



UNITED ARAB EMIRATES

SELECTED ISSUES

August 2016

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July 5, 2016

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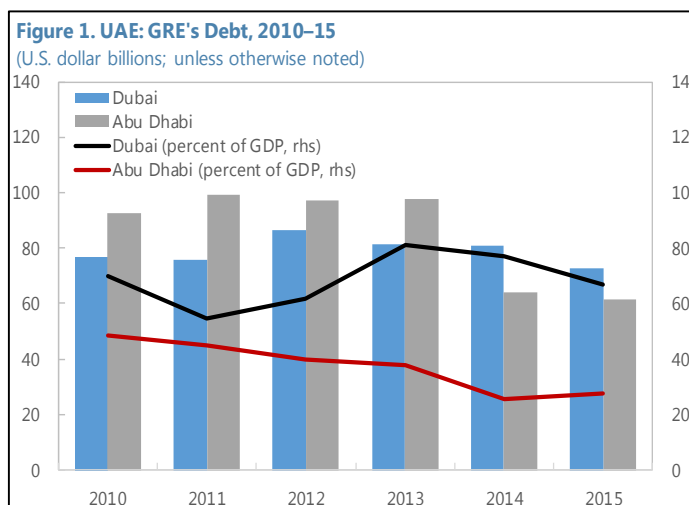
PERFORMANCE AND RISKS POSED BY GOVERNMENT RELATED ENTITIES IN THE UAE¹

Government-related entities (GREs) continue to be a major source for growth and development for the UAE, but they also pose significant fiscal and financial risks as GRE's debt remains high, though declining and actively managed. Across a sample of 53 companies with government ownership and publicly available information, panel regression estimates suggest that leverage depends mainly on firm characteristics but also on macroeconomic variables like government gross debt to GDP and global financial conditions which makes GREs vulnerable to external shocks in the current uncertain environment. To mitigate GREs risks, the authorities should build on recent progress and develop an integrated approach, including implementing prudent fiscal policies, enhancing macro and micro-prudential frameworks, controlling GREs borrowing and integrating them to the public debt management framework, and further strengthening corporate governance and transparency.²

A. Introduction

1. GREs represent a large share of the UAE economy and played an important role in its economic diversification. In 2015, the assets of our sample of companies with government ownership and publicly available information reached about 132.5 percent of UAE's GDP (108.7 percent of GDP in 2010), but this does not include many GREs for which data are not publicly available. The breakdown in our sample shows that GREs are present in a large number of sectors, including financial services, real estate, utilities, transportation, tourism, and health and education, among others (Table 1).

2. GREs have strengthened their overall finances over the last years. GREs have been a major source of growth and development for the UAE economy. Benefiting from government transfers and extensive borrowing, in 2004–2008, GREs funded a major push for Dubai's economy while major infrastructure projects were also developed in Abu Dhabi by GREs. Despite government support, in 2008–09 the global financial crisis and the price correction in the local property market, combined with the maturity mismatch



¹ Prepared by Pilar Garcia Martinez and Juan Carlos Flores.

² This paper used different sources of data with different companies since comprehensive consistent data are not available.

between short-term liabilities and long-term cash flows forced several GREs to restructure their debt. Since the crisis episode, several GREs have actively managed their debt, making early repayments and lengthening their maturity profiles. According to our estimates, GREs' debt, in percentage of GDP, has decreased, especially in Abu Dhabi, over the past six years (Figure 1). In 2015, Dubai GREs' debt slightly decreased to 69.6 percent of Dubai GDP from 69.9 percent in 2010 (and declined substantially over the past two years), while in Abu Dhabi, in 2015, GREs' debt declined to 27.4 percent of Abu Dhabi's GDP compared to 48.7 percent in 2010.

Table 1. UAE Companies with Government Ownership and Publicly Available Information: Selected Indicators

Name	Sector	Government Ownership	Total Assets (USD millions)		Total Liabilities (USD millions)		ROA		ROE		Debt to Capital	
			2010q4	2015q4 ¹	2010q4	2015q4 ¹	2010q4	2015q4 ¹	2010q4	2015q4 ¹	2010q4	2015q4 ¹
Abu Dhabi ²		51.1	310,908	457,865	240,485	355,254	1.8	2.4	7.2	10.4	51.0	51.3
Abu Dhabi Ship Building Co PJSC	Aerospace & Defense	15.7	667	372	530	269	3.8	5.8	21.1	5.7	19.7	8.3
Abu Dhabi Aviation Co	Air Freight & Logistics	100.0	864	1,272	407	560	7.9	6.0	17.4	11.6	30.1	30.0
Ras Al Khaimah Ceramics	Building Products	0.3	1,620	1,629	1,019	829	4.8	4.7	13.0	10.1	50.0	40.5
Gulf Cement Co PSC	Construction Materials	45.0	434	393	34	62	4.5	4.8	5.0	5.9	2.2	7.9
Union Cement Co	Construction Materials	54.3	381	373	23	31	-2.3	6.9	-2.5	7.6	0.6	
Fujairah Building Industries PSC	Construction Materials	77.4	124	113	60	51	3.4	1.5	6.4	2.8	40.1	33.1
Al Khaleej Investment PJSC	Distributors	8.2	92	103	12	18		7.4		8.8		
National Bank of Abu Dhabi PJSC	Diversified Banks	98.4	57,563	110,699	50,998	98,931	1.8	1.3	17.7	14.3	66.8	70.1
Abu Dhabi Commercial Bank PJSC	Diversified Banks	83.9	48,536	62,152	43,207	54,329	0.2	2.3	1.5	20.3	64.0	58.7
First Gulf Bank PJSC	Diversified Banks	1.1	38,322	61,943	31,616	52,058	2.6	2.7	16.8	19.2	35.0	52.9
Abu Dhabi Islamic Bank PJSC	Diversified Banks	15.9	20,489	32,232	18,281	28,127	1.5	1.7	16.1	14.2	43.8	24.7
Union National Bank PJSC	Diversified Banks	93.1	22,265	27,742	19,017	22,869	1.7	1.9	11.1	11.7	33.1	27.6
National Bank of Ras Al-Khaimah PSC/The	Diversified Banks	88.3	5,821	11,042	4,809	8,940	5.2	3.7	30.8	18.9	2.6	33.7
National Bank of Fujairah PJSC	Diversified Banks	65.0	3,517	8,177	3,014	7,012	1.4	2.0	9.7	16.4	42.3	38.1
National Bank of Umm Al-Qaiwain PSC	Diversified Banks	44.0	3,603	3,644	2,733	2,556	2.6	4.1	11.3	13.9	17.7	4.1
Tourism Development & Investment Company	Diversified Real Estate Activi		10,697	11,779	4,660	5,211	-2.9	-3.1	-6.9	-10.9	43.6	44.2
Aldar Properties PJSC	Diversified Real Estate Activi	5.4	12,890	9,840	11,734	4,316	-22.3	6.9	-120.3	13.6	88.5	22.7
Emirates Driving Co	Education Services	78.6	99	156	14	23	19.5	18.2	23.2	22.2		
Agthia Group PJSC	Food and Beverage		363	645	91	212	8.7	9.7	11.8	15.0	25.1	32.9
Abu Dhabi National Hotels	Hotels, Resorts & Cruise Lines	72.2	2,562	2,657	347	349	3.3	2.5	3.7	2.9	5.7	9.8
National Marine Dredging Co	Marine Ports & Services	54.1	897	1,370	245	452	15.5	3.8	20.9	5.5		7.8
Abu Dhabi National Insurance Co PSC	Multi-line Insurance	53.7	979	1,526	421	1,188	4.0	-6.0	7.0	-23.3	1.8	
Al Ain Ahlia Insurance Co	Multi-line Insurance	55.6	466	551	191	247	3.4	1.1	5.9	1.8		
Emirates Insurance Co	Multi-line Insurance	30.0	426	542	211	268	6.9	4.4	13.6	8.5		
Al Fujairah National Insurance Co PSC	Multi-line Insurance	84.6	92	114	67	56	2.1	3.4	7.6	6.7	26.5	5.5
Abu Dhabi National Energy Co PJSC	Multi-Utilities	71.7	31,598	30,461	27,449	28,337	1.0	-3.6	8.7	-64.9	83.5	90.6
Agthia Group PJSC	Packaged Foods & Meats	2.2	364	647	96	226	9.2	10.1	12.3	15.8	13.1	22.9
Ras Al Khaimah Poultry and Feeding Co	Packaged Foods & Meats	9.1	118	140	18	19	0.8	4.6	1.0	5.3		1.5
Gulf Pharmaceutical Industries	Pharmaceuticals	22.6	559	954	155	338	8.0	7.0	10.8	10.9	20.6	28.1
Emirates Telecommunications Group Co PJSC	Telecommunication Services	99.4	20,585	34,924	8,996	18,757	10.4	6.4	20.3	19.3	13.5	27.1
Emirates Telecommunications Group Company PJSC	Telecommunication Services		20,518	34,807	8,127	16,088	10.1	6.4	19.7	19.0	39.6	46.2
Emirates Integrated Telecommunications Company PJSC	Telecommunication Services		3,397	4,868	1,904	2,524	10.5	10.8	25.7	24.8	56.0	51.8
Dubai		27.3	198,282	285,929	152,947	214,193	2.3	2.8	9.5	15.4	53.1	47.3
Aramex PJSC	Air Freight & Logistics	3.2	623	938	131	339	9.4	9.4	12.1	14.4	1.1	13.7
Emirates Airline	Airlines		16,686	30,220	10,488	20,701	11.0	4.1	33.9	16.3	62.9	68.5
Air Arabia PJSC	Airlines	2.4	1,734	3,104	270	1,743	4.9	4.7	5.6	10.2	4.1	41.2
Dubai Investments PJSC	Asset Management & Custody Ban	48.6	3,848	4,079	1,346	1,116	5.8	7.5	9.8	10.9	25.4	20.0
National Central Cooling Co PJSC	Building Products	1.9	2,231	2,242	1,800	1,091	1.7	4.2	9.4	7.7	76.3	43.7
Arabtec Holding PJSC	Construction & Engineering	70.3	2,363	3,593	1,519	2,607	3.5	-15.2	12.1	-42.7	19.2	32.0
Drake & Scull International PJSC	Construction & Engineering	1.0	1,326	2,166	634	1,589	3.3	0.8	6.3	-32.2	23.7	52.5
Dubai Holding Commercial Operations Group LLC	Diversified		28,739	23,199	24,268	16,963	0.2	3.9	1.7	18.7	84.4	73.1
Emirates NBD PJSC	Diversified Banks	90.8	77,924	110,698	68,736	96,880	0.8	1.9	7.4	16.6	54.5	51.6
Dubai Islamic Bank PJSC	Diversified Banks	70.5	24,472	40,814	21,675	34,608	0.6	2.6	6.0	25.5	54.6	31.2
Commercial Bank of Dubai PSC	Diversified Banks	31.5	10,485	15,755	8,884	13,515	2.2	2.0	14.6	13.3	23.2	44.5
Ajman Bank PJSC	Diversified Banks	53.6		3,899		3,564		1.0		10.5		59.6
Dubai Financial Market PJSC	Financials		2,148	2,316	98	133	1.0	3.1	1.1	3.3	4.6	5.7
Mediclin International PLC	Health Care Facilities	1.0										
NMC Health PLC	Health Care Facilities	1.6										
Action Hotels Plc	Hotels, Resorts & Cruise Lines	4.1										
Emirates Integrated Telecommunications Co PJSC	Integrated Telecommunication S	50.0	3,409	4,885	2,021	2,756	11.9	10.8	33.2	24.8	44.3	36.5
Dubai Parks & Resorts PJSC	Leisure Facilities	0.4		2,349		667						16.9
Dubai Parks and Resorts PJSC	Leisure Facilities			2,341		661	0.0	-1.3		-1.8		28.2
DP World Limited	Marine Ports & Services		5,254	5,498	2,572	2,619	1.9	4.4	4.9	10.1	48.9	47.6
Gulf Marine Services PLC	Oil & Gas Equipment & Services	9.0										
Dragon Oil PLC	Oil & Gas Exploration & Produc	0.2										
Emaar Properties PJSC	Real Estate Development	76.6	17,017	21,128	8,496	10,155	3.9	5.0	8.2	9.9	26.3	24.7
Emaar Malls Group PJSC	Real Estate Operating Companie	0.2		6,687		2,482		7.0		11.3		32.1
Emirates Refreshments Co	Soft Drinks	29.2	25	18	10	5	-11.3	6.3	-18.5	9.1	23.7	

Sources: Bloomberg; Zawyia; and IMF staff calculations.

¹ 2015q4 or latest.

² Includes companies listed in the Abu Dhabi Securities Exchange.

3. Looking forward, GREs' appear better positioned to weather shocks but potential risks to the sovereign balance sheet and the financial system need to be monitored.

Improvements in the GREs' debt profile have lowered rollover risks. However, GREs could be particularly affected by lower transfers from governments, increased sovereign issuance to finance deficits and tighter global financial conditions. These could lead to GREs re-leveraging and higher financing costs. The objective of this paper is to identify potential risks posed by GREs.

B. Performance of Companies with Government Ownership

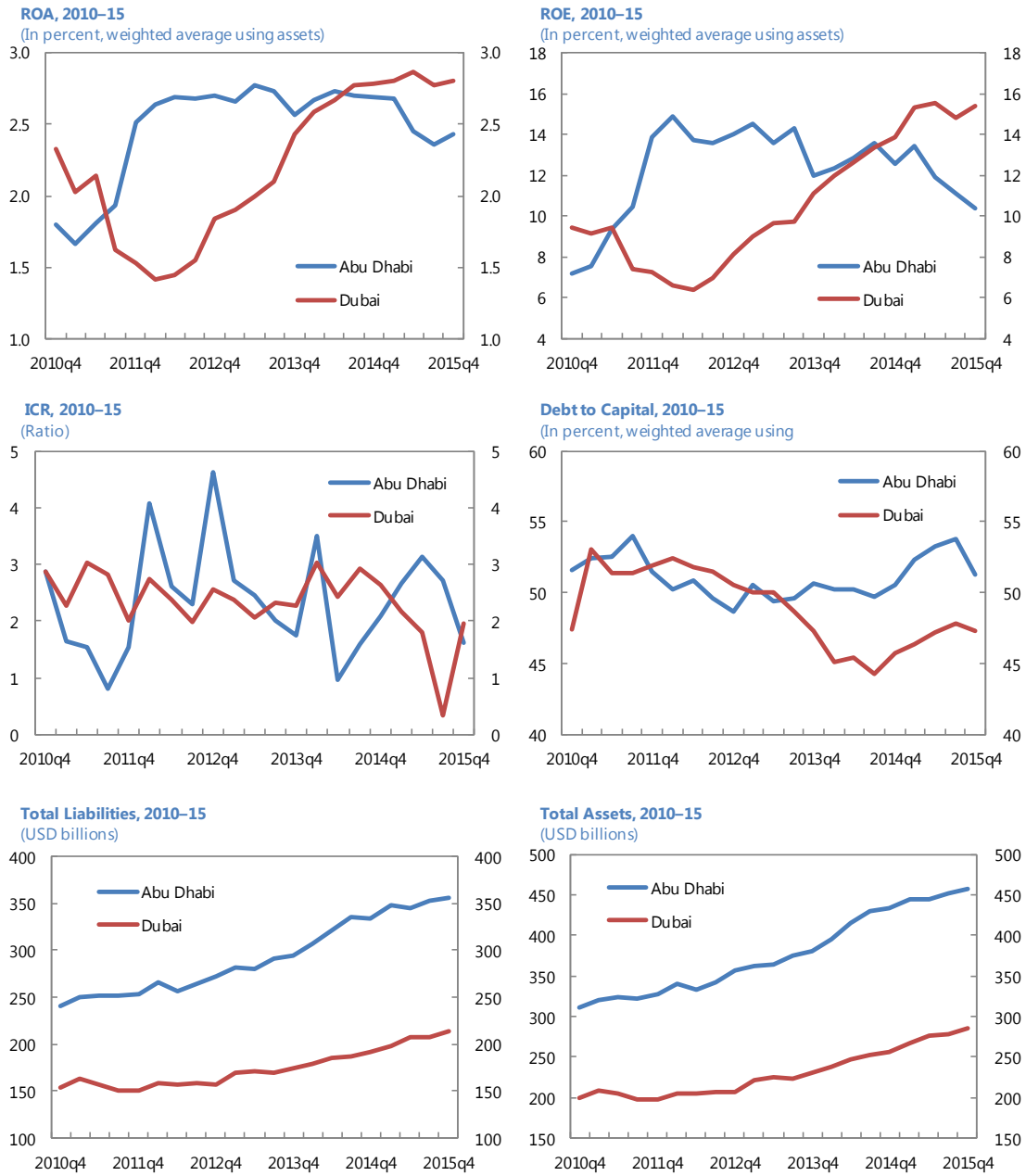
4. Overall, performance have improved for companies in our sample over the last years. While total liabilities have increased at a slower pace than assets, profitability has increased on average in our sample (Table 2 and Figure 2). Compared regionally, UAE's corporate sector have generated relatively low returns on assets – about 8.1 percent on average in 2007-2014- only higher than in Kuwait. Average returns in UAE's non-financial corporates are lower than returns in emerging markets, but above returns showed in developed markets in Asia and Europe. The return on assets observed in our sample of companies with government ownership are below the UAE's average, though lack of comprehensive data on GREs prevents generalizable conclusions.

