June 2012
IMF Country Report No. 12/136

United Arab Emirates: Selected Issues and Statistical Appendix

This Selected Issues and Statistical Appendix Paper on the United Arab Emirates was prepared by a staff team of the International Monetary Fund as background documentation for the periodic consultation with the member country. It is based on the information available at the time it was completed on April 27, 2012. The views expressed in this document are those of the staff team and do not necessarily reflect the views of the government of the United Arab Emirates or the Executive Board of the IMF.

The policy of publication of staff reports and other documents by the IMF allows for the deletion of market-sensitive information.

Copies of this report are available to the public from

International Monetary Fund • Publication Services
700 19th Street, N.W. • Washington, D.C. 20431
Telephone: (202) 623-7430 • Telefax: (202) 623-7201
E-mail: publications@imf.org Internet: http://www.imf.org

International Monetary Fund
Washington, D.C.

INTERNATIONAL MONETARY FUND

UNITED ARAB EMIRATES

Selected Issues and Statistical Appendix

Prepared by Ananthakrishnan Prasad, Zsofia Arvai, Ghada Fayad,
Arthur Ribeiro, and Renas Sidahmed

Approved by the Middle East and Central Asia Department

April 27, 2012

Contents Page

International Spillovers and Vulnerabilities to a Worsening Global Financial Outlook

Executive Summary 3

I. Introduction 4

II. Impact on Stock Markets....5

III. CDS Spreads and Financial Contagion to Dubai's Sovereign Spreads 6

IV. Spillovers to the Banking System....8

A. Financial Interconnectedness and Global Spillovers to the Banking System....9
B. Vulnerability to a Worsening Global Outlook 15

V. Spillovers to the Corporate Sector 18

A. Interest-Servicing Capacity of Nonfinancial Corporates 18
B. Vulnerability to Interest Rate and Income shocks 21

VI. Conclusion 22

References....24

Tables
1. Correlations with Stock Market Indices 6
2. Stock Market Volatilities 6
3. Bank Performance Indicators, 2008–11....9
4. Co-VaR Estimates for UAE Banks, 2008–10....14
5. Change in Co-VaR Estimates for UAE Banks, 2008–10 14
6. Non-resident Liquidity Withdrawal Scenario....15
7. Change in Net Exposure of Banks to Government and Public Institutions, 2008–11....17
8. Stress Testing for UAE Banks 18
9. Interest Coverage Ratio, Q3 2011....20
10. Comparison of ICRs 20
11. ICR Performance Under an Interest Rate Shock 21

12. ICR Performance Under Income Shocks 21

Figures

1. Bank Exposures to Europe, March 2011 8
2. United Arab Emirates: Banking System, 2010 10
3. Expected Default Frequencies of Local UAE Banks, 2008–10 11
4. International Spillovers to UAE Banks: Effect of Distress in Europe and the United States, 2008–10 12
5. Bank Stability and Probability of Default of Local UAE Banks, 2008–10 13
6. UAE Nonfinancial Corporate Sector, 2007–11 19

Appendix

I. Technical Appendix 23

Statistical Appendix

1. Sectoral Origin of GDP at Current Prices, 2003–10 25
2. Use of Resources at Current Prices, 2003–10 25
3. Oil and Gas Production, Exports, and Prices, 2003–11 27
4. Consumer Price Index by Major Components, 2010–11 28
5. Consolidated Government Finances, 2003–11 29
6. Federal Government Financial Operations, 2003–11 30
7. Federal Subsidies and Transfers, 2003–11 31
8. Abu Dhabi Fiscal Operations, 2003–11 32
9. Abu Dhabi Development Expenditures, 2003–11 33
10. Abu Dhabi Government Domestic Aid, Grants, Subsidies and other Transfers, 2007–11 33
11. Dubai Government Operations, 2003–11 34
12. Monetary Survey, 2003–11 35
13. Factors Affecting Domestic Liquidity, 2003–11 36
14. Summary Accounts of the Central Bank, 2003–11 37
15. Balance Sheets of Commercial Banks, 2003–11 38
16. Banking System Structure, 2003–11 39
17. Sectoral Loan Concentration, 2003–11 40
18. Financial Sector Indicators, 2004–11 41
19. Banking System Income Statement and Profitability, 2003–11 42

United Arab Emirates—International Spillovers and Vulnerabilities to a Worsening Global Financial Outlook[1]

Executive Summary

This paper looks at the global spillovers to the UAE financial system. It concludes that although financial vulnerabilities of the United Arab Emirates (UAE) have decreased since the 2008 global real estate collapse, given the UAE's interconnectedness, it remains exposed to global financial conditions.

The analysis of the impact of external financial conditions is structured in four main parts: the domestic equity market, sovereign risk, the banking system, and the corporate sector. The Government-Related Entity sector is not covered in light of insufficient data.

The paper finds an uneven degree of spillovers to the different segments of the UAE financial system. Regarding domestic equity markets, the combined market capitalization losses in the Abu Dhabi and Dubai stock exchanges between September 2008 and end-March 2012 exceeded $100 billion. Equity markets have become significantly more correlated with global markets since September 2008, and market volatility increased after the crisis, but seemed to have settled down since the beginning of 2011. Market perceptions of sovereign default risk remain elevated and linked to international financial market conditions, but less so than in 2008/09. CDS market exposure to financial distress abroad has increased again in recent months and can be traced to developments in Europe.

Regarding the banking system, the paper finds that its level of capitalization and profitability provides some comfort. While moderately exposed to Europe, stress tests show that the aggregate banking system has adequate liquidity and capital buffers to withstand substantial shocks. However, these stress tests do reveal differences in liquidity between banks, and the strength of capital buffers is mitigated by some degree of concentration risks in the system. An interconnectedness analysis based on individual banks' stock price data shows that on aggregate, markets currently do not anticipate bank defaults or systemic events in the UAE banking system, though banks are perceived as affected by spillovers from advanced financial markets. The perceived vulnerability to local banking system conditions varies substantially among individual banks. Regarding the situation of the nonfinancial corporate sector, the paper identifies signs of financial improvement, though stress testing indicates continued vulnerabilities to global financial conditions, particularly in the real estate sector.

In view of the UAE's financial system remaining highly integrated and exposed to global financial developments, the paper underscores the need for the central bank to continue to closely monitor the liquidity of individual banks and encourage them to proactively manage liquidity risks. There is also a need to mitigate increasing credit concentration, recognize NPLs fully, and continue to provision adequately. Enabling a more robust risk assessment culture, conducting regular stress testing of banks, and strengthening the framework for an early warning system would help further mitigate risks to the banking system and strengthen financial stability.

---

[1] This was authored by Ananthakrishnan Prasad, Ghada Fayad, Arthur Ribeiro, and Renas Sidahmed.

