).** This index measures the quality of the institutions that influence the efficiency of public investment at the four main stages of the investment cycle: appraisal, selection, implementation, and evaluation. It was developed by Dabla-Norris and others (2011) for 71 countries using diagnostics of countries' public investment management systems conducted by the World Bank, budget survey databases, donor assessments, and expert surveys.⁵ The United Arab Emirates' scores are based on a self-assessment by the federal Ministry of Finance on the basis of the survey developed by Dabla-Norris et al (2011). Since the self-assessment covers only federal spending, its findings are limited to a relatively small share of overall public investment spending in the United Arab Emirates.

⁵ Appendix 2 lists the practices assessed and the benchmarks covered by the index.

14. **While the federal government of the United Arab Emirates performs significantly better than MENA countries on average in terms of PIMI scores, there are some opportunities for further improvement.** The self-assessed PIMI components indicate that the federal government of the United Arab Emirates fares better than the MENA average in all stages (Figure 9). In relative terms, it performs better in the appraisal and implementation stages of the project cycle than in the selection and evaluation stages. The following could further strengthen project selection and evaluation: (i) more explicitly incorporating recurrent cost implications in the investment selection process; (ii) strengthening the process of ex-post evaluation of domestic projects, and (iv) further improving an asset register or inventory of public sector property. Norway's recent experience shows that improvements in project selection may lead to significant cost savings (Box 1).



F. Project-Level Investment Analysis

15. **The efficiency of public investment can also be assessed by examining the construction costs of large public infrastructure projects.** The cost estimates are based on project-level data for MENA oil-exporting countries from the Zawya database. Given data limitations, the analysis considers only metro projects and large-scale road projects (i.e., roads longer than 20 kilometers).⁶ Unit costs are estimated on the basis of contracted prices and planned capacity (i.e., they are not necessarily the actual costs). The main caveat to this analysis is that other

⁶ For metros, there are data on projects in Algeria (1 project), Iraq (1), Kuwait (1), Qatar (5), Saudi Arabia (4), and the United Arab Emirates (4). For roads, there are data on projects in Iraq (1), Kuwait (1), Oman (1), Qatar (4), Saudi Arabia (3), and the United Arab Emirates (6).

factors that could affect the unit cost (e.g., quality, technical complexities, etc) are omitted because of a lack of comparable information.