Table 2. Non-Financial Corporate Sector: Return on Assets

	2007	2008	2009	2010	2011	2012	2013	2014	Average 2007–2014
GCC									
Bahrain	17.0	15.1	7.3	8.0	13.4	8.8	7.7	8.3	10.7
Kuwait	12.2	5.6	4.9	12.6	8.6	7.0	6.8	5.7	7.9
Oman	18.3	14.3	14.5	12.5	11.1	12.3	12.2	11.5	13.3
Qatar	19.3	18.4	11.7	13.3	14.5	13.8	13.9	11.3	14.5
Saudi Arabia	14.7	7.6	6.9	8.4	9.9	10.2	10.1	9.1	9.6
UAE	7.6	10.8	8.0	7.3	6.6	8.0	7.5	8.7	8.1
GRE's				2.6	2.3	2.4	2.6	2.7	2.5
Developed Markets									
Americas	8.2	7.8	7.8	9.2	9.1	8.5	8.5	8.3	8.4
Asia	7.8	6.5	4.8	6.1	6.1	5.7	5.9	6.2	6.1
Europe	10.0	7.5	6.4	8.2	7.8	7.4	7.6	8.1	7.9
Emerging Markets									
Americas	11.5	10.6	9.0	10.2	10.3	9.0	6.9	7.8	9.4
Asia	13.0	9.9	9.3	9.8	9.9	9.7	9.2	9.2	10.0
Europe	13.7	10.6	8.7	10.2	11.3	10.0	8.8	6.6	10.0
Global	9.3	8.0	7.1	8.5	8.5	8.0	7.9	8.0	8.2

Source: IMF Corporate Vulnerability Utility (CVU).

Figure 2. UAE Companies with Government Ownership and Publicly Available Information: Selected Indicators



Sources: Bloomberg; and IMF staff calculations.

5. Despite improvements, leverage remains high while its composition has shifted from loans to bonds. Non-financial corporates are highly leveraged in the UAE (see Table 3). GREs' debt, in percentage of GDP has decreased in both Abu Dhabi and Dubai, over the past six years. Total public debt (including GREs' debt) in Dubai remained relatively high at 126.2 percent of Dubai's GDP in 2015, with large maturities due by 2018. According to staff's estimates, Dubai GREs debt amounted to 66.6 percent of Dubai GDP in 2015. In 2015, in Abu Dhabi GRE debt reached 27.4 percent of Abu Dhabi GDP. Although loans are still the largest component of overall GRE debt, the share of bonds has been growing rapidly from 39 percent in 2010 to 46 percent in 2015 (Figure 3). This increase has been particularly significant in Abu Dhabi, where bonds increased from 32 percent of total Abu Dhabi GREs' debt in 2010 to 67 percent in 2015. Debt restructuring and new regulations on loan-concentration limits are some of the factors behind this evolution.

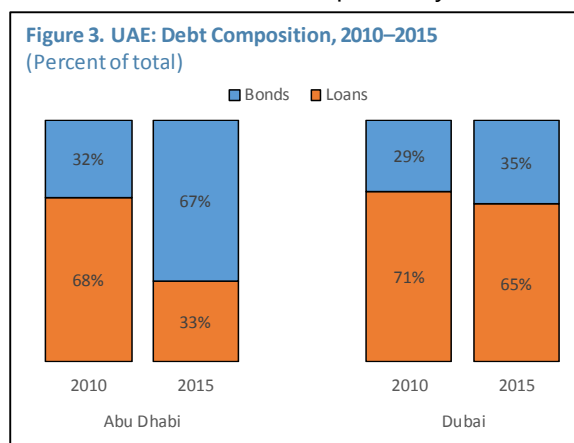


Table 3. Non-Financial Corporate Sector: Debt to Equity

	2007	2008	2009	2010	2011	2012	2013	2014	Average 2007–2014
GCC									
Bahrain	8.7	22.4	18.8	37.5	19.9	13.5	17.1	15.6	19.2
Kuwait	51.3	62.2	65.7	72.5	69.1	68.4	47.2	47.6	60.5
Oman	97.1	130.9	298.9	85.8	265.1	126.1	118.7	96.3	152.4
Qatar	44.1	59.4	80.5	80.1	131.2	115.8	61.3	64.9	79.7
Saudi Arabia	38.5	54.3	56.7	57.3	87.2	56.9	56.8	57.6	58.2
UAE	28.6	77.7	138.8	139.1	80.1	80.9	95.7	88.8	91.2
Developed Markets									
Americas	110.8	131.2	130.9	128.5	118.2	114.8	106.3	127.1	121.0
Asia	87.9	89.2	105.3	83.7	89.0	86.6	80.6	69.4	86.5
Europe	94.2	128.5	148.1	121.1	111.1	138.8	106.2	88.2	117.0
Emerging Markets									
Americas	59.7	123.2	140.2	93.3	91.4	121.1	114.8	106.4	106.2
Asia	114.2	120.8	124.8	147.0	123.2	134.7	110.9	130.8	125.8
Europe	76.3	102.5	89.2	127.2	143.3	211.0	149.9	208.9	138.5
Global	98.1	111.7	120.7	115.0	109.2	120.2	100.2	103.8	109.9

Source: IMF Corporate Vulnerability Utility (CVU).

6. As a result, GREs' bond debt has become one of the highest in the GCC, though still lower than in many developed countries. Available data on GRE's outstanding bond debt suggest that it is higher than in most GCC countries and emerging economies, though much lower than in

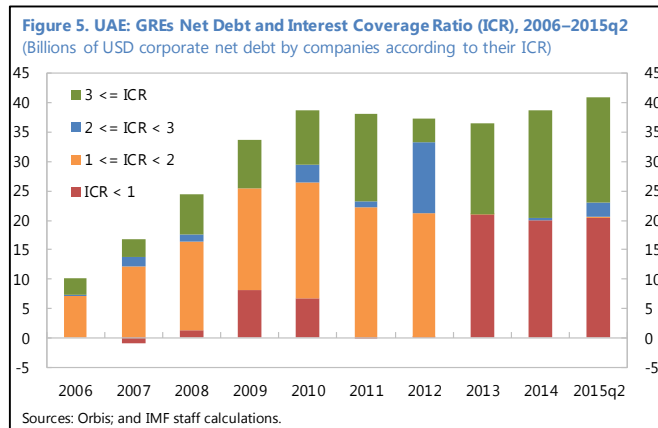
many developed European countries, US and Canada (Figure 4). When adding government debt, total UAE outstanding bond debt continues being better than in most advanced and emerging countries. Unfortunately, comparable data on loans were not available. However, the UAE has large financial assets held by its sovereign wealth funds and therefore is among the top countries globally in terms of net financial assets.



7. Across emirates and sectors, corporates in our sample offered a very diverse performance. Profitability has on average increased on both Abu Dhabi and Dubai, among the companies in our sample. However, the ratio of debt to capital has increased slightly in Abu Dhabi and lowered in Dubai. Available data in our sample show very volatile performance for most of the companies. While banks show a more stable and robust performance, overall real estate and construction companies seems to have improved over time in Abu Dhabi since 2010, but not in Dubai.

C. Main Risks Posed by GREs

8. The GRE debt servicing capacity is relatively low. Publicly available data suggest a very diverse and on average worse interest coverage ratio (ICR) for GREs (about 2 in 2014). This is much lower than the average ICR of the overall corporate sector in UAE, which was 10.9 in 2014, the second lowest in the GCC region after Kuwait (Table 4). Data in our sample show that “debt-at-risk” (defined as debt with ICR of less than 1.5 times) has increased in our sample to about U.S.\$20.4 billion (Figure 5). High leverage and low returns on assets (below 5 percent) seem to be the reasons underlining this reduced servicing capacity in some of the GREs in our sample. Since mid-2015, the economic outlook has moderated, transfers to GREs have been



scaled back and costs of funding have increased, and these factors might lead to a further weakening of the debt servicing capacity

Table 4. Non-Financial Corporate Sector: Interest Coverage Ratio, ICR

	2007	2008	2009	2010	2011	2012	2013	2014	Average 2007–2014
GCC									
Bahrain	30.1	20.8	55.0	232.8	137.9	44.6	15.3	22.1	69.8
Kuwait 1/	--	--	3.5	3.4	4.3	4.6	5.4	5.3	4.4
Oman	59.0	49.3	44.0	95.5	50.8	71.9	52.3	34.5	57.2
Qatar	46.2	29.4	26.1	23.6	33.2	24.2	66.8	40.6	36.2
Saudi Arabia	36.3	19.5	18.5	35.9	17.3	19.5	32.8	31.5	26.4
UAE	19.6	28.8	14.6	18.0	9.6	17.5	18.9	10.9	17.2
Developed Markets									
Americas	28.8	24.2	31.5	27.6	29.9	28.8	41.0	29.9	30.2
Asia	57.1	46.4	50.6	52.1	56.6	64.1	69.4	78.0	59.3
Europe	22.8	16.5	16.6	23.2	25.1	31.3	27.6	30.6	24.2
Emerging Markets									
Americas	15.9	41.1	12.0	16.9	19.8	21.7	18.0	13.6	19.9
Asia	57.4	35.1	37.1	49.2	50.5	52.6	59.8	50.6	49.0
Europe	29.5	27.0	33.5	39.2	46.6	51.1	28.0	18.9	34.2
Global	33.8	27.8	30.9	33.5	36.4	38.8	43.8	39.7	35.6

ICR = earnings before interest and taxes (EBIT) to interest payments falling due.

9. With about US\$80.5 billion maturing in 2016-18, both Dubai, to a larger extent, but also Abu Dhabi face short-term rollover risks. Our estimates suggest that US\$51.6 billion of Dubai's debt will come due in 2016-18 (see Table 5), especially in 2018 with an estimated US\$27.4 billion due. Over US\$28.9 billion of Abu Dhabi's debt will also come due in 2016-18 (Table 6). These are large maturities in a context of tightening domestic liquidity, competition from other governments in the region to finance deficits, and possible reversal of capital inflows. Short-term rollovers risk may also translate into higher cost of funding, which ultimately could put further strains on debt servicing capacity and ultimately on the fiscal accounts and, to a lesser extent, on the financial system. In addition, as most of the corporate debt is denominated in foreign currency (FX), rollover risks could be reflected in an increase in the forward exchange rate premium.

10. GREs pose contingent fiscal risks and an adverse scenario could worsen the government balance sheet. As public transfers have been made to support specific companies (financial and non-financial), the market perceives that governments implicitly guarantee GREs' debt. An adverse scenario could worsen the government balance sheet, be transmitted to the financial

sector and contribute to feedback loops³. A scenario that combines a global downturn with a real estate shock under which the government would take over 20 percent of the GREs' debt would imply a substantial increase in the government debt-to-GDP ratio, to 32.1 percent, twice as large as under the baseline scenario (14.1 percent of GDP in 2016)⁴. In the case of Dubai, the debt ratio could triple to 59.6 percent of GDP if there would be a severe shock to the real estate sector compounded with a global downturn. However, these risks can be mitigated by the large fiscal buffers. Regarding financial risks, loans to GREs have increased by 6 percent so far in 2016 and correspond to about 7.6 percent of the assets of the banking sector. Greater corporate leverage could render firms less able to withstand negative shocks to income or asset values and quickly spill over to the financial sector, generating a vicious cycle as banks curtail lending.

³ For details on the underline assumptions on the severe shock scenario see Appendix II on Debt Sustainability Analysis of the 2016 Staff Report of the Article IV Consultation with UAE.

⁴ For most non-listed GREs annual reports are not published, including audited balance sheets and income statements. Information on off-balance sheet liabilities is often unavailable and so are data about overall activity, employment and investment

Table 5. Dubai: Maturing Bonds and Syndicated Loans 1/ 2/
(In millions U.S. dollars)

Debt Type	2016	2017	2018	2019	2020	2021	2016-21	Beyond	Unallocated	Total
Government of Dubai 3/										
Bonds	331	600	20,000	0	750	500	22,181	3,869		26,050
Loans	223	599	40	40	40	294	1,236	120		1,356
Total	554	1,199	20,040	40	790	794	23,417	3,989		27,406
Dubai, other sovereign 4/										
Loans domestic									32,879	32,879
Total									32,879	32,879
Investment Corporation of Dubai and subsidiaries 5/										
Bonds	2,861	2,138	1,069	1,562	1,301	166	9,096	2,897	1,500	13,493
Loans	886	150	4,330	47	272	0	5,686	3,103	425	9,214
Total	3,747	2,288	5,399	1,609	1,573	166	14,782	6,000	1,925	22,707
Dubai World and subsidiaries										
Bonds	0	1,500	0	650	500	0	2,650	3,108		5,758
Loans	0	1,198	459	0	1,357	1,100	4,114	11,722		15,836
Total	0	2,698	459	650	1,857	1,100	6,764	14,830		21,594
Nakheel										
Bonds	1,195	0	0	0	0	0	1,195	0		1,195
Loans	0	0	0	0	0	0	0	0		0
Total	1,195	0	0	0	0	0	1,195	0		1,195
Dubai Holding and subsidiaries										
Bonds	0	696	0	0	500	0	1,196	0		1,196
Loans	6,555	2,150	0	1,400	0	0	10,105	5,089	120	15,314
Total	6,555	2,846	0	1,400	500	0	11,301	5,089	120	16,510
Other Dubai Inc. 6/										
Bonds	500	0	1,000	0	1,500	0	3,000	700		3,700
Loans	0	0	0	728	0	126	854	1,537	450	2,840
Total	500	0	1,000	728	1,500	126	3,854	2,237	450	6,540
Total Dubai Inc.	11,997	7,832	6,858	4,387	5,430	1,392	37,895	28,156	2,495	68,546
Total Dubai Debt	12,551	9,031	26,898	4,427	6,220	2,186	61,312	32,145	35,374	128,831
Dubai Inc. (less than 50% government ownership) 7/										
Bonds	500	1,100	500	500	1,150	0	3,750	962	2,000	6,712
Loans	450	0	23	231	3	1,250	1,956	0		1,956
Total	950	1,100	523	731	1,153	1,250	5,706	962	2,000	8,668
Total, including GREs with minority ownership of which: in local currency	13,501	10,131	27,420	5,158	7,372	3,436	67,018	33,107	37,374	137,499
	14	1,199	2,354	128	7	0	3,701	2,273		5,975
In percent of Dubai 2015 GDP	12.4	9.3	25.2	4.7	6.8	3.2	61.5	30.4	34.3	126.2
Memorandum items:										
Restructured debt of Dubai Inc.	7,195	4,148	0	0	0		11,343	13,000		24,343
Government guaranteed 8/	356	433	522	357	305	265	2,238	2,328		4,566
Total Government of Dubai including guarantees	910	1,632	20,562	397	1,095	1,059	25,655	6,317		31,972
Of total debt: bonds and loans by banks	2,397	2,388	832	1,419	0		7,036	4,667		11,704

Sources: Dealogic; Zawya; Bloomberg; Dubai authorities; and IMF staff estimates.

1/ Excluding bilateral bank loans and accounts payable, except for the sovereign.

2/ Regardless of residency of debt holders.

3/ Includes syndicated and bilateral loans.

4/ Emirates National Bank of Dubai related party lending.

5/ Does not include financial leases.

6/ Includes DEWA, DIFC, DAE, Borse Dubai, and others.

7/ Dubai GREs with government ownership below 50% (Emaar, DIB, CBD). It includes public banks' loans to GREs without netting assets and liabilities.

8/ RTA, Dubai World, and Dubai Airport.

Table 6. Abu Dhabi: Maturing Bonds and Syndicated Loans

Debt Type	2016	2017	2018	2019	2020	2021	2016–21	Beyond	Total
Government of Abu Dhabi									
Bonds	0	0	0	1,495	0	0	1,495	0	1,495
Loans	335	320	320	312	303	63	1,653	188	1,842
Guarantees	181	181	164	164	164	14	869	14	883
Total	516	502	484	1,971	467	77	4,017	202	4,220
Abu Dhabi Water & Electricity Authority									
Bonds	0	0	0	0	0	0	0	0	0
Loans	535	523	358	176	103	46	1,741	0	1,741
Total	535	523	358	176	103	46	1,741	0	1,741
TAQA									
Bonds	997	1,246	1,246	499	0	748	4,735	3,318	8,052
Loans	67	563	73	269	78	82	1,131	449	1,580
Total	1,064	1,809	1,319	767	78	829	5,866	3,767	9,633
Etihad Airways									
Bonds	0	0	0	0	0	0	0	0	0
Loans	2,093	707	886	722	596	529	5,532	1,593	7,125
Total	2,093	707	886	722	596	529	5,532	1,593	7,125
Etihad Rail									
Bonds	0	0	0	0	0	0	0	0	0
Loans	320	639	253	0	0	0	1,212	0	1,212
Total	320	639	253	0	0	0	1,212	0	1,212
International Petroleum Investment Company									
Bonds	1,507	1,495	964	0	1,495	1,507	6,969	7,609	14,578
Loans	798	0	560	0	0	0	1,357	0	1,357
Total	2,305	1,495	1,524	0	1,495	1,507	8,326	7,609	15,935
Mubadala Development Company 1/									
Bonds	748	0	89	499	0	748	2,083	870	2,953
Loans	24	26	66	290	366	37	809	160	969
Total	772	26	155	789	366	784	2,892	1,030	3,922
Tourism and Development Investment Company									
Bonds	0	0	0	0	0	0	0	997	997
Loans	299	0	1,907	0	0	0	2,206	0	2,206
Total	299	0	1,907	0	0	0	2,206	997	3,204
Other Abu Dhabi Inc. 2/									
Bonds	0	0	0	0	0	0	0	0	0
Loans	137	17	99	0	149	0	403	0	403
Total	137	17	99	0	149	0	403	0	403
Total Abu Dhabi Inc.									
	7,524	5,215	6,502	2,454	2,786	3,696	28,178	14,997	43,175
Total Abu Dhabi debt									
	8,040	5,717	6,986	4,425	3,254	3,773	32,195	15,199	47,395
ADCB, NBAD, UNB, and Al Hilal									
Bonds	1,195	1,911	2,102	2,645	1,884	0	9,736	2,146	11,882
Loans	150	748	199	0	0	0	1,097	0	1,097
Total	1,344	2,659	2,301	2,645	1,884	0	10,833	2,146	12,979
Total Abu Dhabi debt, including banks									
	9,385	8,376	9,287	7,070	5,138	3,773	43,028	17,345	60,374
Abu Dhabi Inc. (less than 50% government ownership) 3/									
Bonds	1,529	1,150	0	825	21		3,525	1,219	4,744
Loans	0	340	750	0	0		1,090	70	1,161
Total	1,529	1,490	750	825	21		4,615	1,289	5,905
Total, including GREs with minority ownership									
	10,914	9,866	10,037	7,894	5,158		43,870	18,635	66,278
In percent of Abu Dhabi 2015 GDP									
	5.2	4.7	4.8	3.7	2.4		21	8.8	29.6
Memorandum items:									
Of total debt: bonds and loans by banks	1,344	2,659	2,301	2,645	1,884		10,833	2,146	12,979

Sources: Dealogic; Zawya; Bloomberg; Abu Dhabi authorities; and Fund staff estimates.