I. Introduction

1. **As the global economic crisis took hold, the GCC countries, including the UAE, were affected through trade and financial channels.** Symptoms of excessive risk-taking were evident in high credit growth, booming real estate markets, and large capital inflows. More generally, the financial crisis brought attention to the extraordinary vulnerability of the global financial system to disruptions in wholesale funding of banks. GCC countries underwent reversals of speculative capital inflows. These developments tightened liquidity conditions and affected investor confidence, and were further exacerbated by the Lehman Brothers collapse in September 2008 and the ensuing global liquidity shortage and deleveraging. GCC financial sector imbalances became evident, especially in the United Arab Emirates (UAE), Kuwait, and Bahrain, given these countries' close linkages with global equity and credit markets.

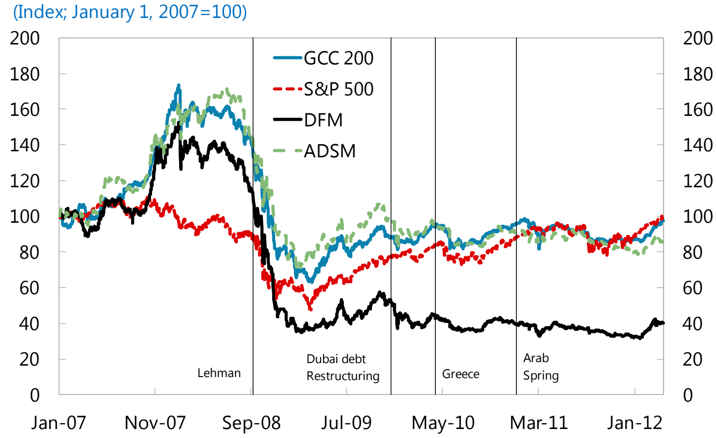
2. **Since 2008, the authorities in the UAE have taken measures to strengthen some of the weak links in the system.** Banks have been recapitalized and the capital adequacy ratio of the banking system has strengthened to 21 percent. Weaker financial institutions, including banks, have been merged with stronger institutions. Although banks have higher nonperforming loans (NPLs) than they did in the pre-crisis period, they became more risk-averse in their lending. There has been progress in the restructuring of GRE debt, including Dubai World and Dubai International Capital, an arm of Dubai Holding, with several other corporate/GRE debts under discussion. External rollover needs are, however, very large, with about $32 billion of sovereign and GRE debt set to mature in 2012, of which $15 billion is for Dubai.

3. **A marked spillover of the current crisis of peripheral Euro countries into the core euro area and global financial markets could have major financial repercussions for the UAE and the GCC region, with particular contagion risks for economies that depend on foreign financing and that have financial links to Europe**. This paper assesses the vulnerabilities of the UAE financial system—equity market, sovereign spreads, banking system, and the corporate sector—to external financial conditions. Specifically, the analysis will focus on the impact of global financial developments on the UAE financial system; and assess the spillovers from the global financial system to the UAE's sovereign risk and to the nonfinancial corporate sector. Section II will study the impact on stock markets, Section III will focus on the contagion to Dubai's sovereign spreads, Section IV will assess the spillovers to the banking system, and Section V will deal with the nonfinancial corporate sector. The final section will draw conclusions from the analysis.

II. Impact on Stock Markets

4. **The UAE equity markets have been affected by spillovers from U.S. equity markets and by the burst of the domestic real estate bubble.** Studies have found that individual GCC markets demonstrated strong cross effects from global markets. For instance, Saadi Sedik and Williams (2011) found that the coefficient of shocks between S&P 500 and the UAE was the largest (0.23) among the GCC markets.[2] Valuations in the Abu Dhabi and Dubai equity markets have not recovered since September 2008, notwithstanding some improvement in 2009. The combined market capitalization losses in the Abu Dhabi and Dubai stock exchanges were $102 billion between September 1, 2008 and March 31, 2012, of which the capitalization loss in the Dubai stock exchange was $59 billion. Volatility in the stock markets increased after September 2008. The average correlation of the Abu Dhabi and Dubai markets with the global markets turned positive in the period after September 2008, as compared to a negative correlation during the period between January 1, 2007 and September 9, 2008. Market volatility increased after the crisis, but seemed to have settled down since the beginning of 2011.

U.A.E. Stock Market Indices, 2007–12
(Index; January 1, 2007=100)



Source: Bloomberg.

[2] The paper explores whether volatility from U.S. and regional markets had a significant effect on conditional volatility of stock prices in Gulf equity markets.

Table 1. Correlations with Stock Market Indices

	Jan. 1, 2007 to Sept. 9, 2008	Sept. 10, 2008 to end-Dec. 2010	Jan. 1, 2011 to end-Mar. 2012
Dubai			
Correlation with S&P 500	-0.47	0.12	0.57
Abu Dhabi			
Correlation with S&P 500	-0.59	0.36	0.27

Source: IMF staff calculations.

Table 2. Stock Market Volatilities

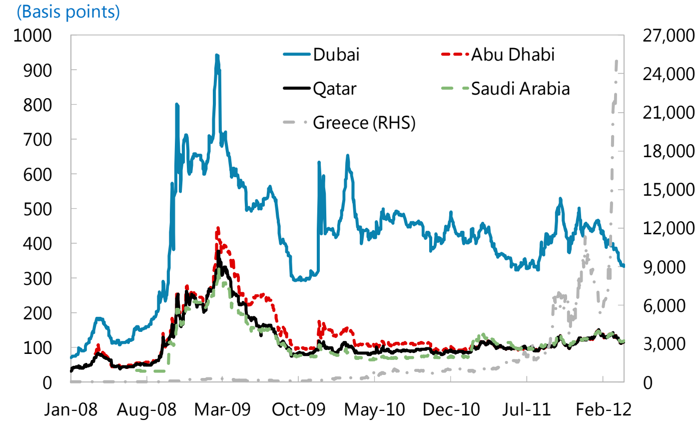
	Jan. 1, 2007 to Sept. 9, 2008	Sept. 10, 2008 to end-Dec. 2010	Jan. 1, 2011 to end-Mar. 2012
Dubai			
Standard deviations	1.37	2.31	1.08
Average returns	0.04	-0.14	-0.05
Abu Dhabi			
Standard deviations	1.07	1.48	0.57
Average returns	0.05	-0.09	-0.04

Source: IMF staff calculations.

III. CDS Spreads and Financial Contagion to Dubai's Sovereign Spreads

5. **Market perceptions of sovereign default, as reflected in CDS spreads, show persistent uncertainty about Dubai.** The correction in local real estate prices, which had begun in the summer of 2008, intensified after the global crisis. Heightened risk aversion was particularly apparent in Dubai, where the CDS spreads widened to almost 1000 basis points during the crisis. Credit rating agencies took several negative rating actions on UAE banks, reflecting a tougher operating environment that challenged the profitability and the asset quality of banks. After their initial rise in late 2008 and early 2009, CDS spreads declined markedly, indicating an improvement in global investor sentiment. Nevertheless, CDS spreads on the Dubai government have remained elevated, reflecting developments related to the highly leveraged Dubai government-related

CDS Spreads, 2008–12
(Basis points)