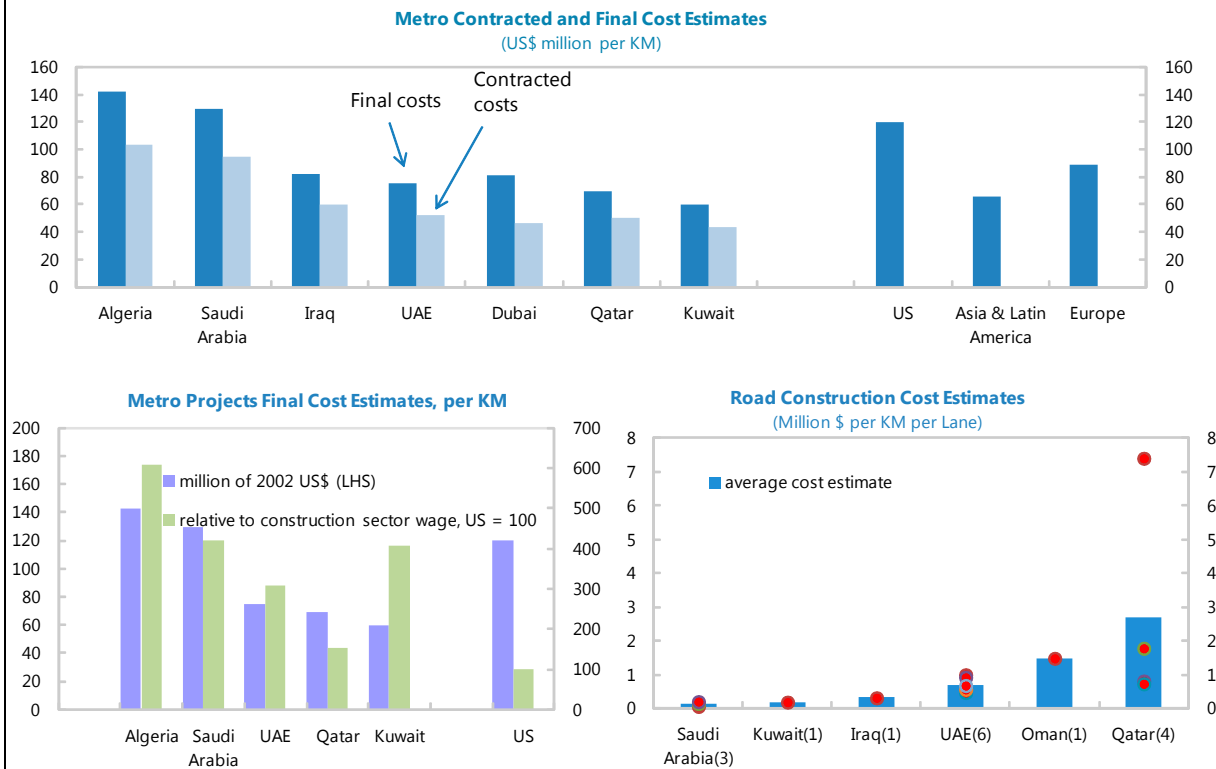
16. **Contracted metro construction costs in the United Arab Emirates appear relatively low, but are subject to the risk of cost overruns (Figure 10).** The per-kilometer cost of metro projects based on contract values is lower in the United Arab Emirates than in neighboring countries. Nevertheless, the substantial cross-country variation in these estimates, even within the GCC, could reflect uncertainty about the final costs of the metro projects and therefore suggest the risk of substantial cost escalation. Flyvbjerg and others (2002) finds an average cost overrun of 45 percent for rail-related projects, with a higher average overrun (65 percent) for projects outside Europe and North America. The experience of Dubai provides a cautionary tale, with final costs exceeding the contracted spending by 75 percent.⁷

17. **Metro projects seem more expensive in the United Arab Emirates when adjusting for its low labor costs, although the final costs estimates in UAE still appear reasonable compared to selected global benchmarks.**⁸ The estimate of final cost for the United Arab Emirates is slightly higher than the average cost in Asia and Latin America, but is lower than the cost in the United States and Europe (Figure 10). Once low wage costs are taken into account, the United Arab Emirates still compares favorably to its MENA peers, although it appears more expensive than the United States. (Figure 10). However, an important qualifier to the comparison with the United States is that this calculation does not control for the different costs of raw materials that the United Arab Emirates must import from foreign countries at an additional expense.

18. **The construction costs of large road projects in the UAE appear comparable to those of other countries in the region (Figure 10).** The estimated per-kilometer per-lane cost of road projects in the UAE ranges from \$0.5 million to \$1 million. In contrast, the equivalent cost ranges from \$0.7 million to \$7.4 million in Qatar. Flyvbjerg (2007), Flyberg, Skamris, and Buhl (2002), and experience in the region suggest that cost escalation is less of a concern for road than metro projects. The Muscat Expressway in Oman, completed in 2012, for example, cost close to \$350 million, compared to a contract value of \$330 million, a 6 percent cost overrun.

⁷ Zawya database.

⁸ Where data on the final costs of metro projects were not available, we assumed a 65 percent cost overrun (from Flyvbjerg, 2008). This is mainly applied to MENA countries, while actual costs were available for the United States, Asia/Pacific, and European countries. Cost estimates and actual costs were converted to 2002 prices using the U.S. construction price index.

Figure 10. Metro and Road Construction Cost Estimates

Sources: Zawya Projects; Flyvbjerg et al (2008); country authorities; and IMF staff calculations.
1/ Final cost estimates are in 2002 US\$ per KM.