1/ Includes Dolphin, EMAL.

2/ Includes ADPC, GHC, ADNEC.

3/ Below 50 percent government-owned entities; includes Aldar, FGB, NCCC, Sorouh, ADIB.

D. The Evolution of GREs Leverage and Macroeconomic Conditions

11. The evolution of GREs leverage is expected to be closely associated not only with firm-specific factors, but also with macroeconomic and financial conditions. Chapter 3 of the 2015 Global Financial Stability Report (GFSR) showed that macroeconomic conditions, including public debt and interest rates, are positively correlated with leverage growth. This positive relationship implies that accommodative macroeconomic conditions can encourage increased leverage. This implies that corporates are rendered more vulnerable to cyclical macroeconomic and financial conditions and external shocks. However, given that this has not been the case for all GREs, precisely identifying the role of individual macroeconomic and financial conditions is essential to monitor risks. Cross-section weights are used to correct for heteroscedasticity.

12. Panel regression analysis is used to estimate the link between GRE-level leverage growth with key firm and other macroeconomic and financial variables. For GRE i , at time t a general specification can be written as follows:

$$DLeverage_{i,t} = b_1GRE_{i,t-1} + b_2MACRO_t + OTHER$$

In which the dependent variable, $DLeverage$ defined as the change in the ratio of assets over equity. The term GRE includes measures of size (sales), profitability (return on assets), ICR, asset tangibility (to reflect collateral availability and asset quality), ICR. The $MACRO$ factors include government gross debt to GDP, oil price, the inverse of the US shadow rate, an exchange market volatility index (VIX), and corporate spreads. $OTHER$ includes the error terms.

13. The results suggest that the relative contributions of firm specific characteristics, macroeconomic conditions and global financial factors in explaining leverage are mixed. The 2015 GFSR pointed out that global financial factors appear to have become relatively more important determinants of leverage in the post-crisis period as relative contributions of firms and spreads seem to have diminished in recent years. For UAE, the panel regression analysis shows that individual firm factors, especially profitability and the ratio of interest coverage continues to play an important role in determining the change in leverage. The fiscal position of the government proxy by gross government debt to GDP has also a significant impact as well as the domestic interest rate. Global oil prices are also significant and positively correlated with leverage. The results are robust to different specifications.

14. Most of the coefficient signs related to firm characteristics are in line with the literature. The literature offers different explanations on factors affecting corporate leverage⁵. The 2015 GFSR associates positive signs to the firm level characteristics (sales, profitability and tangibility), although for sales estimates that the sign can be positive or negative. According to the influential pecking order theory of capital structure which suggests that firms prefer internal to

⁵ De Jong, A. et al. 2008, Gungoraydinoglu, A. and Oztekin, O, 2011, Kayo, E. and Kimura, H, 2011.

external finance and when outside funds are necessary, firms prefer debt to equity because of lower information costs associated with debt issues, sales and profitability are expected to have an inverse influence on leverage.⁶ The ratio of fixed assets to total assets (tangibility) is expected to have a positive relation with leverage, as more tangible assets can be used as collateral. A lag of the dependent variable is included to account for persistency.

15. The evidence shows some signs of elevated GREs exposure to a potential worsening of the domestic and global macroeconomic and financial conditions. In particular, the (inverse) of the UAE interest rate, government debt, global oil prices and the volatility in global financial market proxy by the VIX index seems to be particularly associated with leverage growth⁷. Leverage seems to be correlated with oil price increases. However, the impact of external shocks like oil prices could be partially offset by the use of countercyclical fiscal policy which may dilute the full impact of variables like oil prices.

Variables	Coefficient	Std. Error	t-statistic	Prob.
Dleverage(-1)	-0.140151	0.029935	-4.681902	0.0000
DSales to assets	-17.15491	32.90045	-0.521419	0.6027
DROA	0.916192	0.232914	3.933605	0.0001
ICR	0.079965	0.026345	3.035313	0.0028
Tangibility	-0.253152	0.105404	-2.401727	0.0174
Inverse of UAE interest rate	0.747749	0.138636	5.393603	0.0000
Government gross debt to GDP	6.449062	1.365582	4.722574	0.0000
Corporate spread	-7.063861	2.615721	-2.700541	0.0076
VIX	1.091021	0.401936	2.714418	0.0073
Oil price	0.566195	0.242344	2.336327	0.0206
Constant	-34.69657	16.78457	-2.067171	0.0402
Observations	187			
R-squared	0.184185			
F-statistic	3.97351			

⁶ Frank, M. Z. and Goyal, V. K, 2003

⁷ VIX represents the Chicago Board Options Exchange Market Volatility Index.

E. Policies to Manage Risks Posed by GREs

16. While the UAE's balance sheet as a whole is strong, potential fiscal and financial stability risks stemming from GREs need to be monitored. The size of UAE publicly-held government debt is rather small, while fiscal and external buffers are large. It is only when the debt of the GREs is accounted for that full scale of the risk faced by the sovereign balance sheet becomes visible, as well as its potential implications for the domestic banking sector and debt capital markets. Rollover risks have increased with tightening liquidity, fiscal financing needs and the lift-off of the US interest rate. In addition, worsening domestic and external conditions might lead to increased leverage of GREs and higher default probability, ultimately putting further strains on the financial system and the fiscal accounts.

17. Mitigating these risks would require an integrated approach. Prudent fiscal policies, while still promoting economic growth, together with stronger fiscal frameworks, including a strong consolidated multi-year budget framework, are essential elements to reduce and better manage fiscal risks. Strengthening fundamentals, improving the traction of liquidity management and monitoring corporate leverage buildup is also important to limit financial stability risks. Strengthening regulation, supervision, macro-prudential frameworks can help contain financial excesses, minimize foreign currency and commodity price risks, encourage safe credit creation and safeguard financial stability. These should include proper risk-weights for lending to GREs and continued enforcement of loan-concentration limits.

18. Proper management frameworks for GREs are crucial. Such frameworks entail assessing, monitoring, and reporting of contingent liabilities arising from the GREs, and transparent reflection of GRE contingent liabilities in government accounts. To this end, the debt management offices should have dedicated units collecting frequent data on GREs outstanding liabilities, their maturity profile, income and cash-flow statements, and assessing potential contingent liabilities to the sovereign. The authorities should also consider including a statement of this contingent risk as part of the annual budget documents, including discussion of past experiences, forward-looking estimates as well as a presentation of risk mitigation strategies. In addition, the authorities should push for more efficiency of GREs, including developing performance-based contracts with them, and could consider increasing private sector participation in their capital and management.

19. Containing GRE borrowing is a pre-condition for fiscal sustainability and financial stability at the emirate level and requires a strong institutional framework. In order to contain further risk-taking, the authorities should consider introducing a mechanism to manage GREs borrowing (including through setting limits on changes in GRE borrowings or overall liabilities). Any borrowing at the emirate level would then require the assent of the emirate finance department, which would provide a strong signal to financial markets about GREs debt sustainability.

20. Improved corporate governance and transparency are also key for mitigating risks posed by GREs. In particular, it would be important to delineate clearly between the commercial and noncommercial operations carried by GREs, clarify the government support strategy, and standardize the accounting, auditing, and financial reporting practices. Better information disclosure

would help attract investors and ultimately will translate into lower funding costs. Improvements in corporate governance and risk management will also help investors to assess GRE risks. Also, regulators, such as the central bank and the securities and commodities authority, should step up their supervision of business conduct by GREs that are under their oversight.

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FINANCIAL STABILITY OF THE BANKING SYSTEM AMID LOWER OIL PRICES AND HIGHER SHORT-TERM INTEREST RATES¹

A. Introduction

1. The UAE banking system has weathered well so far the recent period of lower oil prices. The UAE banking system remains well capitalized, liquid, profitable, with high asset quality. However, sustained lower oil prices and higher short-term interest rates pose challenges. Asset quality could deteriorate in tandem with lower economic activity if lower oil prices are offset by cuts in expenditures with a high fiscal multiplier. In addition, liquidity could come under further pressure if the government continues to withdraw its banking deposits to finance the deficit. Banks have reacted to lower government deposits by attracting nonresident deposits and increasing wholesale funding to sustain robust private sector credit growth without raising lending rates on average. However, these sources of wholesale funding are more costly² and this, together with lower asset quality,³ can affect the profitability and capital buffers of banks. If there are further reductions in government deposits and increases in US policy rates, banks will need to manage a combination of liquidity pressures, higher funding rates, and lower profitability

2. The paper aims at analyzing the financial stability implications of lower oil prices and higher short-term interest rates for the UAE. The paper focuses on the effects of lower oil prices and higher short-term interest rates on liquidity and solvency. To capture its different dimensions,⁴ liquidity is described by three indicators: the inverse of the loan-to-deposit ratio, the interbank loans-to-interbank deposits ratio, and the liquid assets-to-customer deposits and short-term debt ratio. Their determinants are analyzed with a view to assess the impact of lower oil prices, higher short-term interest rates, and other bank-specific characteristics. Solvency is proxied by probabilities of default under adverse macroeconomic scenarios. They are obtained with a forward intensity model, which is flexible enough to incorporate not only defaults but also exits of firms from mergers and acquisitions. Finally, the paper provides policy recommendations to mitigate the adverse effects of lower oil prices and higher short-term interest rates on the banking system.

¹ Prepared by Andre Santos.

² In September 2015, Abu Dhabi Commercial Bank did not proceed with a six-year bond at 155 basis points over mid-swaps as the deal did not attract enough orders.

³ For instance, the SME loan portfolio has seen deterioration in credit quality.

⁴ See Tirole (2011).

B. Banking Sector Developments

3. **The UAE banking system has attracted new deposits and tapped wholesale markets to mitigate the effect of lower deposit growth on funding and maintain robust loan growth.**

While credit to the private sector remained robust at 8.7 percent at end-2015 (Figure 1), total deposit growth—including nonresident deposits—was substantially weaker at one percent. In particular, the contribution of government deposits to total deposit growth has been negative since 2015:Q2. As a result, the gap between private sector credit and total deposit growth has been felt in the interbank market where the spread between the interbank offer rates EIBOR (UAE interbank rate) and Libor temporarily widened in October 2015 after a two-year period of low spreads. Given the implementation of the new liquidity standards,⁵ banks have not reduced their liquid assets to sustain private sector credit growth. Instead, banks have tapped wholesale funding and expanded their corporate and non-resident deposit base.

4. **Despite slowing non-oil growth amid lower oil prices, UAE domestic banks remain well capitalized and profitable, with high asset quality.**

Asset quality has substantially improved since the completion of major GRE debt restructurings during 2012-14. The average nonperforming loan ratio in the UAE domestic banks declined from 8 percent at end-2012 to 4.6 percent at-end 2015 (Figure 2), even though there has been a slight increase in nonperforming loans in the SME portfolio associated with the recent slowdown in non-oil growth. In addition, the higher-than-average nonperforming loan ratios were concentrated in a fewer than 40 percent of domestic banks at end-2015. Average profitability has improved since 2009 with a slight reversal in 2015 due to a higher cost of funding, including higher interest rate on deposits and more competitive rates on credit, while the percentage of banks with above-average return on assets was high at more than 60 percent at-end 2015. The average capital adequacy ratios in the UAE banks remain high at more than 18 percent at end-2015 well above the regulatory requirement of 12, even though they have been on a declining trend since 2009. In terms of distribution, more than 60 percent of banks hold capital at levels lower than the average but still higher than the 12 minimum capital requirement.

5. **Liquidity has been high but on a declining trend since 2007.**

The average liquid assets to customer deposits and short-term debt ratio in the UAE domestic banks has declined from 35 percent at end-2007 to about 20 percent at end-2015. More than 60 percent of domestic banks had lower liquid assets as a percentage of customer deposits and short-term debt than the average ratio at end-2015. The average loan-to-deposit ratio has been stable at around 100 percent since 2012 after declining for more than four years. About 60 percent of banks had granted loans that represented more than 100 percent of their deposits at end-2015. Consistent with decreasing liquid assets as a percentage of customer deposits and short-term debt, the average interbank placements-to-interbank deposits ratio has declined since 2012. More than 60 percent of the banks had interbank placements that represented less than 200 percent of interbank deposits at end-2015.

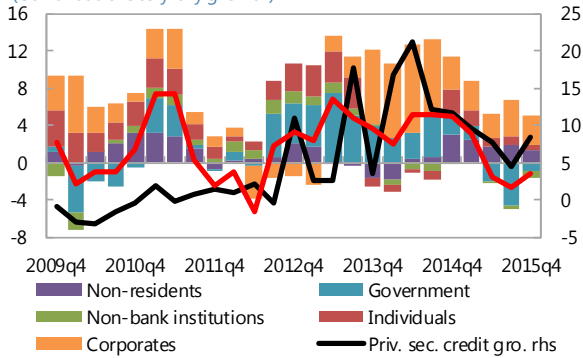
⁵ Central bank circular no. 33/2015 on controlling and monitoring liquidity at banks was enacted in June 2015.

6. The high level of liquidity is also a result of central bank regulations. The Loan-to-Stable Resources Ratio (LSRR) was introduced in 1986 to promote a stable funding ratio in which net loans, guarantees, and short-term (less than 3 months) interbank loans were required to be fully funded with customer deposits, medium- and long-term (more than 6 months) interbank loans, and capital and reserves. In addition, reserve requirements on demand, savings, and call accounts were raised to 14 percent in 1999 while reserve requirements on time deposits were reduced to 1 percent.⁶ Finally, the central bank has aligned its regulatory framework with Basel III by introducing the Eligible Liquid Assets Ratio (ELAR) and the Liquidity Coverage Ratio in 2015. The new ELAR was implemented in July 2015 and requires eligible banks to hold liquid assets (cash, central bank CDs, reserve requirements, UAE and foreign government bonds and Sukuk with a zero-risk weight) equivalent to 10 percent of total liabilities while the new LCR became effective on January 1, 2016.

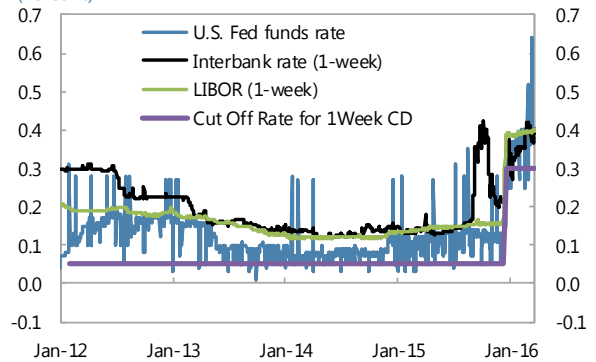
⁶ Demand and savings deposits represented about 54 percent of total deposits while the remaining 46 percent consisted of time deposits at end-2015.

Figure 1. Recent Banking Sector Developments

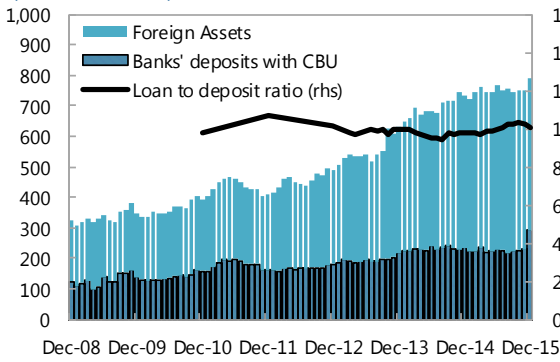
Bank Deposits and Credit to the Priv. Sector, 2009q4-2015q4
(Contributions to y-o-y growth)



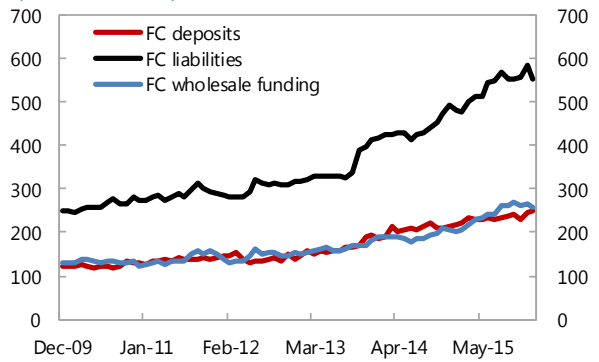
Policy Rates, December 2009–February 2016
(Percent)



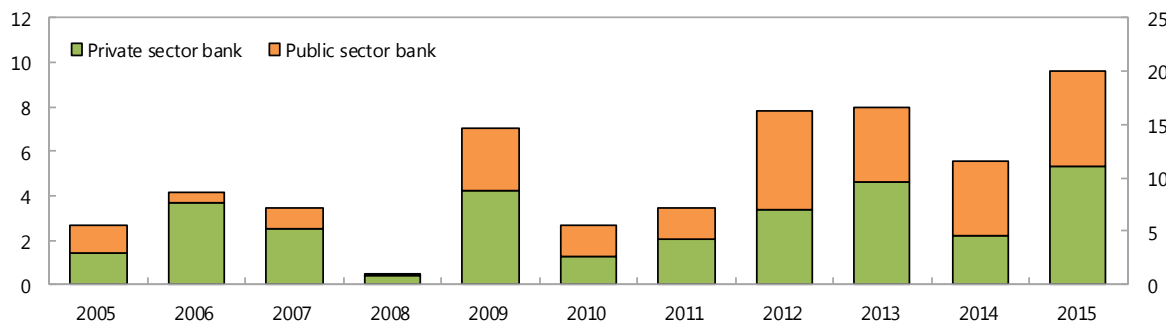
Bank Liquidity, 2008–2015
(Billions of Dirham)



Bank Foreign Currency Liabilities, 2009–2016
(Billions of Dirham)



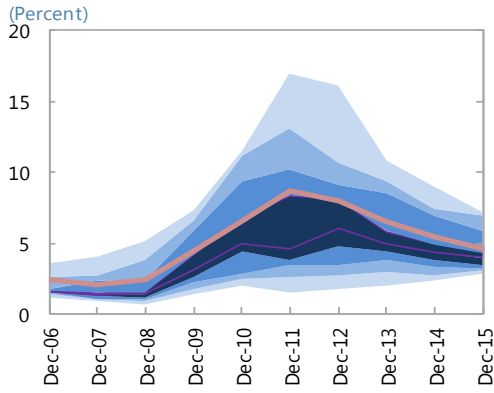
Debt Issuance by Borrower Type, 2005–15
(U.S.\$ billions)



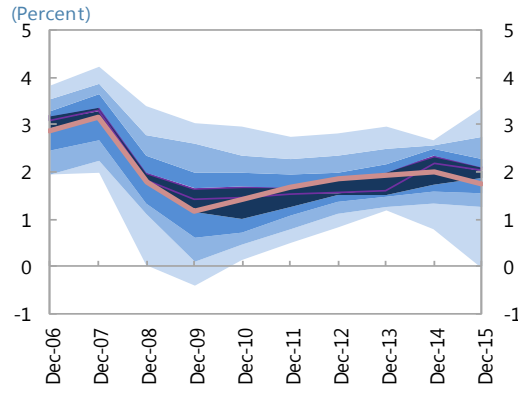
Sources: Country authorities; Haver; NBS; and IMF staff estimates.