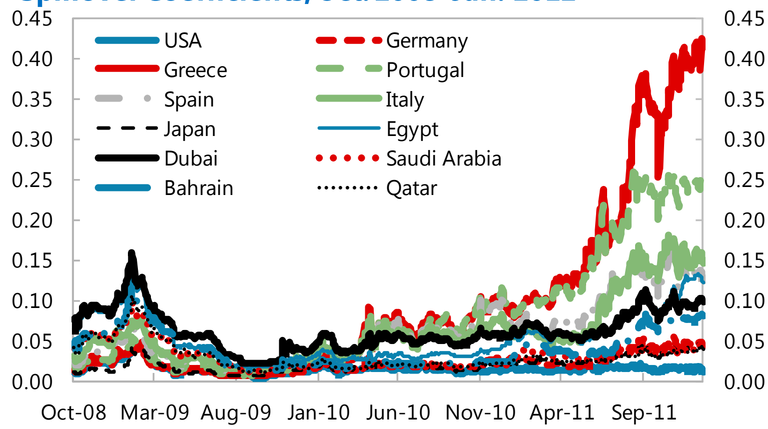
Source: Markit.

entities, including Dubai World; the announcement in November 2009 of a debt standstill by Dubai World resulted in a sharp increase in market perceptions of the default risk for Dubai-related entities and negative—but rapidly dissipating—spillovers throughout the region.

Financial contagion to Dubai's sovereign risk

6. **The debt crisis in the euro area has generated intense distress in international financial markets.** This distress has been particularly evident in sovereign CDS prices. The dynamics of the distress dependency between different sovereigns—the probability that one country's default will cause sovereign distress in another—can be derived from CDS data. The methodology is based on estimating empirically the linkages between different countries using the sovereign CDS spreads as inputs. A measure of distress dependence, the Spillover Coefficient (SC), is constructed to capture the probability of distress of a country, conditional on other countries becoming distressed. The SC measures the probability of a sovereign default in one country, given default in the other countries in the group.[3] It can thus be used to estimate cross-country contributions to financial stress. For each country A_i, the SC is computed using the formula:

Spillover Coefficients, Oct. 2008–Jan. 2012



Source: IMF staff calculations.

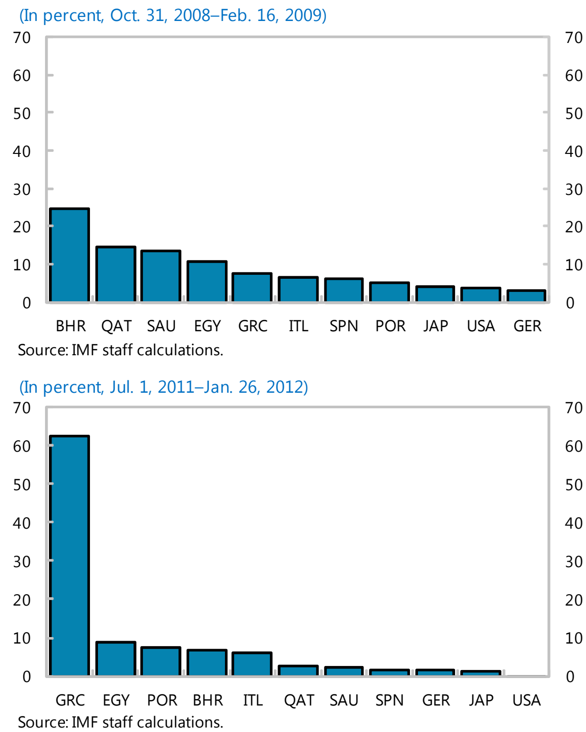
$$SC(A_i) = \Sigma\, P(A_i / A_j) \cdot P(A_j) \quad \text{for all } j \neq i$$

which is the weighted sum of the probability of distress of country A_i, given a default in each of the other countries in the sample. This measure of distress dependence is weighted by the probability of default of each of these countries.

[3] Using the methodology of Caceres, Guzzo, and Segoviano (IMF WP 10/120), a measure of the vulnerability of one country to contagion from a group of countries—the Spillover Coefficient (SC)—is calculated, based on the CDS data of the countries in the group (see also Chapter V of *Gulf Cooperation Council Countries: Enhancing Economic Outcomes in an Uncertain Global Economy*).

7. **While the estimated level of financial spillovers to Dubai is once again increasing, it is still below 2008–09 levels.** European countries–Greece in particular–have been key contributors. The percentage contribution to the change in a country's SC is a measure of market-based contagion from the other countries in the sample. Since July of last year, when the euro area debt crisis intensified, Greece has been identified as the overwhelming source of contagion risk for Dubai, accounting for more than 60 percent of the total measured contagion from the countries in the sample. Italy, Portugal, and Spain are also contributors: these four countries explain close to 80 percent of the contagion risk to Dubai. This concentration stands in contrast to the period following the collapse of Lehman, where the contribution to financial stress was much more evenly spread across countries, with neighbors contributing stress in proportion to the strength of their regional ties.

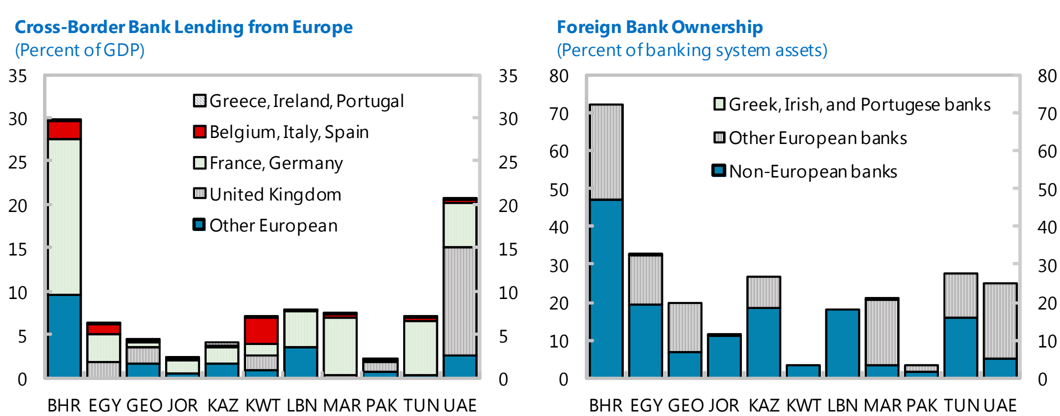
Contribution to Changes in Dubai's Spillover Coefficient



IV. Spillovers to the Banking System

8. **The UAE banking system is moderately exposed to Europe.** Foreign liabilities of the banking system are about 19 percent of total liabilities. Lending from EU periphery banks to the UAE is very small, but lending by banks from core Europe is considerable. The size of European subsidiaries is small. There is no EU periphery country ownership of UAE banks, though ownership from other European countries is about 20 percent of total banking system assets.

Figure 1. Bank Exposures to Europe, March 2011



Sources: BIS; national authorities; market sources; and IMF staff calculations.

9. **Banks continue to be profitable.** Overall the profitability of national banks, in terms of return on assets, remained stable at around 1.5 percent between 2007 and 2011, and the return on equity fell from 14.1 percent in 2007 to 11.4 percent in 2011, in part due to substantial increase in equity in response to the 2008/09 crisis. NPLs increased, particularly because of loan concentration in real estate, reflecting higher provisioning needs.