Box 1. Norway Governance Framework for Public Project Implementation

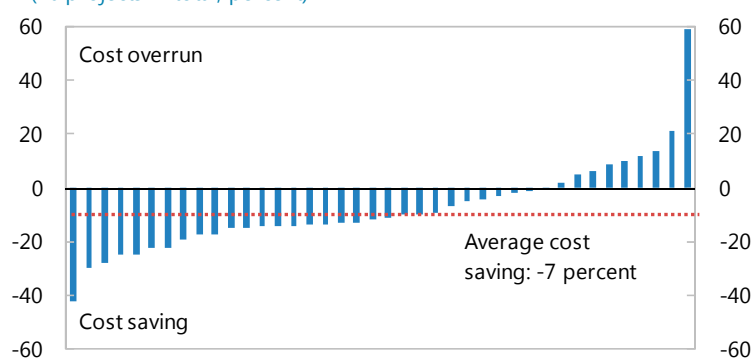
The Ministry of Finance in Norway initiated a *Quality Assurance Scheme (QAS)* in 2000.

Norway experienced a series of unsuccessful major projects and repeated overspending during the 1980s and 1990s. Following an investigation, the Ministry of Finance introduced a mandatory external assessment of state-financed projects over \$500 million. The goal was to improve quality-at-entry by clearly demarcating political from administrative decisions.

The QAS has two stages that ensure that projects undergo comprehensive analysis before being approved. The first stage focuses on the rationale for the project, and consists of quality assurance of a series of strategic documents: a needs analysis, an overall strategy document, an overall requirements specification, and an analysis of alternatives. The second stage is undertaken by the end of the planning phase, before a formal submission is made to parliament. It is documented in a report containing the consultant's advice on a cost frame for the project. Between the two stages, there are several coordination forums where the Ministry of Finance gathers interested people for discussions. As of 2013, the scheme has worked for 13 years and been applied in 160 projects.

Evidence indicates that the QAS has led to remarkable cost savings. A research paper shows that 32 of the 40 projects submitted to QAS in 2000–09 and implemented in 2000–12 were completed within the cost frame (Samset and others, 2003). The net saving was estimated at about 7 percent of total investment, which is notably better than in the 1990s (Text Figure). By comparison, a study of 11 public investment projects planned and implemented in the 1990s concluded that only three projects were delivered within the agreed cost frame, while the combined cost overrun was about 80 percent (Berg and others, 1999).

Norway: Deviation between final project cost and project budget, 2000–12
(40 projects in total, percent)

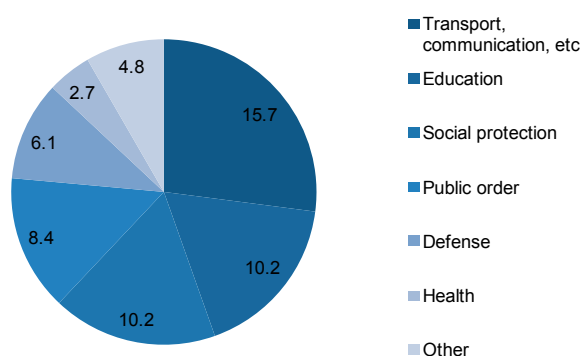


Source: Samset, *et al* (2013)

G. The Federal Government's New Budget

19. **Budgets are crucial to the efficiency of spending.** They are where governments decide how to allocate spending between sectors and, within sectors, different programs (Figure 11 shows the allocation of federal spending by function in 2011). These choices can obviously have a major influence on the efficiency of public spending. In education, for instance, governments must choose how much to spend in total and how to divide that amount between preschool, primary, secondary, and tertiary education. Getting the balance right may have a major influence on lifetime learning. Within each program, the budget must also encourage productive efficiency, that is, maximizing results, given the allocation to the program.

Figure 11. Federal Spending by Function, 2011
(Dirham billions)



Source: Government Finance Statistics Yearbook 2012, pp. 466–67.

20. **Until recently, the federal government had a traditional budget.** As in many other countries, spending was allocated among ministries and autonomous agencies and within each organization among various input costs (wages, goods and services, capital, etc.). Budgeting was done on an annual basis, with limited analysis within the budget framework of the implications of decisions beyond the budget year. Costs were (and for the time being still are) measured exclusively on a cash basis. When enforced, such budgets not only control total cash disbursements but also ensure that money is spent on the intended inputs.