Figure 2. Financial Soundness Indicators
(In Percent)

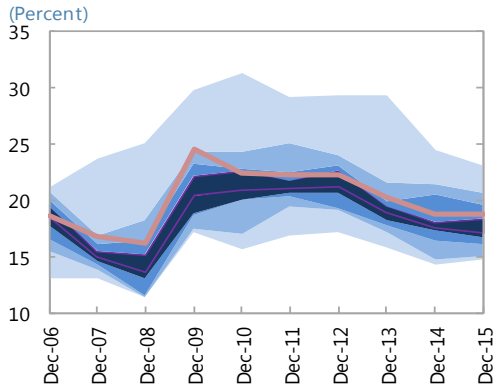
Nonperforming Loan Ratio, 2006–15



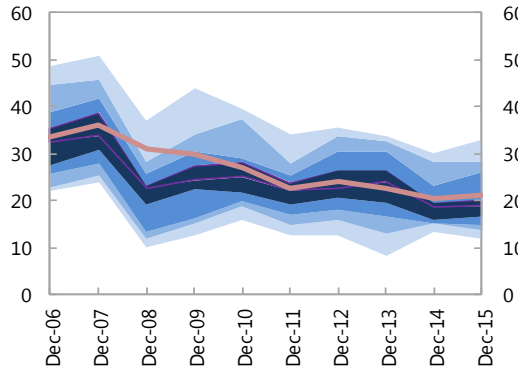
Return-On-Asset Ratio, 2006–15



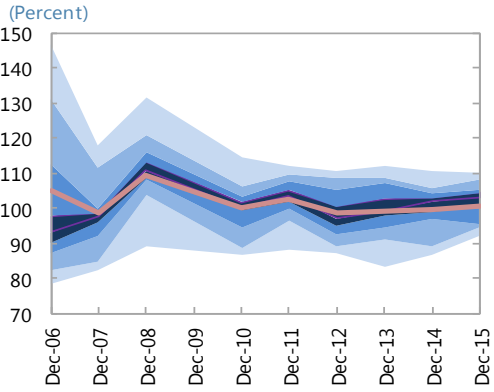
Capital Adequacy Ratio, 2006–12



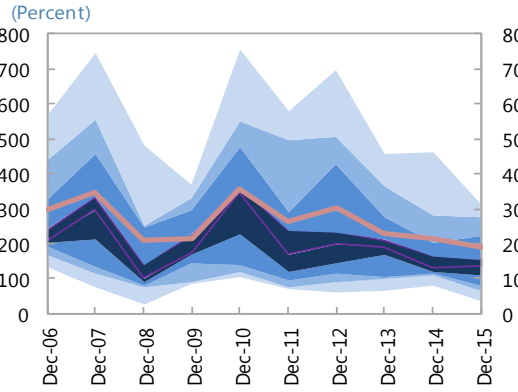
Liquid Assets-to-Customer Deposits and Short-Term Debt Ratio, 2006–15



Loan-to-Deposit Ratio, 2006–15



Interbank Ratio, 2006–15



- 80-90% percentile
- 60-70% percentile
- 40-50% percentile
- 20-30% percentile
- 0-10% percentile
- 70-80% percentile
- 50-60% percentile
- 30-40% percentile
- 10-20% percentile
- Average

Source: Bankscope; and author's calculations.

7. Given the comfortable liquidity position of the banking system, the central bank’s collateralized loans to the banking system have been marginal since 2012. The central bank has established collateralized dirham and dollar liquidity facilities for conventional and Islamic banks. The framework is flexible enough to include not only domestic but also investment grade foreign securities as collateral. A rough estimate of the stock of repoable securities—including foreign securities and claims on the government—that could be pledged to the central bank with no rehypothecation is about 25 percent of total assets in the banking system as of end-2015.

C. Assessing the Impact of Lower Oil Prices and Higher Short-term Interest Rates on Liquidity

8. Even though the empirical literature on the determinants of bank liquidity is new, it can help shed light on the effect of lower oil prices and higher short-term interest rates on the liquidity buffers. The 2007-8 financial crisis is a reminder that fragilities resulting from liquidity and funding mismatches can lead to liquidity pressures and trigger bank failures. As a result, it is important to know how banks adjust their liquidity buffers in response to different shocks. Aspachs, Nier, and Tiesset (2005), Bonfim and Kim (2012), and Delechat, Henao, Muthoora, and Vtyurina (2014) provide a summary and guidance on the determinants of liquidity buffers.

9. The empirical literature has highlighted the role of bank-specific characteristics as important determinants of bank liquidity. Bank-specific characteristics such as profitability and capital can have a negative impact on liquidity buffers as banks with high profitability and capital levels can fund their operations with internal resources or can have easy market access, requiring them to hold less liquidity buffers. On the other hand, high levels of capital can also have a positive impact on liquidity as a result of capital and liquidity requirements in which larger holdings of government securities with zero-risk weight are also considered high-quality liquid assets. Other bank-specific characteristics such as lending specialization and net interest margins can also have a negative impact on liquidity buffers as they encourage lending and lead to high loan-to-deposit and low interbank ratios. In the same vein, high cost to income can have a positive impact on liquidity buffers as banks with high cost to income are less prone to fund themselves with internal resources, requiring banks to hold more liquidity buffers. Finally, the effect of bank size on liquidity buffers is ambiguous. On one hand, large bank size implies easy market access, requiring banks to hold less liquidity buffers. On the other hand, large bank size also implies high scrutiny by supervisors and markets, requiring banks to hold more liquidity buffers.

10. In addition to bank-specific characteristics, the empirical literature has also included macroeconomic variables as important determinants of bank liquidity. Macroeconomic variables such as economic growth can have a negative impact on liquidity buffers as banks expand their loan portfolio during economic expansions, resulting in less liquidity buffers, while higher short-term interest rates on deposits discourage banks from holding large liquidity buffers. In an oil exporting country, higher oil prices can also play a role in lubricating the financial system. When oil prices are higher, oil-related bank customers can make more deposits in the banking system, helping banks increase their liquid assets.

11. To assess the determinants of liquidity buffers in the UAE domestic banks, a parsimonious specification should include not only bank-specific characteristics but also oil prices, short-term interest rates, and non-oil GDP as explanatory variables. As suggested in Bonfim and Kim (2012), liquidity buffers can be proxied by (the inverse of) the loan-to-deposit ratio, the interbank loans-to-interbank deposits ratio, and the liquid assets-to-customer deposits and short-term debt ratio. Bank-specific characteristics include total assets (in log), return on asset, capital adequacy ratio, cost-to-income ratio, the net loans-to-total assets ratio (specialization), and the net interest margin. Important macroeconomic variables in the context of an oil producer with a peg to the US dollar are: changes in the three-month Libor rate (in percentage points), the percentage change in Brent oil prices, and the real non-oil GDP. The proxies for liquidity buffers and their explanatory variables are collected for a sample of 17 domestic banks for the period 2005:Q1-2015:Q4. However, not all proxies and explanatory variables are available for the full period range, which limits the number of observations to a minimum of 290 observations. The estimation method is unbalanced panel data regression with fixed effects and cluster-robust standard errors to account for autocorrelation within time and across banks. Seasonal dummy variables are also included to account for quarterly seasonality.

12. The results of the panel data regression estimation indicate that bank-specific characteristics play an important role in determining bank liquidity buffers. Table 1 reports the coefficient estimates and their respective p-values obtained with cluster-robust standard error terms to account for autocorrelation in the residuals within time and across banks. The results indicate that selective bank-specific characteristics are statistically significantly different from zero. Capital in specification (6), return on asset in specifications (3), (4), and (6), asset size in specifications (1), (4), and (5), specialization in specifications (1), (3), (5), and (6) have a negative impact on liquidity buffers as expected. However, the estimate for the net interest margin in specifications (1), (2), and (4) has a positive but opposite sign than expected. In addition, while the estimate for the cost to income in specification (1) implies that higher cost to income has a positive impact on liquidity buffers, the respective estimate in specification (5) does not have the sign as suggested by the literature. Finally, the estimates for lagged dependent variables as explanatory variables in specifications (2), (4), and (6) are larger than 0.5, implying a high degree of persistence driving the dynamics of liquidity buffers.

13. The results also indicate that macroeconomic variables are important determinants of liquidity buffers. As expected, the estimate for changes in the oil prices in specification (5) imply that higher oil prices should encourage banks to hold liquidity buffers. On the other hand, the estimate for changes in the three-month Libor rate in specification (6) suggests that higher short-term interest rates should encourage banks to lend and hold lower liquidity buffers. A possible explanation for the low statistical significance of non-oil growth rates in all specifications is that higher or lower non-oil growth rates affect simultaneously deposits, loans, and, as a result, liquid assets as business confidence rises or deteriorates. In addition, the interpolation of the annual non-oil GDP series might not be adequate to reflect its dynamics in a quarterly context. Finally, fiscal financing might also affect deposits and liquid assets simultaneously, which could make the liquidity ratios insensitive to changes in non-oil growth.

Table 1. Determinants of Liquidity Buffers

	Inverse of the Loan-to-deposit ratio		Interbank loans-to-interbank deposits ratio		Liquid assets-to-customer deposits and short-term debt ratio	
	(1)	(2)	(3)	(4)	(5)	(6)
Capital adequacy ratio	-0.0001 (0.98)	0.0014 (0.36)	5.3000 (0.43)	4.8000 (0.18)	-0.1161 (0.35)	-0.1960 (0.07)
Log of total assets	-0.0556 (0.00)	-0.0128 (0.41)	-89.6000 (0.11)	-61.4000 (0.08)	-5.4805 (0.00)	-1.2406 (0.28)
Return on asset	0.0036 (0.67)	-0.0106 (0.17)	-50.0000 (0.06)	-57.7000 (0.00)	-0.9967 (0.19)	-1.5099 (0.01)
Cost to income ratio	0.0018 (0.19)	0.0022 (0.03)	-4.6000 (0.13)	-1.7000 (0.42)	-0.2246 (0.03)	-0.0468 (0.54)
Specialization	-0.0046 (0.00)	-0.0008 (0.24)	-3.6000 (0.05)	0.4000 (0.76)	-0.3337 (0.00)	-0.1126 (0.02)
Net interest margin	0.0418 (0.00)	0.0374 (0.00)	36.1000 (0.44)	52.1000 (0.01)	-1.6130 (0.17)	0.8144 (0.26)
3 month Libor rate change	0.0065 (0.60)	0.0021 (0.88)	-14.1000 (0.78)	-22.3000 (0.44)	-1.8748 (0.05)	-0.9585 (0.35)
Oil price change	0.0001 (0.61)	0.0001 (0.77)	0.7000 (0.39)	-0.1000 (0.84)	0.0441 (0.02)	0.0185 (0.33)
Nonoil growth rate	-0.0029 (0.76)	-0.0043 (0.59)	-1.3000 (0.97)	14.0000 (0.41)	0.8037 (0.19)	0.1536 (0.79)
Lagged dependent variable		0.6050 (0.00)		0.5000 (0.00)		0.5948 (0.00)
Number of observations	353	353	303	292	353	353
Adjusted R-squared	0.20	0.41	0.04	0.27	0.19	0.42
Cluster-robust standard errors	Yes	No	Yes	No	Yes	No
Seasonal dummy variables	Yes	Yes	Yes	Yes	Yes	Yes

Source: Bankscope, Alvarez, Barbero and Zofio (2013), and author's calculations.

Note: P-values reported between parenthesis are associated with t statistics adjusted for serial correlation with clustered standard errors in specifications (1), (3), and (5). Green and yellow cells indicate statistically significant different from zero at 5 percent and 10 percent, respectively. Both the F test of individual effects and the Baltagi and Li (1990) version of the Breusch and Pagan (1980) test rejected the null hypothesis of no fixed effects for all specifications. Wooldridge's test for serial correlation and Pesaran test for cross correlation rejected the null hypothesis of no serial correlation in specifications (1), (3), and (5). Cluster-robust standard errors are calculated according to Gow, Ormazabal, and Taylor (2010) and Cameron and Miller (2015).

D. Assessing the Impact of Lower Oil Prices and Higher Short-term Interest Rates on Solvency

14. The effect of lower oil prices and higher short-term interest rates on credit quality and solvency in the UAE banking system has so far been modest. Despite strong fiscal consolidation during 2015, credit growth has remained robust, asset quality stable and capital buffers comfortable. However, sustained depressed oil prices and further tightening of monetary conditions could have an adverse impact on confidence, investment, and consumption, leading to an economic downturn and rising probabilities of default in the corporate and banking sectors.

15. Solvency of the UAE corporate sector can be assessed by analyzing probabilities of default (PDs) under adverse macroeconomic scenarios. In particular, probabilities of default (PDs) based on a forward intensity model, developed by the National University of Singapore (NUS), are a reduced form in which defaults have a Poisson distribution and the intensity of default events is a function of variables with predictive power.⁷ The NUS intensity model is flexible enough to incorporate not only defaults but also exits of firms arising from mergers and acquisitions. In this model customized to the UAE, the PDs are a function of common independent and firm-specific risk factors such as stock market index, short-term interest rate, distance-to-default (the expected difference between the asset value and the default barrier, adjusted and normalized by asset volatility), profitability, size, market-to-book value, and idiosyncratic volatility. Both common and firm-specific risk factors are then driven by macroeconomic risk factors such as oil price changes, real non-oil GDP growth, consumer price inflation, and changes in the three-month EIBOR interbank rate. The NUS model is calibrated with monthly data for the period January 1990-December 2015 for a total of 74 UAE listed firms, of which 17 firms are banks while the remaining 57 ones are either private firms (47) or GRES (10). The annual macroeconomic data are interpolated accordingly.

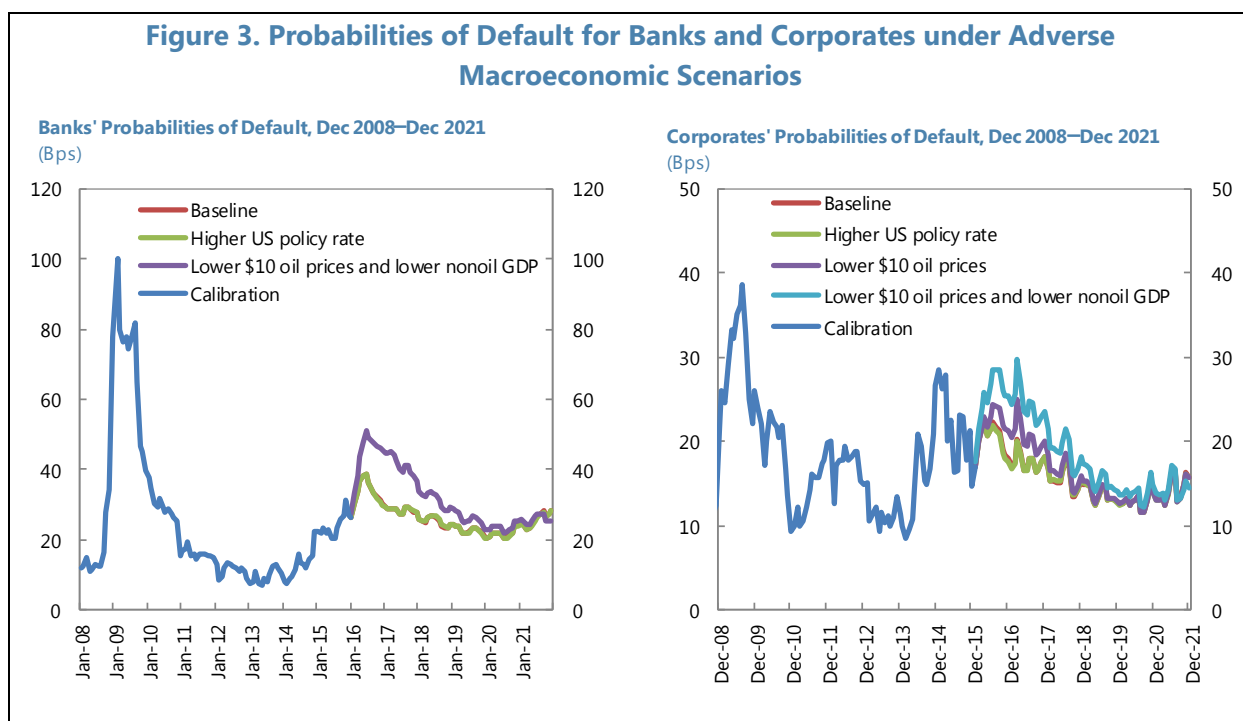
16. The projections for the PDs start by defining scenarios for macroeconomic risk factors. The first scenario is a baseline consistent with the 2016-21 macroeconomic framework in which oil Brent prices continue to decline to \$45.3 per barrel in 2016 but to gradually recover to \$60.1 per barrel in 2021, real non-oil GDP growth slows down to 2.4 percent in 2016 and gradually improve to 4 percent in 2021, CPI inflation declines to 2.8 percent in 2017 and gradually increases to 3.6 percent in 2021, and the EIBOR interbank rate changes according to the Libor projections throughout the period. The adverse oil shock scenario consists of a sudden but permanent \$10 reduction in oil prices through 2021, a 1.7 percent decline in non-oil GDP over the period 2016-21 associated with a gradual fiscal consolidation that would eliminate the additional fiscal deficit resulting from lower oil revenues,⁸ a stable consumer price inflation and EIBOR interbank rate increases similar to the

⁷ The model was developed by staff of National University of Singapore (NUS) in collaboration with IMF staff. For further details, see Duan et al (2012), Duan and Fulop (2013) and Duan et al (2014).