Table 3. Bank Performance Indicators, 2008–11[1]

(Percent)

	2007	2008	2009	2010	2011
Bank return on assets	1.5	1.4	1.4	1.3	1.5
Bank return on equity	14.1	13.0	10.9	10.4	11.4
Bank nonperforming loans to total loans	2.6	2.3	4.3	5.6	6.2
Bank provisions to nonperforming loans	90.1	77.7	64.4	68.0	67.8

Source: National authorities .

[1] National banks.

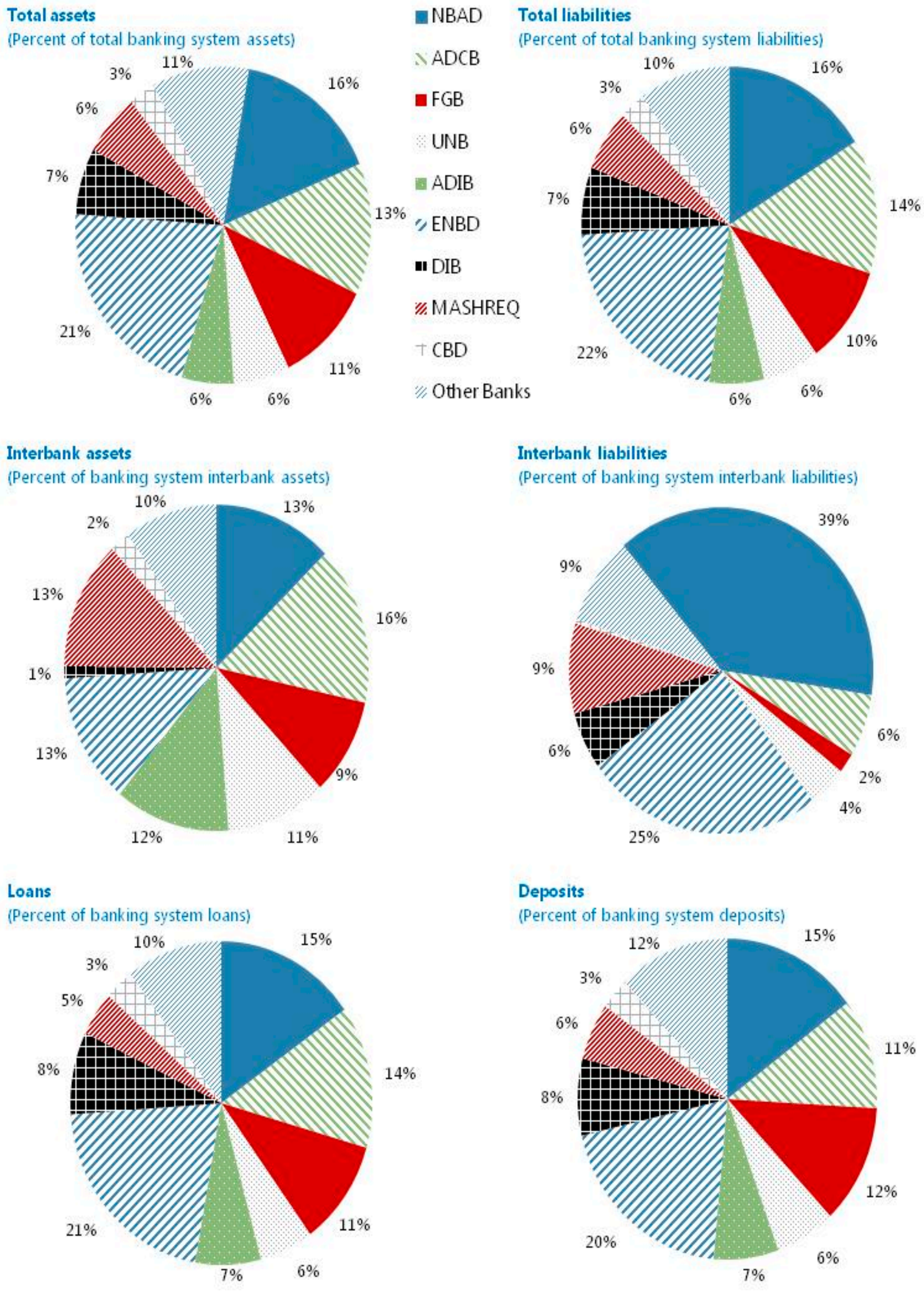
A. Financial Interconnectedness and Global Spillovers to the Banking System

10. **This section assesses the performance of and interconnectedness among banks in Dubai and Abu Dhabi as well as their exposure to spillovers from the global crisis during the period 2008–10.**[4] The analysis is divided into two parts. The first part focuses on international spillovers from financial sectors in Europe and the United States to the UAE banking system. The analysis identifies the advanced economies whose financial sectors were the most systemically important to the UAE banking system, in terms of the threat of distress these sectors pose to banks in the UAE. The second part analyzes the interconnectedness among banks in the UAE, by identifying the local banking system's most vulnerable and most systemically important banks. Including both the international 'Lehman collapse' and the internal 'Dubai World default' events in the analysis allows for the disentanglement of domestic from international pressures and the assessment of the overall health of the banking sectors of each of the two Emirates. The banks included for Dubai, namely Dubai Islamic Bank (DIB), Emirates NBD (ENBD), Mashreq Bank (MB), and Commercial Bank of Dubai (CBD), are the four largest listed banks in terms of their total assets, constituting 92 percent of total banking system assets in Dubai and about 46 percent of UAE GDP in 2010. All five listed banks for Abu Dhabi, namely Abu Dhabi Commercial

[4]Daily data on Expected Default Frequencies (EDFs) of financial sectors in advanced economies have been obtained from Moody's KMV database. Since the database does not include banks in the UAE, EDFs for Dubai and Abu Dhabi banks have been constructed using Merton's structural approach to assessing default risk (Merton, 1974). Banks' distance to default is defined as $\frac{Market\,Value of Assets - Default\,po\text{int}}{Market\,Value of Assets * Assets\,Volatility}$. This ratio represents the difference between the expected value of the assets at the ultimate horizon and at the point of default, measured in number of standard deviations of the asset return. Distance to default is then converted into default frequencies.