21. **Traditional budgets have several drawbacks, however.** First, they do not specify the services the government is producing, how much it spends to produce those services, or what the purpose of producing the services is. That makes it hard for the public, and the government itself, to judge whether the spending is justified. Second, cash accounting does not generally reflect the true costs of providing services—when employees have defined-benefit pensions, for instance, the full cost of employment in a given year may greatly exceed cash disbursements in that year. Third, the detailed controls that stop the misuse of funds can prevent managers from sensibly reallocating spending in response to new developments or to new information. Fourth, the annual nature of

traditional budgets makes it easy to ignore future costs, such as the ongoing maintenance costs associated with this year's capital spending and can encourage governments to meet this year's budget target with fiscal gimmicks that delay the recognition of costs till future years. Finally, government agencies sometimes need long lead times to scale up or cut back large spending programs efficiently. So, purely annual budgets—with no credible estimates of spending ceilings for future years—can increase budgetary costs.

22. Influenced by such concerns, many governments around the world have redesigned their budgets. The reforms have differed from country to country, but most have aimed to redirect attention from inputs to results, to better measure costs, and to pay more attention to spending beyond the budget year. Nearly all OECD member governments measure the performance of spending programs in some way, and nearly three-quarters include such information in their budgets (OECD, 2007). Medium-term approaches to budgeting are also now routine (Harris and others, 2013). Accrual accounting is also widespread in advanced economies (Blondy and others, 2013), though cash budgeting remains common.

23. The federal government has recently overhauled its budget in a similar way. The new system has several parts:⁹

- The development of three-year government strategies, designed to realize the United Arab Emirates' "Vision 2021." Individual ministries and autonomous government agencies also prepare their own strategies.
- The budget now follows the same three-year cycle. The first was prepared for 2011–13 and accompanied the government's strategy for the same period. The second has just been prepared for 2014–16.
- Budgeting at the beginning of each three-year cycle is zero-based, in the sense that there is a more thorough than usual estimation of the costs and benefits of programs. This zero-based budgeting is intended to involve "bottom-up cost allocation without prior assumptions, the challenging of budget proposals by using benchmarks, and prioritizing budgets between activities." Changes within each three-year period are incremental.
- Budgeting is "top-down." First, revenue is forecast, which yields a limit on total spending too, because the government must balance the budget.¹⁰ Following advice from the Financial and Economic Commission (FiCOM), the government then allocates total spending

⁹See the Ministry of Finance's *Federal Budget Planning Handbook* and the 2011 law on law on budgeting and accounting.

¹⁰The federal government controls only a small share of government spending, which is dominated by independent emirate governments, particularly Abu Dhabi, which receives most of the FiCOM' oil revenue and runs a large surplus.

among sectors and among ministries and agencies within each sector. Ministries and agencies then propose budgets that should be consistent with the limits.

- The budget is presented on the basis of programs, activities within programs, and now also services and with services subservices and supporting services. The Ministry of Finance's guidelines suggest that each ministry or autonomous agency have 5–10 "strategic objectives," each associated with 2–10 programs. Within the government, the Ministry of Cabinet Affairs works with line ministries to specify programs. Each ministry also has one or two administrative programs (described as the "administrative backbone") that are not output of the ministry, but inputs into the delivery of the other programs.
- Ministries and agencies have a set of financial performance indicators overseen by the Ministry of Finance and a set of nonfinancial performance indicators overseen by the Ministry of Cabinet Affairs.

24. **Changes in accounting and fiscal coordination are also being made.** The FiCOM' Vision 2021 seeks to establish "active coordination among levels of government and integrated national planning and execution in all policy areas." In the area of budgeting, there is a Fiscal Policy Coordination Council that includes the emirate departments of finance and the federal ministry of finance. The federal government has also begun to prepare consolidated fiscal information for general government. One of the goals of the sharing of information is to improve the efficiency of public spending by promoting complementary investments and avoiding undesirable duplication. Fiscal coordination—and the management of governments' finances individually—is also being promoted by the gradual adoption, at the level of each emirate and the federal government, of accrual accounting and, for the FiCOM as a whole, the IMF's accrual-based *Government Finance Statistics Manual 2001*.

25. **The reorientation of the federal government's budget is a welcome development.** The top-down approach to setting budgets should facilitate both fiscal control and efficient spending by, among other things, limiting the time-consuming and sometimes dysfunctional negotiations that can occur when line ministries initiate the budget process by proposing a long list of proposals whose total cost far exceeds the government's resources. Similarly, the three-year budget cycle should help give ministries and autonomous agencies more certainty about their future budgets and allow them to plan accordingly. Describing the budget in terms of programs and services based on the government's objectives, tracking performance, and aligning the budget with the government's strategy should all help focus attention on achieving the government's objectives. Moreover, the planned move to accrual accounting should provide better estimates of costs.