⁸ A fiscal multiplier of 0.5 is used.

baseline. Finally, the interest rate shock scenario consists of an increase of 100 bps in the EIBOR interbank rate both during 2016-17.

17. Overall, the PDs for the 74 UAE listed firms were low in the period preceding the oil shock and would increase under adverse scenarios. At the height of the financial crisis, the average PD for the 17 banks spiked to 100 bps while the average PD for other firms peaked at 38 bps. While the average PD for banks gradually declined to 7.2 bps in May 2013, the average PD for other firms remained volatile and above the average PD for banks in the period September 2011-March 2015. Since then, the average PD for banks has been higher than the PD for other firms and is also projected to remain higher under both adverse scenarios, with a minimum of 21 bps and a maximum of 50 bps on average under the adverse oil price shock scenario. Looking forward, under both the lower oil price and higher interest rate scenarios, PDs for UAE banks and other UAE firms are projected to significantly increase, though from a lower base. Under the adverse oil shock scenario with economic slowdown, PDs are forecast to spike and reach their highest levels since the 2009 crisis.



E. Conclusion and Policy Recommendations

18. Stressed macroeconomic conditions are expected to put pressures on liquidity and solvency of the banking sector. The empirical evidence shows that a severe scenario with oil prices lower by \$10 than the baseline (24 percent lower at the peak) will bring the liquid assets-to-customer deposits and short-term debt ratio down by 0.9 percentage points with respect to the baseline and will increase banks' probability of default by 7.5 bps in addition to the baseline on average. If the real non-oil GDP declines by 1.7 percent over 2016-21 as a result of fiscal policies to restore fiscal balance as described above, the probability of default would peak at 16.2 bps higher

than the baseline. Similarly, an interest rate hike of 200 bps will reduce the liquid assets-to-customer deposits and short-term debt ratio by 3.7 percentage points in addition to the baseline and will lead to a marginal increase in the probability of default by 0.23 bps with respect to the baseline on average.

19. The results above shed light on the importance of timely implementing the central bank's plans aimed at further strengthening banking liquidity and solvency, and enhancing corporate governance. Increased PDs in the corporate sector call for adequate provisioning of banks' portfolio as recently required by the central bank, strengthening the enforcement of loan-concentration limits and of tight control of related-party lending, and phasing in Basel III capital requirements. Regarding liquidity, supervisors should encourage banks to increase transparency on maturity mismatches in their market disclosures, diversify their funding sources, strengthen their treasury function, and maintain a cushion of high-quality liquid assets. For example, the limited information available on projected cash flows on a contractual basis published as part of annual reports and Basel II pillar III disclosures indicate that, overall, there is a short-term liquidity gap within the three-month maturity bucket in UAE banks and liquidity surpluses in the longer time horizon maturity buckets. It is also important to further develop safety nets and resolution frameworks.

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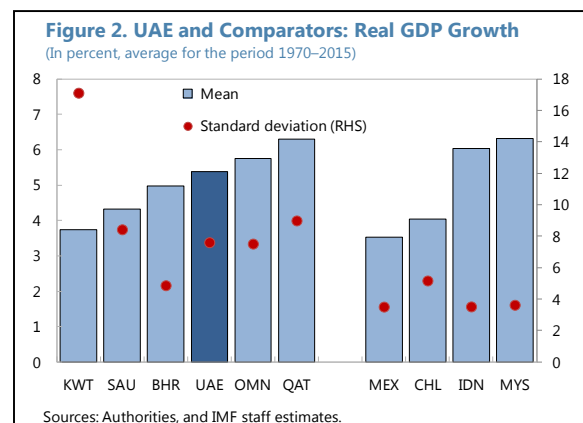
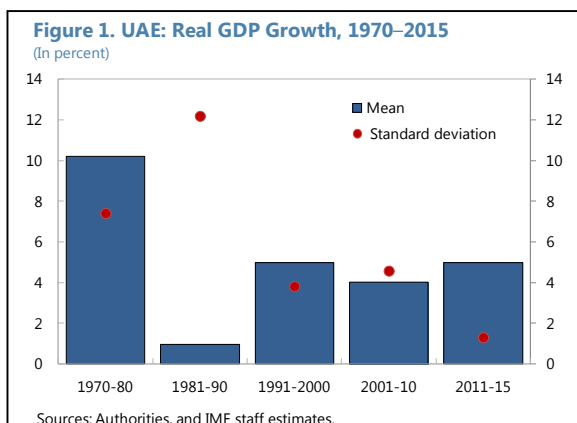
COMPETITIVENESS AND DIVERSIFICATION IN THE CONTEXT OF FISCAL CONSOLIDATION¹

The UAE's impressive transformation has been initiated by its founder's vision, the late Sheikh Zayed, who believed that "oil is of no use unless it is used in the service of the people". As a result, early on oil revenues financed fiscal and quasi fiscal spending to develop infrastructure to retool the growth model for a more diversified economy, transforming a confederation of states with primarily rural and trading economic activities into an emerging regional economic hub. Its authorities have ambitious goals for further economic diversification and to transition to a knowledge driven economy to position the country so that it can celebrate its last barrel of exported oil. Other countries' experience suggests that the road to economic diversification is long and challenging, but can be successfully managed by promoting private sector-led and export-oriented growth. Today UAE's challenges are to transition into a knowledge driven economy and gradually move from a state dominated model to one that is more private sector focused.

A. Stylized facts about economic diversification in the UAE

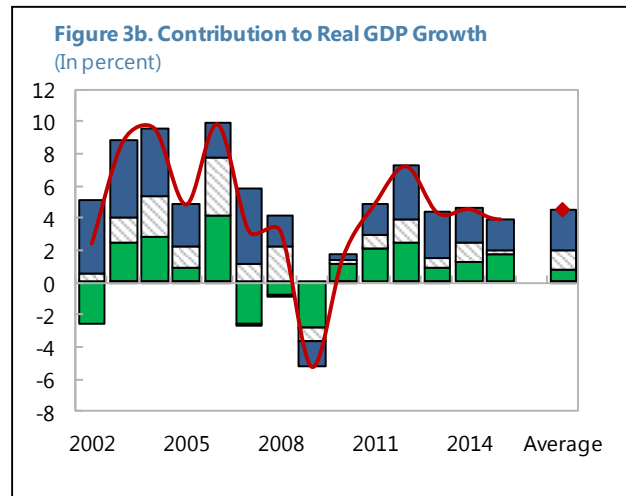
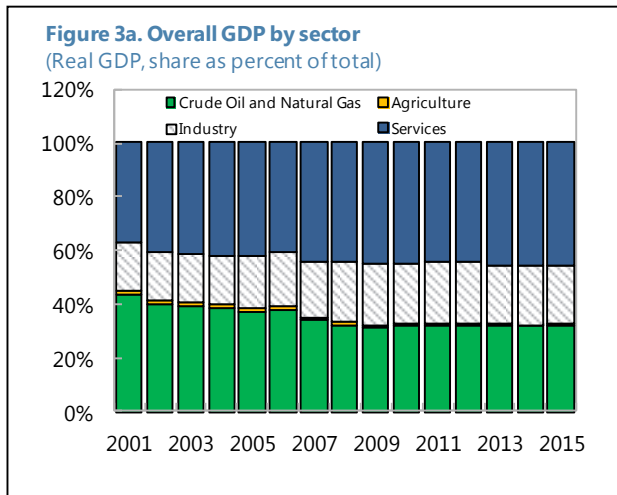
Output Diversification

1. Growth has been hovering at 5 percent and its volatility has declined. The UAE's growth has declined from an average of 10 percent in the 1970's to about 5 percent over the period 2011-15. While for the past two decades, growth has remained almost stable at about 5 percent, output volatility has significantly declined. When compared to other GCC countries over a similar period, the UAE is the third fastest growing economy and its output has been among the least volatile. When compared to countries that managed to successfully diversify away from commodity exports such as Chile, Indonesia, Malaysia and Mexico (CIMM), the UAE's average growth was favorable, but output volatility was significantly higher (7.6 percent versus 3.9 percent on average).

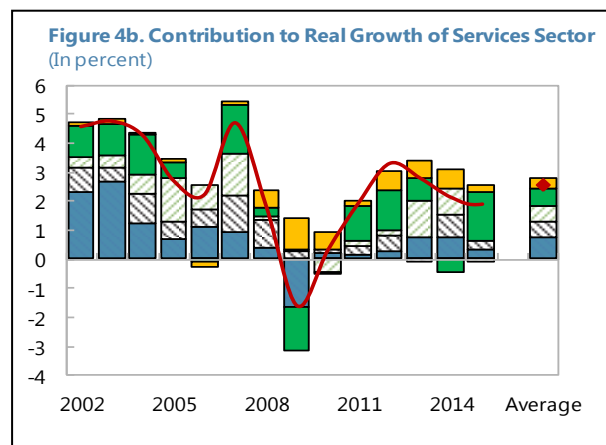
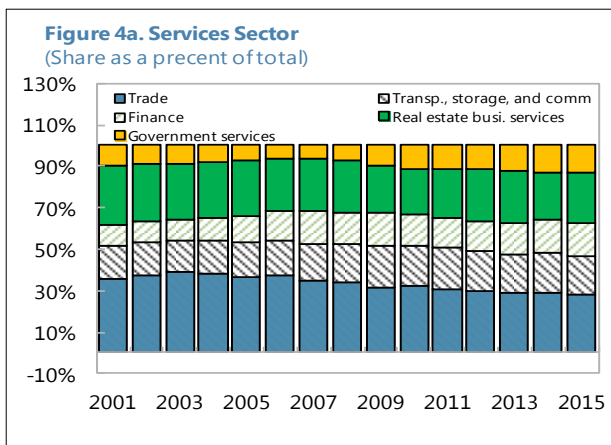


¹ Prepared by Aminata Toure.

2. The economic base has evolved from hydrocarbon dependency toward more services and industrial output. As of 2015, the main components of the output base are services (46 percent of total output), hydrocarbons (32 percent) and industrial activities (22 percent). (Figure 3A). While remaining important and pivotal, the hydrocarbon sector contribution to real GDP growth has been gradually declining and substituted by more services. Output volatility has been driven by the oil price fluctuations and real estate developments affecting related services and industrial activities. (Figure 3 B)



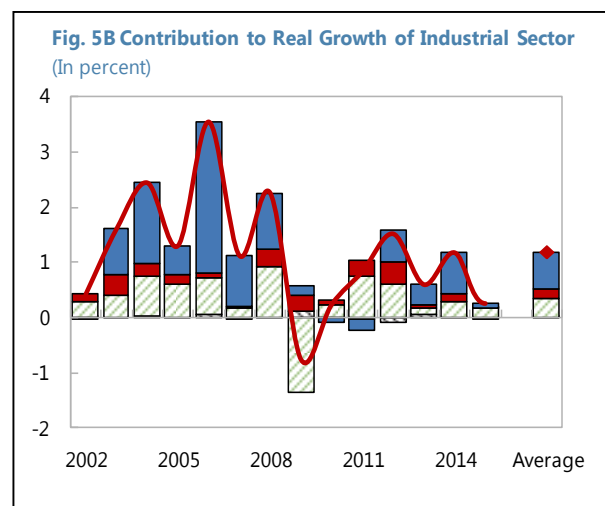
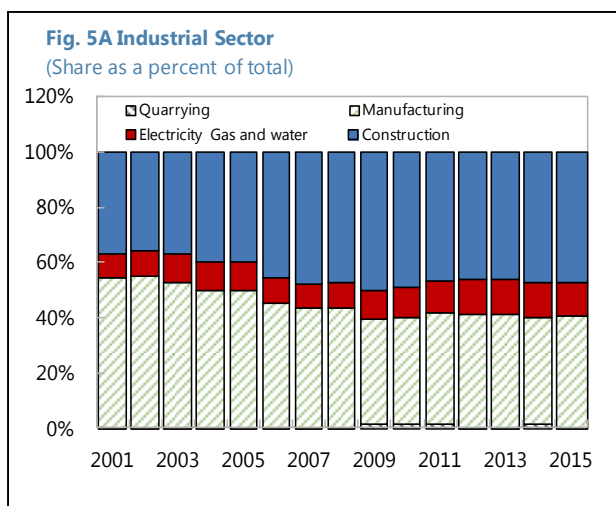
- **Services.** The share of services in output has increased from 37 to 46 percent over 2001-2015 reflecting the diversification efforts. Real estate, tourism, trade, transportation and government services are the main growth drivers of the sector.
- a. Real estate activities have been an important growth driver but have also been a source of output volatility marked by two periods of contraction in 2008/09 with the global financial crisis and in 2014 with the price correction due to oversupply.



- b. Tourism has been in the center of the country’s economic expansion plans and has experienced

a fast growing trend supported by significant infrastructure developments. The World Travel and Tourism Council estimated at 28 percent the sector’s contribution to GDP in 2015, and at 47 percent its share of employment. As a result, number of tourists’ arrivals increased from 4 to 15 million visitors a year over 2000–15.

- c. Transport and trade activities have increased in tandem with the UAE becoming a regional hub for transport and logistics. A few of the flagships are Dubai international airport, which is first in the world in terms of passengers (topping London Heathrow); Emirates Airline, a regional leading airline; and DP World, a leader in world port infrastructure and services.
- d. The financial sector’s contribution to growth has been growing since the 2008 crisis. Rapid financial sector development allowed the UAE to emerge as the financial center in the region. Total banks’ assets are the largest in the Arab world. The creation of the Dubai International Financial Center (DIFC) in 2004, a federal financial free zone, has provided an important platform for business and financial institutions for emerging markets with the legal, business, and physical infrastructures benchmarked against international standards. Furthermore, the UAE was upgraded from frontier to emerging market in 2013 by Morgan Stanley Capital International, and this shift has opened up new sources of longer-term capital for the UAE.
- **Hydrocarbon.** The share of hydrocarbon output (oil and gas) has dropped from 43 to 32 percent over 2001-2015 owing to a large extent to the authorities’ diversification efforts expanding the non-hydrocarbon output, though part of it in downstream industries, and to a lesser extent to the drop in oil prices since mid-2014. The UAE’s hydrocarbon’s sector has developed into the world’s best partly owing to continued partnership with international oil companies (including BP, Shell, Total, Exxon-Mobil and the Japan Oil Development Company) under long term production-sharing agreements.
- **Industries.** The share of industrial activities in total output grew from 18 to 22 percent over 2001-15. Construction, manufacturing and electricity are the main drivers of the sector with construction and manufacturing being the most volatile components of the sector due to high correlation with the real estate sector for the former and the oil sector for the latter.

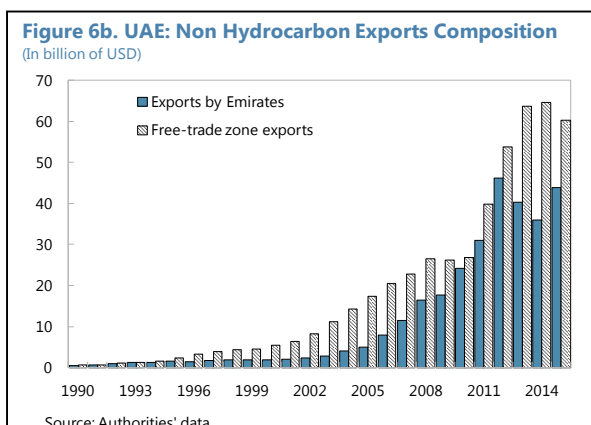
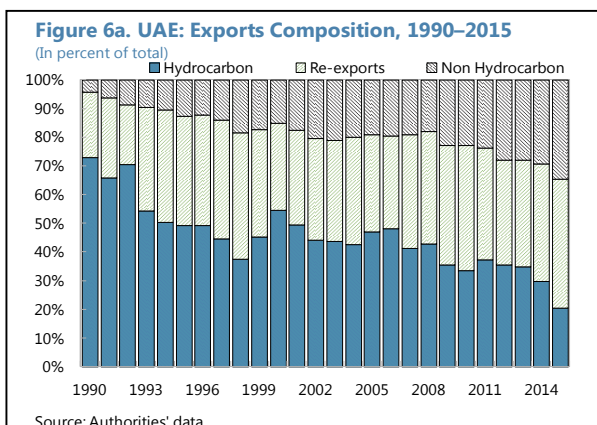


Petrochemicals, aluminum and steel have been the main pillars of industrial activities. The UAE has emerged as a leading aluminum producer in the Middle East with 46 percent of the market share and is hosting the world fifth largest producer company. The UAE is also the second largest cement producer in the GCC after Saudi Arabia. In addition, other sectors have been gaining momentum in partnership with foreign companies (Germany, Japan, Austria) such as the automotive sector, chemicals, cement, electrical machinery, power equipment and food processing. Partnerships with foreign enterprises and joint ventures allowed industrial and manufacturing companies to benefit from most up to date technologies.