Bank (ADCB), National Bank of Abu Dhabi (NBAD), First Gulf Bank (FGB), Union National Bank (UNB), and Abu Dhabi Islamic Bank (ADIB), are included in this analysis.[5]

Figure 2. United Arab Emirates: Banking System, 2010

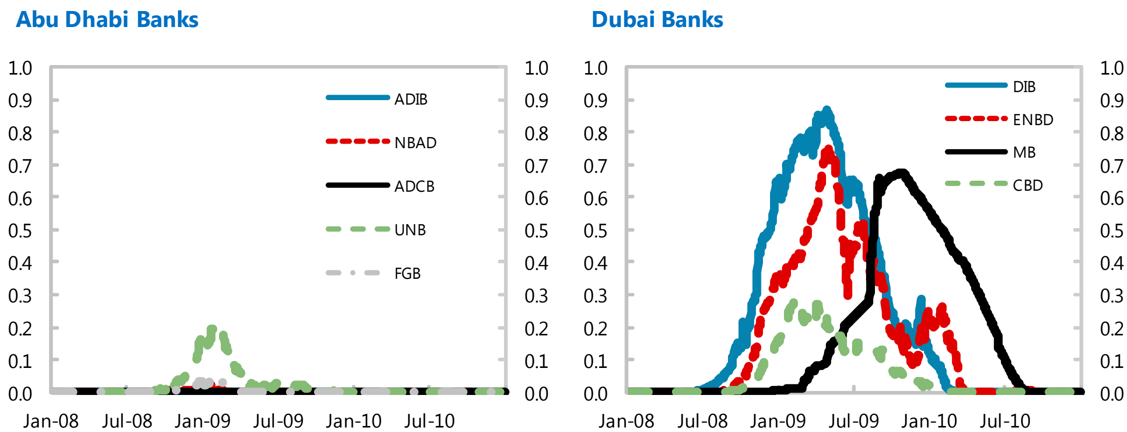


Source: Zawya.

[5] Abu Dhabi banks' total assets constituted 63 percent of UAE GDP in 2010. For the purpose of this section, the above identified banks in Abu Dhabi and Dubai are interchangeably used as UAE banks or UAE banking system.

11. **Expected probabilities of default for Dubai banks started to rise quickly after Lehman (September 2008), and peaked for all banks except MB in early 2009**. The second peak (for all banks except CBD) happened around Dubai World (November 2009). Default probabilities of Abu Dhabi banks are overall significantly lower when compared to those of Dubai banks across the whole period. For Abu Dhabi banks, the data identify a Lehman effect and a minor Dubai World effect only for UNB.

Figure 3. Expected Default Frequencies of Local UAE Banks, 2008–10



Source: IMF staff calculations.

Spillovers from the global financial system

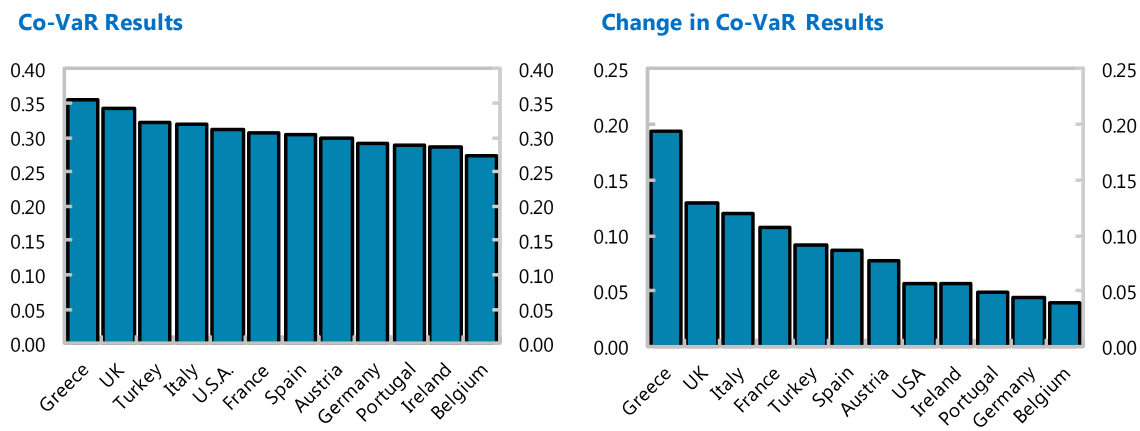
12. **The conditional Value at Risk (Co-VaR) model has been applied to measure spillover effects.**[6] Combining the above data on default probabilities of Dubai and Abu Dhabi banks with default probabilities of financial sectors in advanced economies allows a determination of the relative systemic importance of advanced economy financial sectors for UAE banks. We construct two measures of spillovers to UAE banks. The Co-VaR is defined as the value at risk of the UAE banking system, given financial distress in a specified advanced economy financial sector; and the change in Co-VaR compares this Co-VaR measure to its corresponding value when the advanced economy financial sector is not in distress.

13. **For the period 2008–10, Greece's financial sector is identified as affecting the value at risk of the UAE banking system the most with respect to both Co-VaR and Δ Co-VaR measures.** This means that (i) the UAE banking system average value at risk (measured at the 90th percentile EDF) increases the most when Greece's financial sector is in distress compared to when other advanced economies' financials sectors are distressed, and (ii) Greece contributes the most to overall systemic risk in the UAE. Both measures also show

[6] For more details on the Co VaR model, please refer to the Technical Appendix.

the United Kingdom, Turkey, Italy, France, Spain, and the United States as important sources of spillovers to the UAE banking system.

Figure 4. International Spillovers to UAE Banks: Effect of Distress in Europe and the United States, 2008–10



Source: IMF staff calculations.

14. **The general interpretation of the results should therefore be that the distress in the global financial system has spillover effects on the UAE banking system.** It is, however, worth noting that the ranking of advanced economies changes depending on the time period covered. For instance, if we restrict the period to a few months before and after Lehman collapsed, the United States moves to rank in the top two countries on both measures. Further, even the choice of specific countries could change depending on which countries' banking systems are in crisis.

Interconnectedness in UAE banking system

15. **The strength of the financial interlinkages across UAE banks is assessed by quantifying the level of distress that a bank can pose to another bank or to the whole system.** Using EDF data for UAE banks, we apply the Distress Dependence methodology[7], which conceptualizes the banking system as a portfolio of banks comprising the core, systemically important banks in any country, and computes banks' stability measures (BSMs). These measures embed the banks' distress interdependence structure, capturing not only linear but also nonlinear distress dependencies among the banks in the system. Based on banks' individual EDFs, which change over time, BSMs incorporate changes in distress dependence that are consistent with the economic cycle. The two measures we use are: Banks Stability Index (BSI) and banks Joint Probability of Default (JPoD).

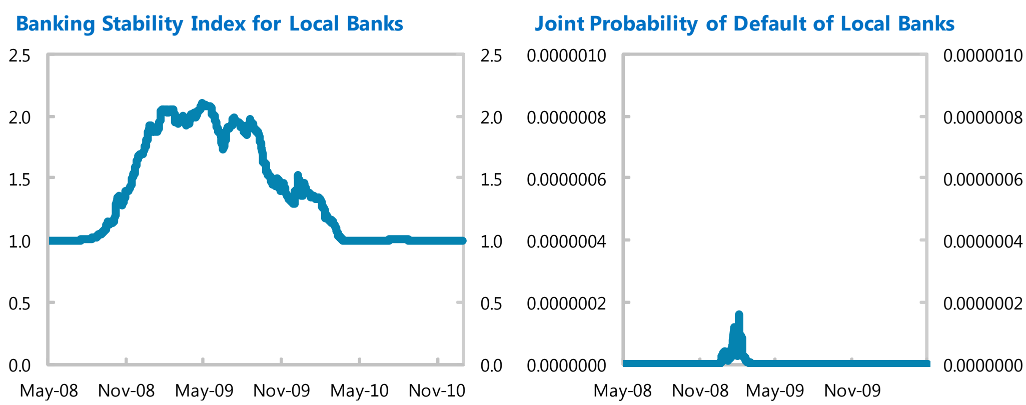
---

[7] Based on Segoviano (2006) Consistent Information Multivariate Density Optimizing (CIMDO) methodology for sovereign distress and Segoviano and Goodhart (2009), which applies the CIMDO approach to the banking system. We use MCM's Banking Stability Measurement software to conduct this analysis.