26. **International experience points to several possible issues to look out for.** It is probably too early to evaluate the federal budgeting reforms in the United Arab Emirates, but experience with similar reforms in other countries may be relevant.¹¹

27. **A very general challenge reported in the literature is that reforms that emulate “international best practice” often fail to work as hoped.** Schick (2013a) argues that the reality of budgets that have been reformed to conform to “best practice” frequently differs from their appearance. One reason is that line ministries and others may comply with the letter of the new law but not the spirit. Medium-term spending limits, for instance, may be carefully formulated but then ignored when the annual budget is prepared. Andrews (2013), who documents similar problems in developing countries, suggests addressing this kind of problem by ensuring that reforms respond to local problems and circumstances and are developed gradually by a process of trial and error.

28. **Other problems arise because of the abovementioned difficulty of measuring the attainment of government’s objectivities.** The first problem is that the intended results of spending are usually complex and multidimensional. A good police force prevents and successfully prosecutes crime, so good policing should lead to a low crime rate. But some crimes are more serious than others, so the crime rate is a crude measure of success. An index can be developed that gives different weights to different kinds of crimes, but even an index simplifies and the weights are inevitably subjective. The same problem arises in education and health, where PISA test scores and health-adjusted life-expectancy are at best incomplete measures of success.

29. **This problem can lead to performance that “hits the target but misses the point”** (Hood, 2006). In particular, international experience shows that line ministries may devote their efforts to improving those aspects of performance that are measured, while giving others short shrift. Teachers, for instance, may “teach to the test” rather than doing their best to help their students learn. The problem is summarized in Goodhart’s law: a measure that becomes a target may thereby cease to be a good measure. In addition, line ministries may choose to merely meet the target even if they could do more, because next year’s target may depend on this year achievement, and nothing is gained by overachieving. Or if they know they cannot meet the target, they may give up entirely instead of doing the best they can. At worst, they may simply misreport their performance.

30. **A second problem is that factors beyond the government’s control always influence the achievement of outcomes.** By definition, ministries can control *outputs*, but the *outcomes* that the government wants to achieve depend not only on those outputs but on factors outside the ministry’s control. Crime, for instance, may vary not only with the quantity and quality of police outputs but also with societal trends, demography, poverty, and drug epidemics. An increase in

¹¹See Curristine and Flynn (2013); Dixit (2002); Heckman, Heinrich, and Smith (1997); Robinson (2013); and Schick (2013a and 2013b).

crime does not necessarily imply that the police are performing poorly; conversely a decline does not necessarily imply good performance.

31. **Performance-based budgeting can worsen the asymmetry of information between line ministries and central ministries.** Whatever powers they may have, finance ministries and other central agencies have less information than line ministries about the costs and benefits of spending programs. Present in traditional budgeting, the problem may become worse in performance budgeting because more information must be produced and evaluated (Schick, 2013a, p. 54). A line ministry can set itself easy targets and, if it fails to meet them, explain why the fault lies in events beyond the ministry's control. In the United Arab Emirates, an additional complication arises because control is split. The Ministry of Finance supervises spending and financial performance indicators, while the Ministry of Cabinet Affairs is in charge of strategy, program design, and nonfinancial performance indicators. Yet assessing efficiency requires bringing together these two sets of issues.

32. **Part of the solution to these problems is to improve performance measurement.** Descriptions of the government's objectives, the outputs of ministries (programs, services), and performance targets can all be refined over time in response to experience, as has happened in the United Arab Emirates. Performance audits can be introduced, to check, among other things, that performance is accurately reported.

33. **Central ministries can also be given more resources to analyze performance and spending proposals.** To reduce the asymmetry of information, ministries of finance and prime ministers' offices need resources to review line ministries' performance and to question specifications of the government's objectives and descriptions of the ministries programs and services. This is a particular challenge in relatively small governments, such the United Arab Emirate's federal government, where effective supervision may require very close cooperation between the Ministry of Finance and the Ministry of Cabinet Affairs.