Trade Diversification

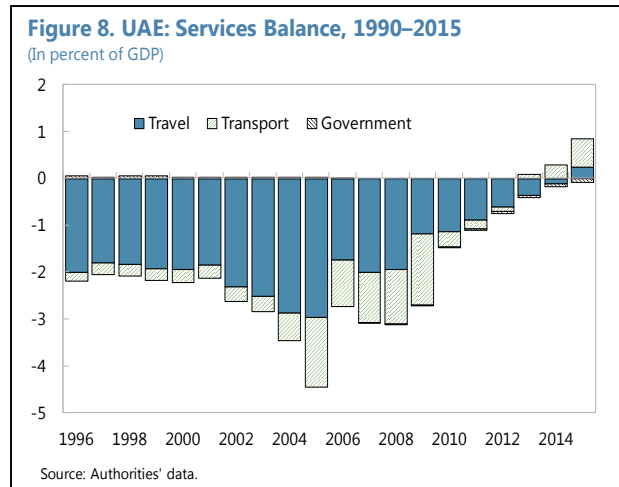
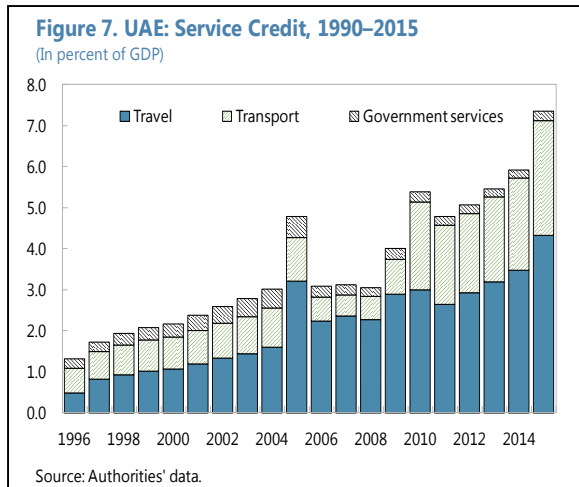
3. Despite a diversified output base, trade diversification still lags behind in terms of diversity and quality of exported products when compared to CIMM.

- **Export base.** Hydrocarbon dependency in exports revenues has declined tremendously for more non-hydrocarbon exports and re-exports which have grown respectively from 2 to 28 percent of GDP and from 11 to 36 percent of GDP over 1990–2015. (Figure 6a) While disaggregated data is not available on the goods’ composition of non-hydrocarbon exports, the 2013 UAE yearbook mentions that the exports base has evolved from petrochemicals to more diversified products

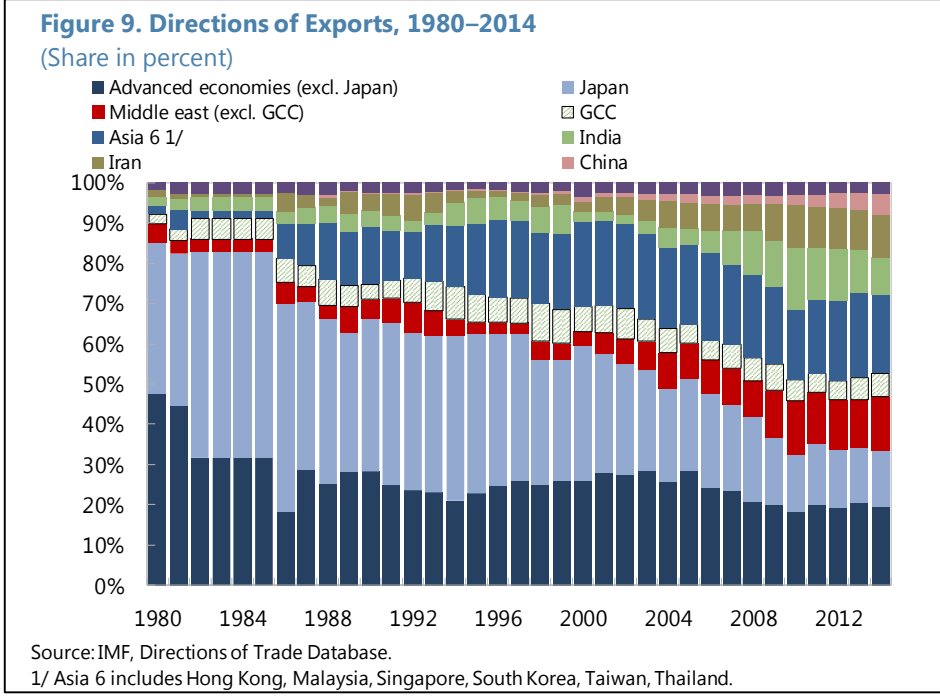


such as machinery and transport equipments, chemicals and food. As for re-export segment, it has seen rapid growth positioning the UAE as the major re-export center for the region and the third largest in the world after Hong Kong and Singapore. Jewelry is the main re-export followed by plastics, cars, phones, food and fiberglass. The rapid pace of expansion of the nonhydrocarbon exports and re-exports has been facilitated by the Free Trade Zone (FTZs) that provide logistical, administrative and financial advantages for exporting and re-exporting companies. These FTZs host a large number of international companies that cater to the Middle Eastern and Asian markets. (Figure 6b) Exports’ expansion has also been helped by the UAE’s tremendous development of its port and airport infrastructures and services. In line with the Emirates’ vision for becoming a regional hub for transport, logistics and a focal point of the global travel industry, the export services have also expanded from 2 to 7 percent of GDP over

2000–15 mainly on account of tourism and transport services. (Figure 7) These advances have helped improve the external service balance from a deficit of 2 percent of GDP in 1996 to a surplus of 0.8 percent in 2015. (Figure 8).



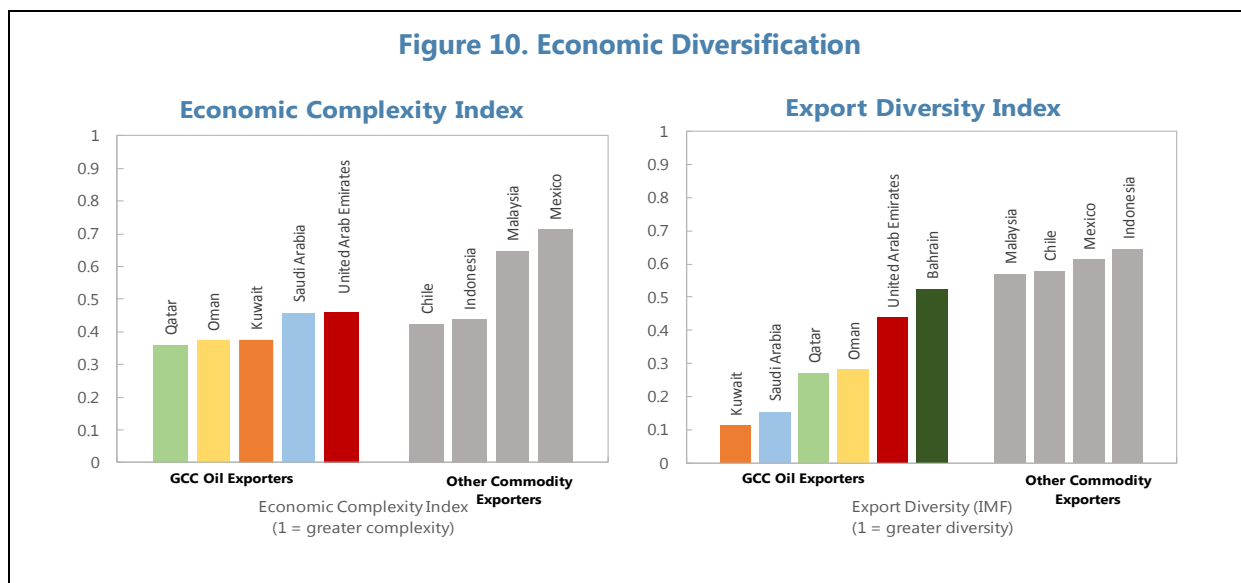
- Directions of exports.** Exports destinations have also changed over the years from advanced economies towards emerging and developing countries. (Figure 9) Compared to the 1980's, the share of exports to advanced economies (mainly European union and Japan) has declined by 45 percentage points while that to Asian countries ², the Middle East, Iran and India respectively increased by 19 percent, 13 percent, 9 percent, and 8 percent. The changing exports destinations have been simultaneous with the growing shares of the non-oil exports and re-exports segments and supported by the rising influence of the Asia-Pacific region. The main re-export markets include Iran, Saudi Arabia, and other GCC economies. The expansion in exports



² Hong Kong, Malaysia, Singapore, South Korea, Taiwan, and Thailand.

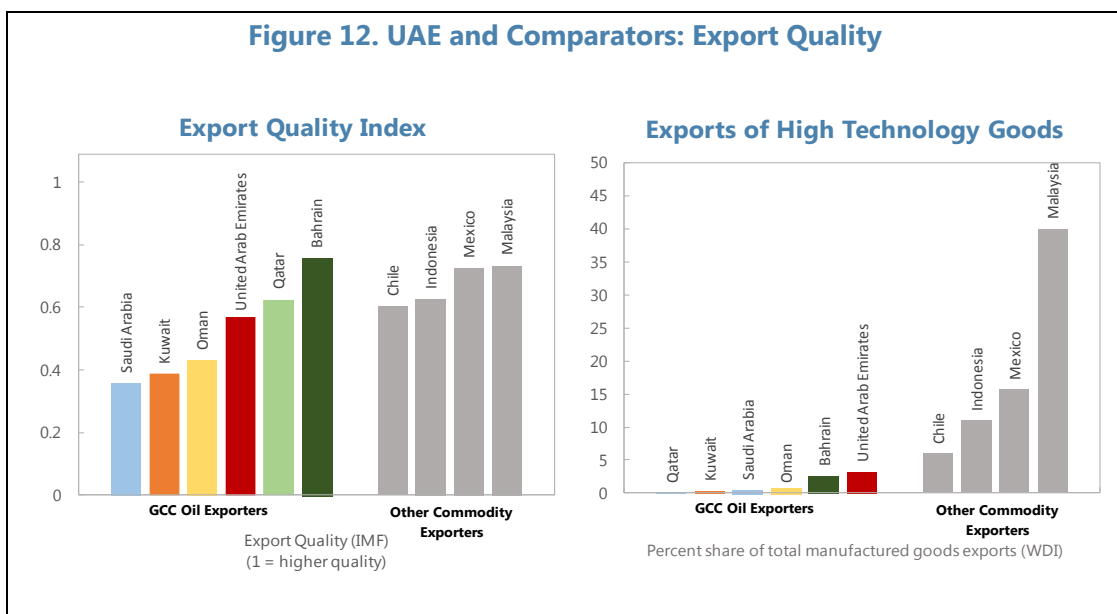
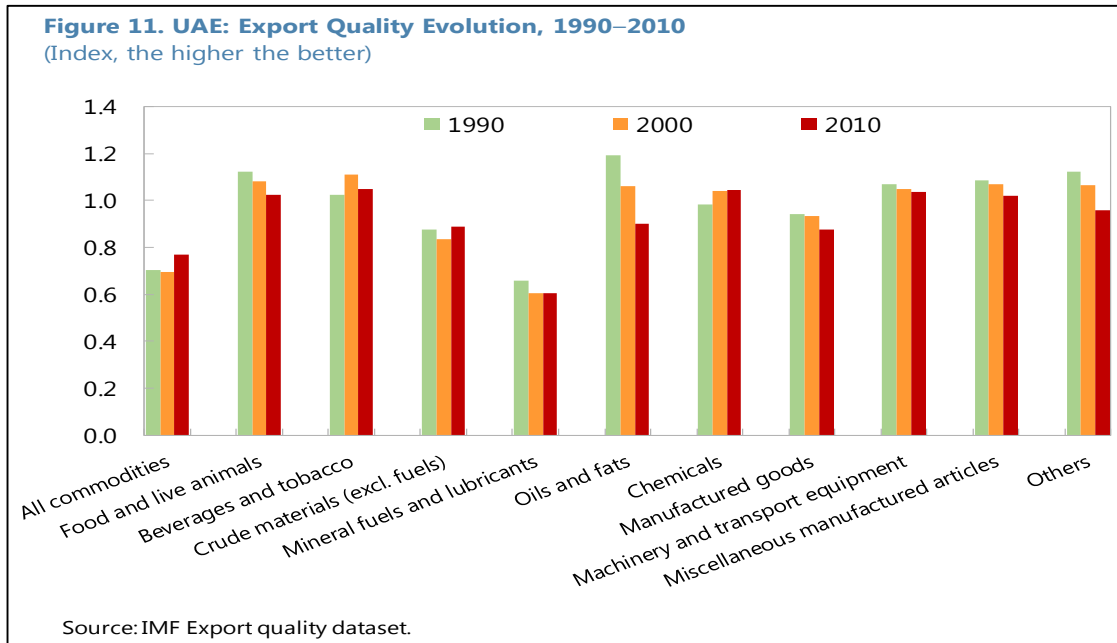
destinations has also been facilitated by the UAE’s various free trade agreements (FTAs) which have opened trade and increased exports in the region and beyond. The UAE is a member of the GCC Customs Union, sharing both common customs law and external tariff with other GCC members. It is also a member of the Greater Arab Free Trade Area (GAFTA), an agreement signed in 1998 providing duty-free trade for limited goods between the 17 Arab countries signatories. It concluded FTAs with Singapore and the ASEAN Free Trade Area (AFTA) in 2008 and 2009 respectively, and [is now in consultation] with other GCC countries to conclude other free-trade agreements with the EU, Japan, China, India, Pakistan, Turkey, Australia, South Korea and the Mercosur bloc (including Brazil, Argentina, Uruguay and Paraguay).

- Economic diversification measures.** Measuring diversification through three specific indicators such as the IMF export diversification and quality index, and the economic complexity index shows that the UAE compares favorably with the GCC but lags behind when compared to CIMM. In terms of economic complexity index, which measures the number of products made by an economy and controls for the likelihood that the same product is also made by others, the UAE compared favorably with the region, and Chile and Indonesia but has great strides to make when compared to Malaysia and Mexico. The export diversification index, which combines both measures of extensive and intensive dimensions of diversification shows that UAE is the most diversified economy in the region after Bahrain³, but compares less favorably to CIMM due to fewer number and lower volume of exported goods.



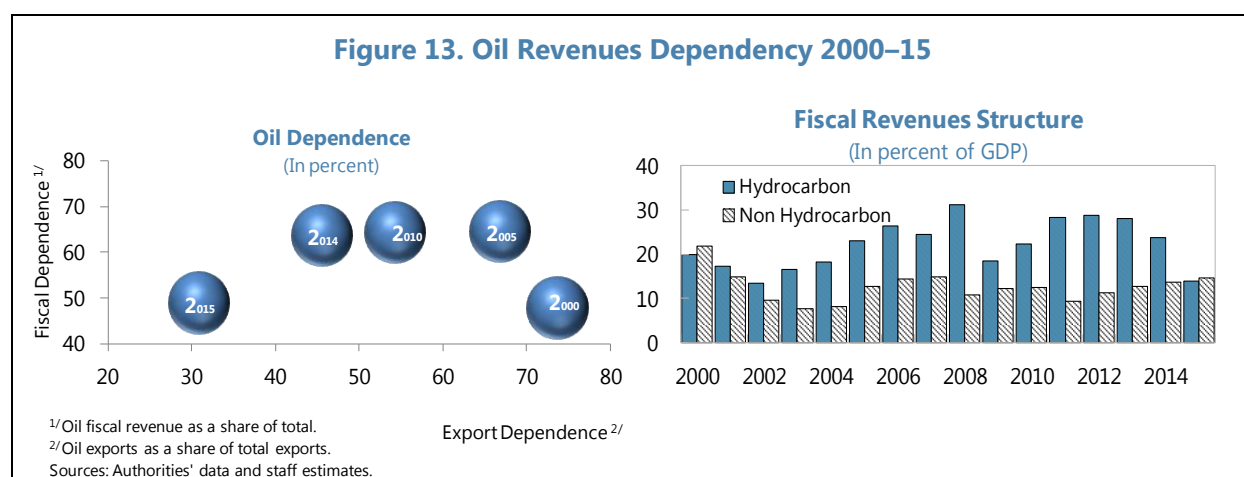
³ Bahrain has diversified its economic activities by developing banking and financial services (particularly in Islamic banking) and non-oil exports.

- Export quality.** Overall export quality in the UAE has increased over time but the improvements have been unevenly distributed across product categories. Most of the improvements are concentrated in hydrocarbon and chemical products. (Figure 11) The quality of other exported goods requiring higher labor skills such as the manufactured goods, machinery and transport equipment declined. When compared to others, the UAE’s export quality stands above the average of the GCC but lags behind when compared to CIMM in particular Malaysia and Mexico. In addition, the UAE produces very low levels of high technology goods when compared to CIMM. (Figure 12)



Fiscal Diversification

4. While export dependency on oil has declined remarkably, diversification on the fiscal front has been less evident. (Figure 13) Similar to other GCC countries, fiscal dependence on oil revenues is high and nonhydrocarbon revenues have been strongly correlated with hydrocarbon revenues. Non-oil revenues are dominated by taxes on international trade and fees. Despite declining in the past, non-oil fiscal revenue as share of non-oil GDP appears in recent years more stable hovering at around 20 percent perhaps due to low taxation or narrow non-oil tax base. Furthermore, this high dependency on oil-revenues might translate into pro-cyclical fiscal policies and higher vulnerability to oil prices, which can increase growth volatility and policy uncertainty, which is often detrimental to economic diversification.