16. **Currently, the UAE banking system does not show any signs of distress, based on the BSI, which provides the expected number of bank defaults in the UAE banking system conditional on the default of at least one bank.** Since September 2008, the BSI started rising, then exhibited two peaks: a major peak around the global financial crisis post-Lehman collapse (Jan–Sept 09) and a minor one around Dubai World (Dec 09–Feb10). The first peak reached two, indicating that two banks might have defaulted if even one bank had defaulted. The BSI then converged to one, the precrisis level, by mid-2010. This convergence indicates the existence of financial interlinkages among UAE banks, even though the systemic risk that a bank can pose to the whole system remains limited.

17. **The probability that all the banks in the system would experience large losses simultaneously, as measured by JPoD measures, is very low.** The importance of this measure stems from the fact that during periods of distress, the banking system as a whole may experience nonlinear increases, and increases that are larger than those experienced by the EDFs of individual banks, due to bank linkages. These include direct linkages such as contagion after idiosyncratic shocks, affecting interbank deposit markets and participation in syndicated loans, or indirect linkages through negative systemic shocks, affecting lending to common sectors and proprietary trades. The probability that all nine UAE banks would default jointly is indeed very low (near zero) across the whole time period.

Figure 5. Bank Stability and Probability of Default of Local UAE Banks, 2008–10



Source: IMF staff calculations.

18. **The distress dependence across banks rises during times of crisis, indicating that systemic risks, as implied by the JPoD and the BSI, rise faster than idiosyncratic risks.** Our BSI and JPoD analysis revealed that movements in both measures coincide with events that were considered relevant by the markets on specific dates; however, this distress dependence, as measured by the BSI, has declined significantly in the aftermath of global and internal crises. The JPoD of the banking system has been near zero during the whole period.

19. **The Co-VaR methodology can also be used to analyze distress between specific pairs of UAE banks.**[8] Dubai and Abu Dhabi banks' predicted pairwise conditional default probabilities can provide important insights into (i) interlinkages and the likelihood of contagion between the banks in the system, and (ii) the bilateral exposures of banks to each other. These insights can help to determine the systemically important banks as well as the system's most vulnerable banks.

Table 4. Co-VaR Estimates for UAE Banks, 2008–10

	Bank 1	Bank 2	Bank 3	Bank 4	Bank 5	Bank 6	Bank 7	Bank 8	Bank 9	Vulnerability
Bank 1	.	0.87	0.87	0.94	0.88	0.96	0.82	0.93	1.00	0.91
Bank 2	0.67	.	0.61	0.73	0.61	0.53	0.52	0.60	0.56	0.60
Bank 3	0.76	0.72	.	0.73	0.63	0.65	0.65	0.67	0.65	0.68
Bank 4	0.26	0.27	0.26	.	0.37	0.36	0.20	0.27	0.33	0.29
Bank 5	0.00	0.00	0.00	0.00	.	0.00	0.00	0.00	0.00	0.00
Bank 6	0.01	0.01	0.01	0.01	0.01	.	0.01	0.01	0.01	0.01
Bank 7	0.00	0.00	0.00	0.00	0.00	0.00	.	0.00	0.00	0.00
Bank 8	0.18	0.20	0.14	0.16	0.22	0.20	0.12	.	0.15	0.17
Bank 9	0.04	0.03	0.04	0.03	0.04	0.03	0.03	0.03	.	0.03
Importance	0.24	0.26	0.24	0.33	0.34	0.34	0.29	0.31	0.34	

Note: Each cell in the table reports the predicted 90th percentile default probability of the bank listed in the rows conditional on the the bank listed in the columns being in distress (i.e. at its 90th percentile value). For instance, column 1 row 2 suggests that the predicted 90th default probability of Bank 2, conditional on Bank 1 being in distress, is 0.67.
For each column, the average represents the systemic importance of the bank in the column (the average of default probabilites of each other bank, conditional on column bank being in distress) . For each row, the average value represents the vulnerability of the bank in the row (the average of its conditional default probabilities, given that each of the other banks in the system is separately in distress).

Source: IMF staff calculations.

Table 5. Change in Co-VaR Estimates for UAE Banks, 2008–10

	Bank 1	Bank 2	Bank 3	Bank 4	Bank 5	Bank 6	Bank 7	Bank 8	Bank 9	Vulnerability
Bank 1	.	0.58	0.14	0.74	0.16	0.30	0.18	0.35	0.35	0.35
Bank 2	0.45	.	0.08	0.53	0.08	0.02	0.02	0.15	0.06	0.17
Bank 3	0.17	0.15	.	0.16	0.07	0.09	0.05	0.10	0.04	0.10
Bank 4	0.20	0.19	0.04	.	0.22	0.20	0.05	0.15	0.18	0.15
Bank 5	0.00	0.00	0.00	0.00	.	0.00	0.00	0.00	0.00	0.00
Bank 6	0.01	0.01	0.01	0.01	0.01	.	0.01	0.01	0.01	0.01
Bank 7	0.00	0.00	0.00	0.00	0.00	0.00	.	0.00	0.00	0.00
Bank 8	0.14	0.14	0.02	0.14	0.17	0.16	0.09	.	0.13	0.12
Bank 9	0.03	0.02	0.03	0.03	0.03	0.03	0.03	0.03	.	0.03
Importance	0.12	0.14	0.04	0.20	0.09	0.10	0.05	0.10	0.10	

Note: Each cell in the table reports the difference between: the predicted 90th percentile default probability of the bank listed in the rows conditional on the bank listed in the columns being in distress (i.e., at its 90th percentile value), and its predicted default probability conditional on the bank listed in the columns being at its median state (i.e. ,not in distress).

Source: IMF staff calculations.

[8] Regressions of UAE banks' EDFs on each others' also included TED spreads as a common risk factor capturing risk aversion in global financial markets. The TED is the spread between the dollar interbank rate and the corresponding U.S. T-Bill rate.

20. **The results of this analysis show that risk is concentrated in a few banks; these banks will need stronger supervision and closer monitoring of their cross-border and their domestic interbank exposures.** Enabling a more robust risk-assessment culture, conducting regular stress testing of banks, and tailoring the early-warning system to systemwide risks would mitigate risks to the banking system and strengthen financial stability.

B. Vulnerability to a Worsening Global Outlook

21. **The downside risks stem from several sources.** A direct risk emanates from an intensification of the adverse feedback loops between sovereign and bank funding pressures in the euro area, resulting in much larger and more protracted bank deleveraging and sizable contractions in credit and output.