34. **In addition, the evaluation of performance should go beyond the monitoring of performance indicators.** Performance indicators can help detect possible problems or successes, but especially for large spending programs there should also be periodic reviews informed by careful analysis that attempts to distinguish the effects of the spending from those of other influences. The traditional approach in economics, among other social sciences, is to see how variations in government programs (e.g., in numbers of police) affect outcomes (e.g., crime rates), while controlling for other variables that are believed to affect the outcomes (e.g., demography). Such studies are more informative than mere tracking of performance indicators, but may still fail to isolate the effect of government programs. As a result, randomized controlled trials are increasingly used (Banerjee and Duflo, 2012; Deaton, 2012). Modeled on tests of new medicines, the trials isolate the effect of a government service by providing it to a randomly selected set of people or communities and comparing their outcomes to those of a control group that does not receive the service. Because of randomization, the "treatment" and control groups should not significantly differ except in whether they receive the services. Though such trials can be done only when it is possible

and appropriate to provide the service in question to some people but not others, they provide some of the most convincing evidence of the actual results of government spending.

35. **Another part of the solution is not to rely solely or too heavily on performance measures to improve performance.** Good performance comes in part from having well-trained nurses, doctors, managers, and other staff who want to do a good job for its own sake. Performance budgeting should thus complement rather than replace traditional concerns about hiring and motivating the right staff and creating organizational cultures that value high performance (Besley and Ghatak, 2003; Schick, 2013).

H. Conclusions

36. **This paper has reviewed the efficiency of spending in the United Arab Emirates.** It considered some survey-based indicators of the perceived effectiveness of Emirati governments and compared public spending on health and education with measures of health and education outcomes. It then offered a closer look at efficiency in public investment, first comparing cumulative investment with the quality of infrastructure, then analyzing the way public investment is managed, and finally assessing the comparative costs of road and metro projects. Because budgets are where many of the decisions critical to the efficiency of public spending are made, it also reviewed the federal government's new budgeting techniques, including the use of a three-year cycle, top-down spending ceilings, program classification, and performance indicators.

37. **On many dimensions, spending in the United Arab Emirates appears reasonably effective and efficient.** For example, Emirati governments are perceived as relatively effective and relatively good in controlling corruption and avoiding wasteful spending. Prima facie evidence suggests that education spending is efficient in producing educational outcomes, but surprisingly low, whereas health spending is higher but less efficient than in some other countries. In the area of infrastructure, services are perceived as some of the best in the world and the quality appears to come at a reasonable cost: data envelopment and partial disposable hull analyses suggest that the United Arab Emirates is among the most efficient countries in the region in public investment. Nevertheless, the analysis suggests that there is still room for improvement, for example, in some aspects of the management of public investment.

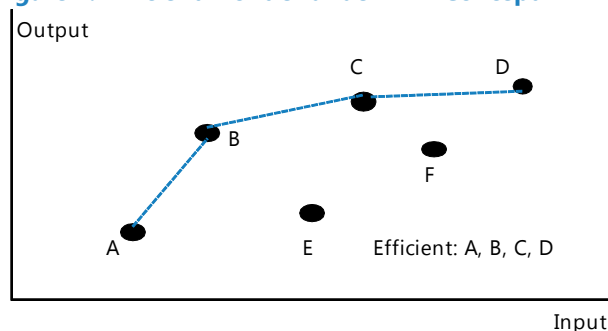
38. **The federal government's new approach to budgeting offers the promise of improved spending efficiency.** The federal government's new top-down, performance-oriented three-year budget approach helps clarify the objectives of spending, measure performance, and set relatively firm spending limits over the medium term, all of which are likely to improve the efficiency of spending. Because public spending in the United Arab Emirates is concentrated in the larger emirates rather than in the federal government, greater efficiency gains might therefore be possible from further strengthening the emirates' budget processes. Governments in the United Arab Emirates should also continue to improve the quality of fiscal data, so that basic questions—such as how much public money is spent on health, education, and infrastructure—can be answered with more confidence.