Financial Diversification

5. The UAE has well managed and diversified financial assets. The UAE has accumulated ample sovereign assets from oil revenues and have set up different Sovereign Wealth Funds (SWFs) or investment vehicles. While the overarching objective of all these funds is the economic diversification of the UAE, they also have different objectives related to intergenerational saving transfers, fiscal stabilization and social priorities. Total SWF assets are estimated at 1.2 billion by end 2015. The UAE’s largest SWF is Abu Dhabi Investment Authority (ADIA), established in 1976, is responsible for investing a significant portion of Abu Dhabi’s oil revenues mainly abroad. ADIA’s investment decisions are solely guided to deliver sustained long term financial returns in line with its economic objectives of intergenerational saving transfers and fiscal stabilization. According to the limited information available, ADIA’s assets are invested in a diversified portfolio distributed across more than a dozen

Table 1. UAE: Sovereign Wealth Fund Assets, 2015
(In billion U.S. dollar)

Abu Dhabi Investment Authority	773
Investment Corporation of Dubai	183
Abu Dhabi Investment Council	110
International Petroleum Investment Company	66
Mubadala Development Company	66
Total	1,199

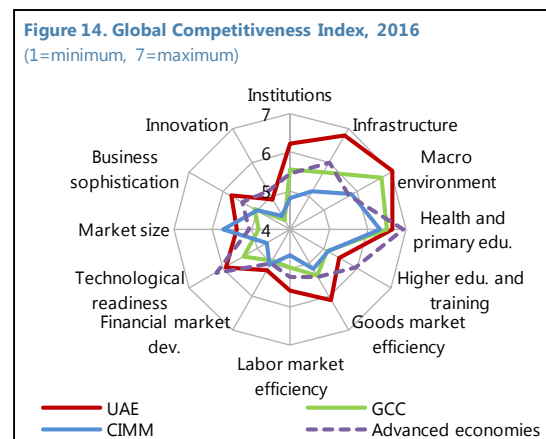
Source: SWF institute.

asset classes including equities, fixed income, real estate and infrastructure, private equity and alternatives. These accumulated foreign financial assets provide important diversification to the country's assets portfolio and bring in income flows denominated in foreign currency. An another example of a sovereign investment arm with a domestic diversification mandate is Mubadala, which is a key pioneer for Abu Dhabi's economic diversification to support dynamic growth for a diversified economy. The fund is now self-funded and invested in a number of areas including air space, defense, renewable energy, real estate development, and healthcare.

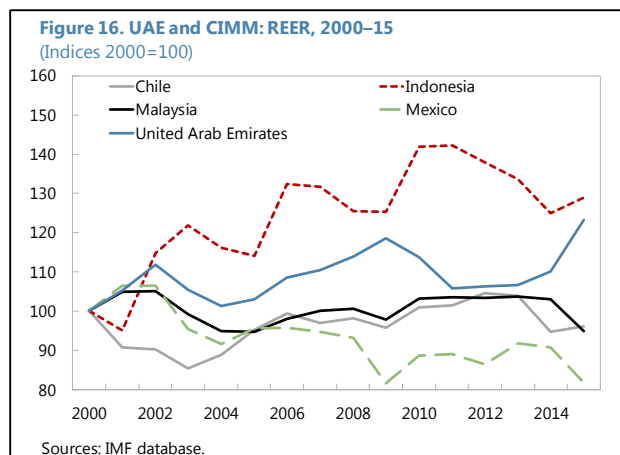
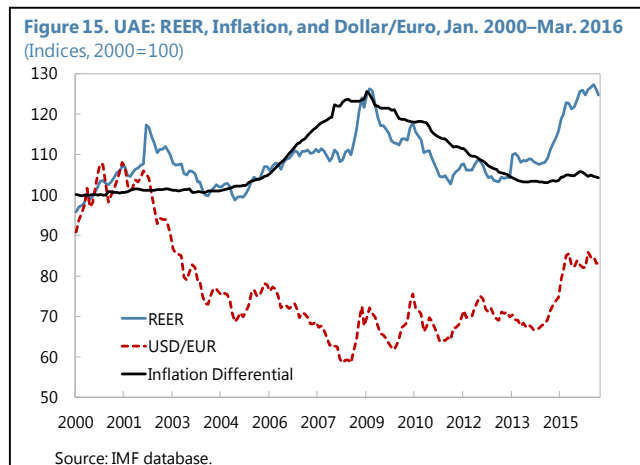
B. Status of UAE's Competitiveness

6. Overall global competitiveness is favorable, but is lagging in areas of innovation, higher education and financial market.

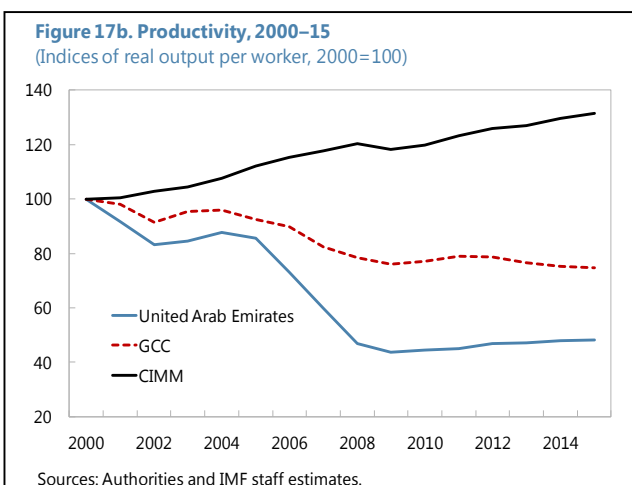
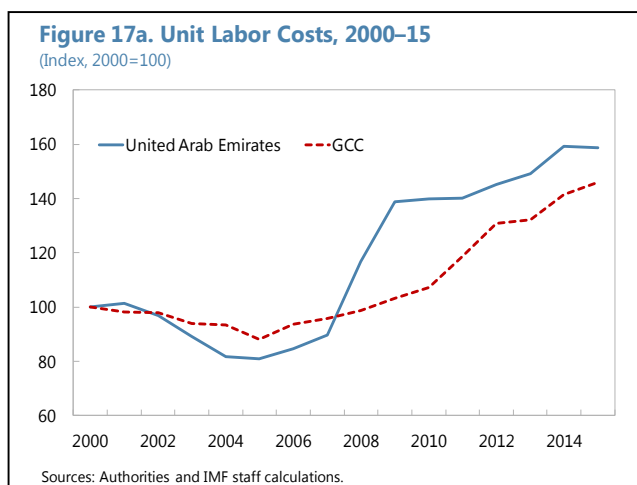
The UAE's overall competitiveness compares very favorably with advanced economies and CIMM, especially in the areas of infrastructure, quality of macroeconomic environment, health and primary education, institutions, goods market efficiency, technological readiness and business sophistication. (Figure 14) Reaching the authorities goals' of becoming one of the 10 most competitive countries in the world by 2021 will require improvements in the areas of innovation, financial market development, higher education and training, labor market efficiency, market size, and business sophistication.



7. Despite strong real effective exchange rate (REER) appreciation, non-hydrocarbon export growth performance remained strong. Overall since 2000 the Dirham has appreciated by 29 percent in real effective terms. While there were a number of appreciation and depreciation episodes over 2000-15, appreciation pressures dominated owing primarily to inflation differential with trading partners and to the US dollar movements against the Euro. (Figure 15) Over 2005-12, changes in the REER were largely driven by inflation differential offsetting the dollar changes vis-a-vis the Euro. During the period 2012-15, while inflation remained broadly in line with trading partners, the REER appreciated by 17.8 percent in line with the US dollar strength. In early 2016, the REER started to depreciate owing to both a depreciating dollar and lower inflation differential. Overall, the Dirham REER appreciation appears to have had muted impact on price competitiveness as the share of nonhydrocarbon exports as a percent of total exports grew in real terms from 20 to 66 percent over 2000-15 and tourists' arrival has more than tripled. For all CIMM (except Indonesia), which have more diversified exports including manufactured and high tech goods, their REER depreciated over 2000-15. (Figure 16)



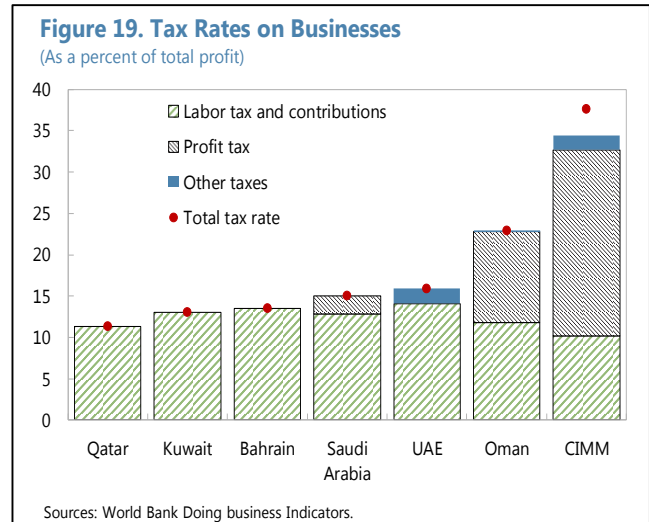
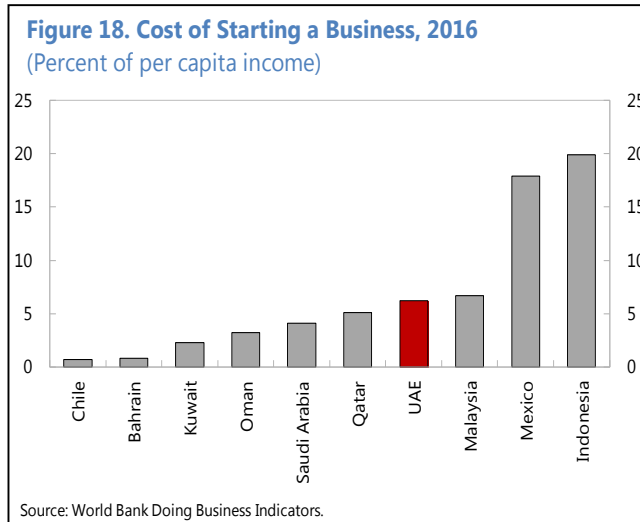
8. Labor costs have been rising while productivity has been declining⁴. Increases in unit labor costs (ULC) have not been accompanied by higher productivity. The UAE's ULC has been on an upward trend and stood higher than the average in the GCC. (Figure 17A) The ULC estimates presented in this analysis should be interpreted with caution as they could have upward biases given that they are based on the public sector compensation and don't include the private sector compensations due to data limitations. At the same time productivity has been declining, even more so than in the other GCC countries.



9. Costs of starting and doing business are affordable with a predictable environment. The cost of starting a business in the UAE is somewhat higher than in the other GCCs but

⁴ Data limitations prevent a direct comparison of unit labor costs in UAE to costs in other countries. This analysis compares the growth in unit labor costs since 2000, with the caveat that the constructed unit labor cost index differs across comparator countries. The estimated ULC is derived using general government compensation of employees and non-oil real GDP.

remarkably lower when compared to CIMM. (figure 18) Also worth noting that the cost has dropped over time for most countries in the GCC including the UAE, and that Saudi Arabia has recorded the largest drop. The UAE is a tax haven for businesses, with tax pressure broadly within the averages of the GCC but significantly lower than in CIMM. (Figure 19) Businesses do not pay corporate income tax but pay about 12.5 percent in labor taxes representing social security contributions.⁵ Other taxes represent land transfer/registration fees, trade license renewal fees and vehicle registration fees respectively for 2 percent, AED 48000, and AED 1000. All together these taxes amount to 15.9 percent of profit.



10. Other factors costs are also affordable.

- Cost of energy.** In 2014, prior to the UAE removal of fuel subsidies, domestic prices of hydrocarbon products were already higher than in other GCC countries but were significantly lower than in CIMM. (Figure 20) In August 2015, the UAE was the first among the GCC countries to remove transport fuel subsidies bringing domestic prices in line with global prices. In addition, electricity access costs are among the lowest in the GCC and are significantly lower than in CIMM.
- Transportation.** Transportation infrastructure is very developed, somewhat compensating for higher fuel prices. The quality of roads, ports and airports infrastructure are among the world best.
- ICT services.** The International Communication Union (ICU) ranked in 2015 the UAE's ICT level of development in third and 32th position respectively within the Arab world and globally. The UAE ICT's sector is well developed and has recorded tremendous progress since 2010 with its global ICT ranking improving by 17 ranks since then. The ICU ranked the UAE in 24th position in terms

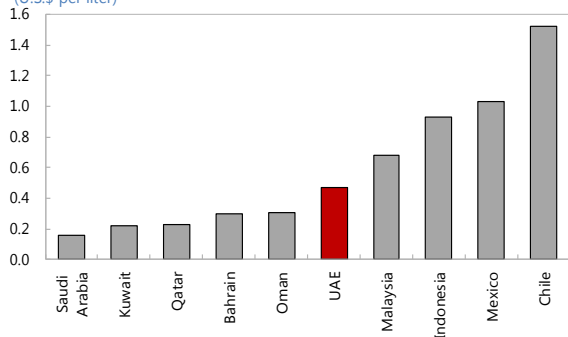
⁵ From Doing business database.

of ICT affordability; and ICT affordability compares to the average GCC and is significantly more affordable than in CIMM. However, a closer look of the three different segments of ICT reveals that while affordability in the land lines and mobile cellular segments are similar to that of Norway (ranked 4th globally), the fixed broadband segment is less affordable.

Figure 20. Other Factor Costs

Gasoline Prices, 2014

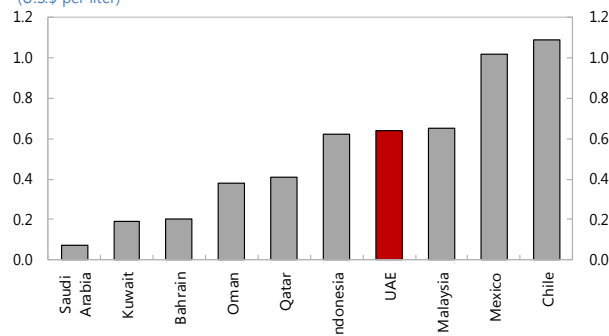
(U.S.\$ per liter)



Source: World Development Indicators.

Diesel Fuel Prices, 2014

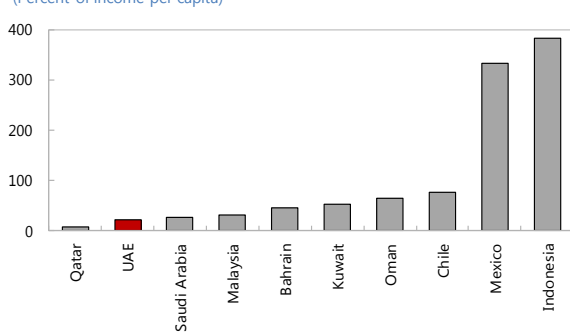
(U.S.\$ per liter)



Source: World Development Indicators.

Cost of Getting Electricity

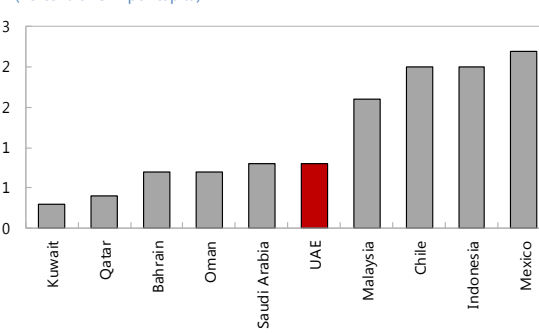
(Percent of income per capita)



Source: World Bank Doing Business.

ICT Price Basket

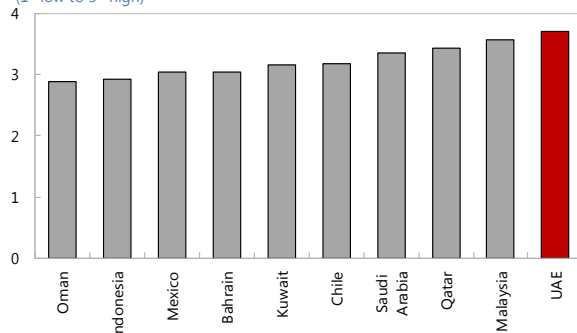
(Percent of GNI per capita)



Source: International Telecommunication Union.

Quality of Trade and Transport-Related Infrastructure, 2014

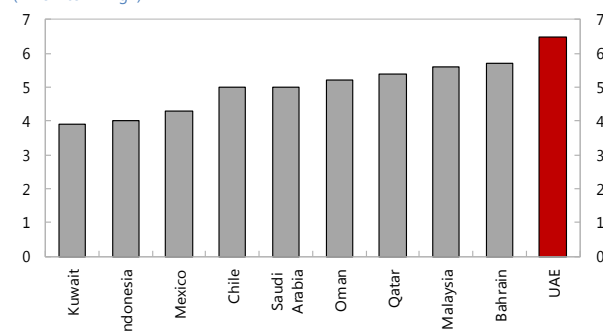
(1=low to 5=high)



Source: World Development Indicators.