Liquidity risk of banks

22. **While the funding situation of local banks has stabilized, a foreign funding shock could generate some liquidity tightening in the banking sector.** Following a decline since mid-2011, non-government deposits partially recovered in the last quarter of 2011. Stress tests show that the system could address moderate external liquidity shocks with its own resources, and that the stock of central bank foreign currency reserves would be sufficient to address even a strong shock scenario. Nonetheless, because the stress tests are done on the consolidated banking system balance sheet, they do not reveal differences in liquidity between individual banks. In addition, any impact on bank liquidity could be compounded by the possible effects of an oil price shock. Developing domestic debt markets quickly would facilitate banks' liquidity management, and help reduce reliance on foreign funding.

Table 6. Non-Resident Liquidity Withdrawal Scenario[1]

(US$ Billion)

	National Banks	Foreign Banks	All Banks
Total non-resident liabilites	53.1	16.5	69.6
Total liquid non-resident assets	17.5	6.0	23.5
Non-resident liquidity gap (liquid liabilities minus liquid assets) [2]			
Scenario 1	(6.7)	(3.3)	(9.9)
Scenario 2	(1.1)	(2.6)	(3.8)
Scenario 3	6.7	(1.0)	5.7
Memorandum items:			
Available domestic liquid assets [2]	16.2	12.0	28.3
Central Bank foreign currency assets (Dec 2011)	-	-	36.4

Sources : Country authorities; and IMF staff calculations.

[1] Based on position at end-January 2012.

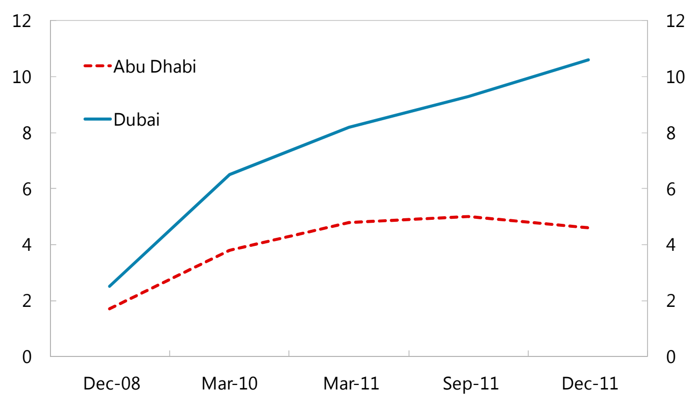
[2] Scenarios assume the withdrawal of all estimated speculative non-resident deposits plus the withdrawal of wholesale funding:
Scenario 1: demand deposits + 20% of time deposits.
Scenario 2: demand deposits + 33% of time deposits + 20% of capital funding.
Scenario 3: demand deposits + 67% of time deposits + 40% of capital funding.

Credit risk of banks

23. **Banks' balance sheet shocks can emanate from firm-specific factors (idiosyncratic shocks) and from macroeconomic imbalances (systemic shocks).** Credit risk increases as the economic situation deteriorates and interest payments rise, a result found in many credit risk models. Overall, the literature on the major economies has confirmed that macroeconomic conditions, external financing conditions, and interest rates matter for credit risk. Espinoza and Prasad (2011) used a dynamic panel over 1995–2008 on about 80 banks in the GCC region, to find that the NPL ratio worsens as economic growth slows and interest rates and risk aversion increase.[9] Conversely, deterioration in banks' balance sheets may feed back into the economy because banks will tighten credit conditions, especially if uncertainties persist as to the valuation of projects and assets**.** In the UAE, the impact of the worsening global macro conditions was transmitted through a fall in real estate prices, and through deterioration in banks' real estate credit portfolios.

24. **The asset quality of UAE banks is expected to deteriorate further.** NPLs increased from 2.5 percent at end-2008 to 10.6 percent in December 2011 in Dubai banks, and from 1.7 percent to 4.6 percent in Abu Dhabi banks; these numbers mask a large share of restructured/rescheduled loans that might still be classified as performing.[10] Debt restructuring and rescheduling deals have alleviated the pressure on GREs and the banking system only temporarily, as a significant amount of Dubai debt will mature in the medium term (2014–15). The number of NPLs is likely to increase this year, including those resulting from the ongoing restructuring of Dubai Holding (about 2.5 percentage points), the potential restructuring of the maturing GRE debt with banks (part of the $32 billion maturing debt in 2012), and the distressed real estate companies.[11] Provisioning needs of banks will likely

Gross Nonperforming Loans, Dec. 2008–Dec. 2011
(Percent of total gross loans)



Source: Country authorities.

[9] The study showed that a temporary decrease of 3 percentage points in non-oil GDP growth would increase NPLs by 0.3 to 1.1 percentage points, depending on the initial level of NPLs (the model is nonlinear and therefore one can only interpret the coefficients using marginal effects at different points of the distribution of NPLs). The effect of a 300 basis point increase in interest rates would be similar.

[10] The extent of rescheduled/restructured loans is not known.

[11] Seven out of the 26 listed companies in the real estate sector (with total liabilities of $12 billion and a total debt of $3 billion) have operating losses or do not have sufficient operating income to service their debt. For an interest rate shock of 500 basis points, an additional two real estate companies could face problems in servicing debt.

increase. The significant increase in renegotiated loans masks the true extent of banks' asset quality problems, as some of these loans may re-emerge as NPLs.

25. **Preliminary stress tests show that the domestic banking system could handle a significant increase in NPLs, though individual banks could fall below regulatory norms**. With an average capital adequacy ratio of 20 percent and a tier 1 capital ratio of 15 percent (Dubai banks: 13 percent), banks maintain significant capital buffers.

- The baseline scenario assumes that NPLs of local banks reach 10 percent on average (compared to 6.8 percent at end-2011), and 15 percent in Dubai banks (10.6 percent at end-2011), reflecting the potential NPLs from the restructuring of Dubai Holding and Dubai Drydocks, loans that have been rescheduled more than once, and losses incurred by some real estate companies in Abu Dhabi.

- The stress scenario models a further 50 percent increase in NPLs, showing that they could increase to more than twice their current levels.

- Under the stress scenario, the overall CAR would fall to 15.9 percent (tier 1 ratio: 10.5 percent), well above regulatory norms of 12 percent and 8 percent, respectively.[12] Nonetheless, the average tier 1 ratio of Dubai banks would fall somewhat below the regulatory minimum of 8 percent.

- The stress test does not capture the weakening of the balance sheets of some individual banks as result of increased exposure to government and public institutions. Systemwide, this exposure increased by Dh 44 billion (3½ percent of GDP) in 2011.

Table 7. Change in Net Exposure of Banks to Government and Public Institutions, 2008–11

(AED Billions)

	2008	2009	2010	2011
Loans to government and public institutions (A)	150.1	189.2	205.6	230.0
Investment in government and official entities bonds (B)			41	53.9
Government deposits (C)	206.8	202.0	187.4	180.6
Net exposure (A + B – C)			59.2	103.3
Change in net exposure in 2011 over 2010				**44.1**

Source: IMF staff calculations based on official data.

[12] The stress test assumes a 90 percent provisioning ratio, a loss-given-default of 100 percent, and zero profits.