39. **The pervasive problems of measurement performance suggest that governments should pursue several complementary strategies for improving the efficiency of spending.** In addition to implementing the above reforms, governments should not lose sight of other factors that promote efficient spending including (i) well-staffed ministries of finance and other central agencies that can effectively analyze and, where appropriate, challenge line ministries' spending proposals; (ii) talented and well-trained staff with a strong professional desire to do a good job independently of performance monitoring; and (iii) rigorous evaluation, using econometrics studies and randomized controlled trials, of major spending programs outside the budget process.

Appendix 1. DEA and PFDH

Efficiency is assessed using a cross-country approach that measures the effectiveness of spending in producing outcomes. The relative efficiency is assessed using a Data Envelopment Analysis (DEA) technique. Based on the assumption of a convex production possibilities set, an “efficiency frontier” is constructed as the linear combination of efficient input and output combinations in the cross-country sample. The term “envelopment” is used because the frontier envelops the set of observations. Figure 1 illustrates an efficiency frontier that connects points A through D as these input-output pairs dominate others such as E and F. An efficiency score is computed by measuring the distance between a country and the efficiency frontier, so defined.

Figure 1. Efficient Frontier under DEA Concept



Although DEA does not require an assumption about the empirical distribution of the efficiency term, the approach has some shortcomings. Thus, DEA is a powerful tool for assessing spending efficiency, but it is highly sensitive to sample selection and measurement error. As a result, outliers can exert a large effect on the efficiency scores and shape of the frontier. For this reason, proper sample selection is critical to ensure that cross-country input-output bundles are comparable.

To deal with sensitivity to measurement errors and outliers, the efficiency analysis can be supplemented by a partial frontier method. This method generalizes a Free Disposal Hull (FDH)—a nonconvex, “staircase” frontier—by adding a layer of randomness to the computation of the efficiency scores. Instead of benchmarking a country relative to the best-performing peer in the sample, the method compares each country against the best performer in a sample of peers that produce at least the same amount of output. The sample is randomly drawn with replacement.

Appendix 2. Components of the Public Investment Management Index (PIMI)¹

The index captures quality and efficiency across four main stages of the cycle of public investment management: appraisal, selection, implementation, and evaluation. The processes and practices associated with the strongest score (4) in each stage are the following:

1. *Strategic Guidance and Project Appraisal*

- Nature of strategic guidance and availability of sector strategies.
- Transparency of appraisal standards.
- Observed conduct of ex ante appraisals.
- Independent review of appraisals conducted.

The maximum score requires a well-defined public investment plan and/or sector strategies for most sectors with full costing of recurrent expenditures and investment; a published document to detail appraisal standards; routinely undertaken economic appraisals for large projects; and independent checks by a regulator or office of appraisals.

2. *Project Selection and Budgeting*

- Existence of medium-term planning framework and its integration into the budget.
- Inclusion in budget (or similar) for donor-funded projects.
- Integration of recurrent and investment expenditures in budget.
- Nature of scrutiny and funding supplied by legislature, including its committees.
- Public access to key fiscal information.

The maximum score requires multiyear forecasts and the subsequent setting of annual budget ceilings; detailed information for a large share of donor-funded projects; consistently selected investments; coverage of fiscal policies and the medium-term fiscal framework by the legislature's review; and publicly available information on key fiscal aggregates, external audit reports, and contract awards.

¹See Dabla-Norris and others (2011) for more detailed information on methodology.

3. ***Project Implementation***

- Degree of open competition for award of contracts.
- Nature of any mechanism for complaints relating to procurement.
- Funding flows during budget execution.
- Existence and effectiveness of internal controls, such as commitment controls.
- Effectiveness of system of internal audit.

The maximum score requires accurate data on the method used to award public contracts; an operative process for submission and timely resolution of procurement process complaints; the execution of more than 90 percent of the capital budget; broad expenditure commitment controls; and internal audits (that meet international standards) for all entities.

4. ***Project Evaluation and Audit***

- Degree to which ex-post evaluations are conducted.
- Degree to which external audits are produced on a timely basis and scrutinized by the legislature.
- The maintenance of asset registers and/or asset values.

The maximum score requires ex-post evaluations routinely performed by the auditor general or the executive; audited expenditures (should comply with auditing standards), including capital investments; and a complete and operational asset register.

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