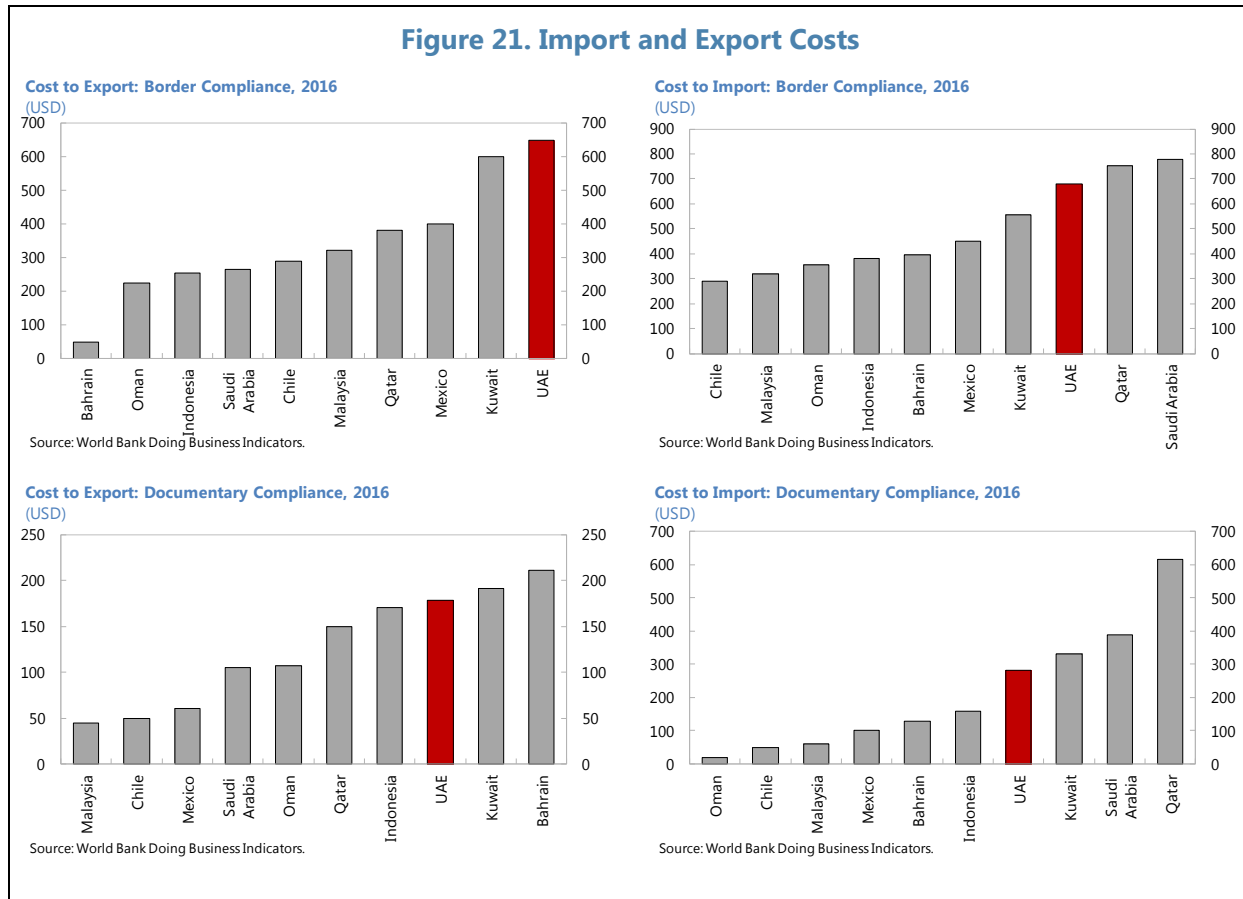
Quality of Port Infrastructure, 2014

(1=low to 7=high)



Source: World Development Indicators.

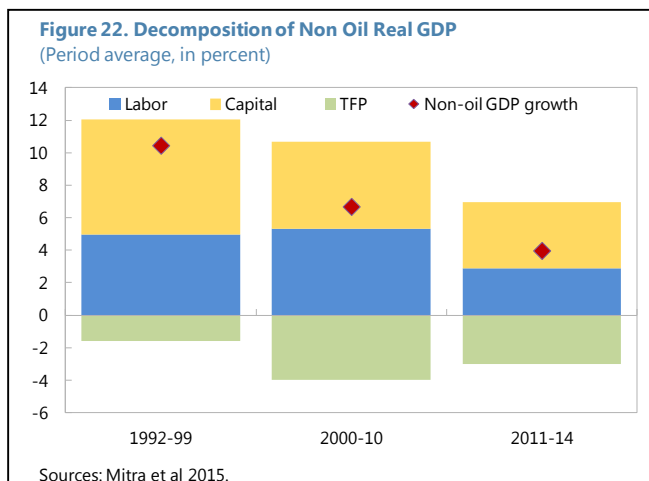
11. Cost of trading stands high by international standards. Despite the UAE’s notable advances in trade and transport related infrastructures, available data suggests that imports and exports costs are high and more particularly export costs. These costs are much higher than the average GCC country and the selected comparators. The bulk of these high costs relate to the preparation of documents for border compliance during port or border handling, customs clearance and inspection procedures, which also could discourage exports diversification.



C. Productivity, Labor, and Investment

12. Growth accounting exercise reveals that low productivity has penalized non-oil growth for decades. Results from Mitra et al (2015) growth accounting exercise on potential non-oil growth show that while capital accumulation has fueled growth, declining productivity has mainly penalized growth. (Figure 22) In addition to negative TFP, relatively lower labor and capital contributions to potential growth explained non-oil growth deceleration over time. Use of accumulated oil receipts to spur government infrastructure spending has made physical capital the main driver of potential growth. In addition, heavy reliance of foreign labor has made labor another driver of potential growth. As a result of abundant physical and human capital, less emphasis has been placed in raising productivity, thus explaining its negative contribution to growth.

- Labor:** The UAE growth model has been heavily relying on abundant human capital mostly foreigners with only one out of ten workers being an Emirati national. They have attracted both skilled and lower-skilled workers. However, the main growth drivers in the non-oil sector were tourism, real estate, and aluminum industries which tend to attract low skilled labor which is less conducive to sustaining productivity gain. Going forward, improving the quality and skill set of the labor force will be key to migrate to a knowledge driven economy and expand the economic activity into higher tech and manufacturing industries. To this end the authorities are aggressively improving the quality of education for Nationals. They are also tackling gender balance issues to create a supportive environment for women to fulfill their roles as key partners in building the UAE’s future.

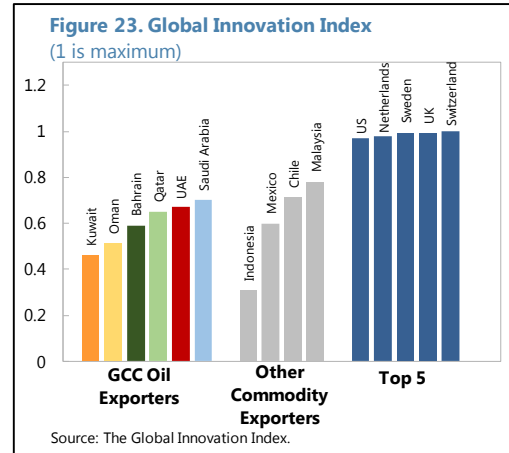


- Investment:** Massive public investment in infrastructure has allowed transforming the Emirati economy fueled by physical capital contribution to non-oil growth. This has translated into high quality infrastructure by international standards. Using the data set from Albino-War et al 2014, there is room to improve public investment efficiency. The UAE public investment efficiency scores broadly compare to the GCC average but rank lower than in CIMM or advanced economies. The results also indicate that infrastructure quality could increase with the same amount of investment by 10 percent for the UAE, 17 percent for the GCC and 7 percent for CIMM.

	Infrastructure Quality	
	PFDH	DEA
UAE	0.95	0.90
Advanced economies	1.03	0.90
Emerging markets	0.91	0.82
GCC	0.97	0.83
CIMM	1.03	0.94

Source: Albino-War et al. (2014).

- Innovation.** The Global Innovation Index ranks the UAE in the 47th position out of 141 countries in 2015, comparing favorably with other GCC countries and CIMM. (Figure 15A) An analysis of the multi-dimensional indicators of innovation shows that while the Emirati economy compares very favorably to peers and even top 5 countries on innovation inputs, it lags behind on innovation outputs. (Figure 15B) Indicators of innovation inputs include the quality of institutions, human capital and research, infrastructure, and level of market and business sophistication; and innovation outputs include knowledge, technology and creative outputs. A more granular analysis of the different dimensions of innovations inputs and outputs highlights the following:

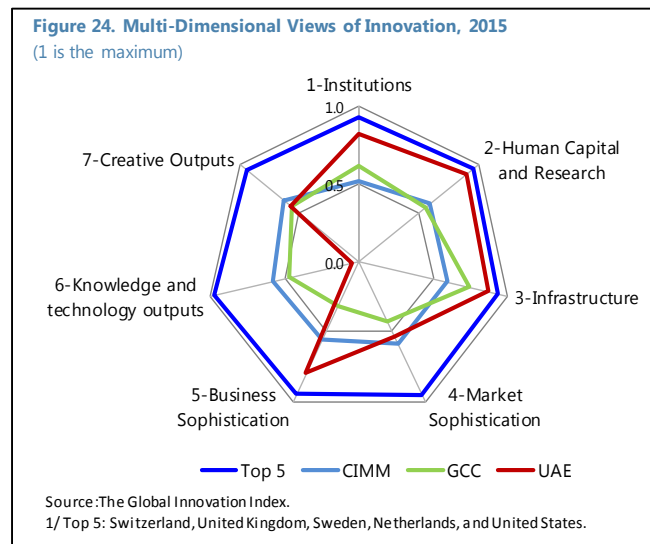


- Institutions:** While ranking favorably in political and regulatory environment, the business environment ranking is affected by the perceived lack of ease in starting a business and in resolving insolvency.

- Human capital and research:** in terms of spending, while ranking well in overall and tertiary education, the UAE does not rank well in R&D.

- Infrastructure:** The UAE ranks very well in information and communication technologies (ICTs), in general infrastructure including electricity output and logistics performance.

- Market sophistication:** The UAE’s rankings are penalized by the perceived lack of ease in getting credit and bottlenecks to private investment (perceived lack of investor protection, the low market capitalization and underdeveloped venture capital).



- Business sophistication:** the UAE’s rankings are favored by clusters development⁶, strategic alliance deals, and to a lesser extent by innovation linkages with university and industry research

⁶ Clusters development: geographic concentrations of firms, suppliers, producers of related products and services, and specialized institutions in a particular field.

collaboration. However, low levels of high-tech imports as a share of total trade penalize UAE's ranking in this dimension of innovation input.

- f.** Knowledge and technology outputs: While data limitations penalize its ranking, the UAE ranks low in knowledge creation, impact and diffusion due to low levels of scientific and technical publications, of patent creation, of high-tech exports, and by lack of high-tech manufactures.
- g.** Creative outputs: Favorable rankings in ICTs (business and organizational model creation) are offset by low rankings in other creative outputs such as the creation of intangible assets (number of trademark applications issued to residents), and the share of creative goods exports.

D. Policies and Reforms

Supportive Macroeconomic Policies

13. Economic diversification and macroeconomic stability are interwoven. Greater economic diversification increases the economy's resilience to oil price volatility by minimizing output and government revenue volatility stemming from oil price fluctuations. And the literature has found evidence that sustaining growth is positively related to macroeconomic stability. To further economic diversification, the UAE should continue to preserve macro-stability through supportive economic and financial policies.

- Fiscal Policy.** Fiscal institutions need to continue to be supportive of implementing sound fiscal policies and frameworks. Over the medium term, developing a consolidated forward-looking medium-term fiscal framework will help set the direction for fiscal policy in the UAE as a whole and better align aggregate resource allocation with the 2021 vision. In the context of lower oil prices and available ample buffers, the pace of fiscal consolidation should be planned to reduce the non-hydrocarbon primary deficit to the levels consistent with ensuring intergenerational equity, while at the time minimizing its impact on growth. A fiscal consolidation plan aimed at broadening the non-hydrocarbon revenue base while preserving the public investment will further support economic diversification. It will also be important to protect public spending in investment and human capital to further boost the productive capacity and support economic diversification while at the same time improving the efficiency and quality of spending. Alternative financing methods through public private partnerships (PPPs) could help the government meet infrastructure needs while tapping into the expertise of the private sector. Key elements of success include a robust, stable and predictable regulatory framework for PPPs; a clear, transparent, and fair bidding process; contractual arrangements with clearly defined expectations and service levels to foster compliance; and a sound management of contingent liabilities.
- Monetary and financial policies.** Oil revenue volatility could pose challenges to monetary policy implementation and financial stability. As noted in IMF 2016, effective liquidity management and supportive financial policies could mitigate oil price risks to the financial system. For the UAE, the CBU should use its available instruments as needed to support healthy liquidity, and avoid unwarranted tightening of monetary conditions. Going forward, it is important to strengthen the policy framework through enhancing liquidity forecasting and management and further developing money and debt markets. Increased domestic sovereign issuances would help deepen the domestic debt market, and provide the banks with a new instrument to manage liquidity. In addition, timely implementation of the CBU's plans to strengthen the regulatory and supervisory frameworks could help mitigate potential risks to financial stability.

Private Sector Development

14. Strengthening competitiveness will support private sector development. Despite strengths in some price and non-price competitiveness factors, rising labor costs coupled with declining productivity do not bode well with the development of competitive exporting industries. Developing such industries will require continued reforms to improve lagging areas of business environment such as starting a business, getting credit, enforcing contracts, streamlining exports procedures and resolving insolvency.

15. Easing private sector access to finance and improving legal rights are critical to private sector development. Special attention should be devoted to ease SMEs' and startups' access to finance. Development of alternatives to traditional bank finance, such as private equity, leasing and factoring, and less stringent requirements for listing on stock markets and asset-securitization would ease some financing constraints. The authorities' initiatives such as the launching of the SME council in 2015 to speed up the implementation of the 2014 SME law, and the creation of the Khalifa Fund are welcome steps to ease access to finance. However, the inadequacy of the insolvency framework hurts SMEs access to finance and needs to be tackled by a swift approval of the bankruptcy law that also decriminalizes bankruptcy and facilitates debt restructuring. Public funds should focus on providing guarantees and support services to SMEs and startups instead of direct lending. Efforts to strengthen the financial infrastructure, notably through broader coverage of the credit bureau, should be pursued.

16. Promoting a culture of entrepreneurship would further support economic diversification. Entrepreneurship is best encouraged with strong institutions, supportive financial environment, and appropriate fiscal policies. Targeted public support to SMEs and startups to incubate businesses, access markets and raise productivity could help promote such culture. To reach the government 2021 target of increasing the SMEs' contribution to non-oil GDP to 70 percent, it should create incentives for nationals to favor entrepreneurship instead of public employment or rent-seeking. Public employment and labor market policies aiming at controlling the size and wages of the civil service and improving the skills-job match could help spur private sector job creation. This is critical to private sector competitiveness and attractiveness for nationals. In addition, reforms to the business environment encouraging new entry as well as an orderly exit as needed can also be supportive.

Transitioning Towards a Knowledge-Driven Economy

17. Transitioning toward a knowledge-driven economy would raise productivity and growth. Supportive policies include those that facilitate technology transfers, improve access to international markets and global supply chains, foster competition, upgrade the quality of education, and continue to harness innovation. In addition, promoting the diffusion and use of new technology, information and communication including through electronic and mobile government services, as increasingly done by the authorities, will also be crucial.

18. Facilitating technological transfers through further openness to foreign direct investment, trade and migration of highly skilled people will be key. FDI liberalization can facilitate the adoption of existing technologies, promote technology spillovers, and boost productivity. For example, countries' experiences showed that dismantling FDI's entry barriers and regulatory restrictions in the services sector tend to be associated with higher productivity in downstream manufacturing sectors. In this context, the new investment law should further ease restrictions on FDI while avoiding to set thresholds in terms of capital to benefit from the new regime, which could reduce attractiveness for innovative SMEs and startups. Also easing migration policies for highly-skilled workers could facilitate technological transfers. Further trade openness could boost productivity by strengthening competition, improving efficiency and resource allocation, and fostering innovation as well as the ability to absorb new technologies.

19. Fostering competition. Promoting a competitive business environment, by lowering barriers to entry and reducing the public sector footprint, will also raise efficiency and boost productivity growth. Reducing the dominance of the public sector, in particular the Government related entities (GRE), and raising their efficiency will also be critical for reducing cost of businesses. Product market reform, including lowering the anticompetitive barriers to entry in product and services sectors, reducing administrative burdens, and simplifying regulation can boost productivity by strengthening firms' incentive to reduce inefficiency and innovate, encouraging new entry, and improving the use and allocation of factors of productions.

20. Innovation policies are important for productivity. Boosting innovation is key for productivity gains and could be supported through higher R&D spending, developing high tech industries, continuing expanding linkages between firms and universities, improving the framework for intellectual property rights, more integration to global supply chains and adequate financing. In the latter area, authorities' plans to set up an innovation fund are welcome and could be used to provide seed money for innovative ideas, and need to be accompanied by private sector funding through venture capital and crowd-funding. Policies aimed at boosting innovation include fiscal instruments—such as R&D subsidies, to correct underinvestment in private R&D investment—as well as policies to increase the attractiveness of FDI.

21. Upgrading the quality of education is essential for a knowledge driven economy. It is also essential to continue enhancing the quality and relevance of education and training for nationals to build high levels of productivity into the future. In addition, developing education plans for employment and further integrating the soft skills and re-skilling in the curricula are important. Mitra et al (2016) found that diversifying the labor force, though higher female labor force participation has been proven to also foster innovation, productivity and job creation. Key policies such as targets, flexible work arrangements, provision of childcare services and active labor market programs could help increase women's participation in the workforce.

Developing Exporting industries

22. Pursuing further economic diversification will require developing a more sophisticated and diversified tradable sector. Cherif et al noted that it takes about 20 to 30 years for successful

oil exporters (Indonesia, Malaysia, and Mexico) to develop sophisticated export industries. For example, although Malaysia laid the foundation of its export strategy in the 1970's and experienced rapid growth in export sophistication over 1980-90, it took 20 years to reach the level of sophistication of advanced economies. Therefore, it is important to pursue an export-led diversification strategy and to put in place a conducive environment for exports. Policies include better access to international markets, trade facilitation to bring down export costs, tailored export promotion services such as marketing, standardization, financing and guarantees.

23. Upgrading export quality and sophistication will require a mix of vertical and horizontal diversification, as well as integrating with global value chains. Cherif et al highlighted that countries' experiences "show that diversification policy often followed a mix of vertical diversification in existing export industries and horizontal diversification in suppliers' clusters for those industries, industrial beachheads into high-value-added and innovation-driven sectors. A very competitive, productive, open and knowledge-driven economy will be appealing to such transformation.

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