Table 8. Stress Testing for UAE Banks

(Percent unless otherwise specified)

	UAE Local Banks		Dubai Banks	
	Regulatory capital	Tier 1 capital	Regulatory capital	Tier 1 capital
CAR (2011)	20.0	15.3	19.7	13.4
NPL ratio (2011)	6.8	6.8	10.6	10.6
Baseline scenario				
NPL ratio[1]	10.0	10.0	15.0	15.0
CAR	19.1	13.8	17.1	10.6
Stress scenario				
(50 percent increase in NPLs from baseline)				
NPL ratio	15.0	15.0	22.0	22.0
CAR[2]	15.9	10.5	14.1	7.4
Memorandum items				
Minimum regulatory capital	12.0	8.0	12.0	8.0

Source: IMF staff estimates and calculations.

[1] Takes into account potential NPLs pertaining to Dubai Holding, Dubai Drydocks, loans rescheduled twice, and other real estate companies in Abu Dhabi that are making losses or do not have debt servicing capacity.
[2] Assumes a provisioning rate of 90 percent on new NPLs.

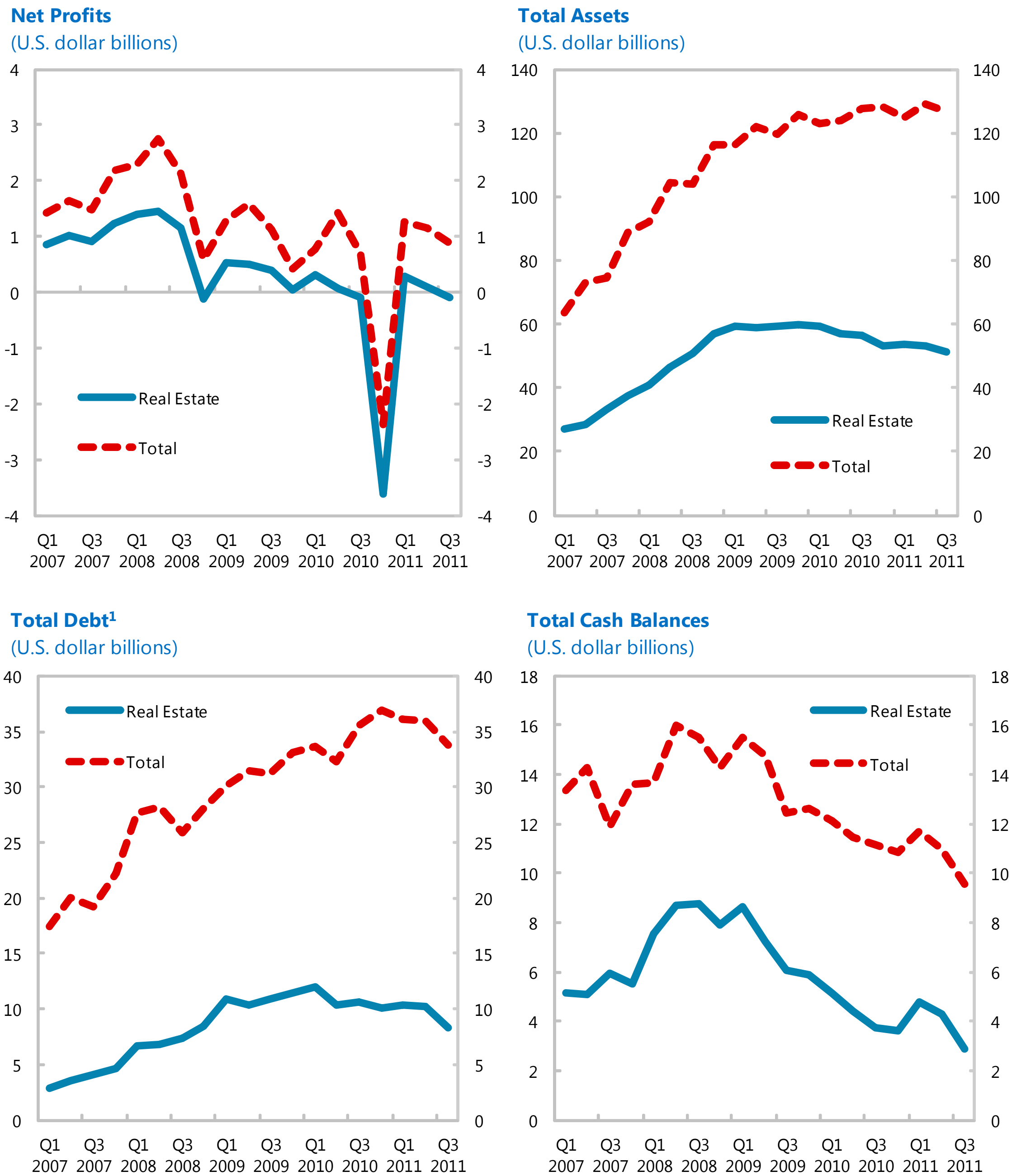
V. Spillovers to the Corporate Sector

A. Interest-Servicing Capacity of Nonfinancial Corporates

26. **The financial performance of listed nonfinancial corporates is showing signs of improvement.** The corporate-financial link is important in the UAE. Total assets of 53 listed corporates decreased slightly to $127 billion at Q3 2011 from $128 billion at Q3 2010. The total assets make up about 37 percent of GDP and 34 percent of bank assets at Q3 2011.[13] Total debt has remained constant at around $34 billion in Q3 2011. Corporate leverage is within reasonable limits, with a debt–equity ratio of 2. Short-term debt constitutes 9 percent of total debt. Profits have remained stagnant at around $1 billion whereas cash balances have decreased from $11.2 billion in Q3 2010 to $9.6 billion in Q3 2010. The net profits and cash position of the real estate sector are still much lower than the pre-crisis period, although there seems to be a slight turnaround in net profits in the first half of 2011, after a loss in 2010.

[13] 18 listed banks from all Emirates. In Q3 2010, total assets made up 36 percent of bank assets and 43 percent of GDP.

Figure 6. UAE Nonfinancial Corporate Sector, 2007–11



Source: IMF staff calculations based on Zawya balance sheets.

[1]Total Debt = short-term debt + portion of long-term debt + long-term debt.

27. **Nonetheless, the corporate sector's debt-servicing ability is still showing some signs of weakness, largely due to the real estate crisis.**[14] On an aggregate level, the interest coverage ratio (ICR) for Q3 2011 is at 2.8, a slight improvement from the 2.7 in Q3 2010. Taking cash cushions into account, the interest-servicing capacity improves considerably to 8.4, but is still lower than in Q3 2010.[15] Out of 53 listed companies, 10 have either operating losses or do not have sufficient operating income to service their debt, though they have sufficient cash cushions to service their debt. The total liabilities of these companies are $12.1 billion, their total debt is $3.3 billion, and they had cash balance of $0.7 billion. Of these 10, seven companies are real estate companies with total liabilities of $12.02 billion, total debt of $3.25 billion and $0.68 billion cash balance.

Table 9. Interest Coverage Ratio, Q3 2011

(U.S. dollars billion)

	Number of Firms	Total Assets	Cash Reserves	Current Liabilities	Long-Term Liabilities	Total Liabilities	Short-term Debt	Total Debt	ICR	ICR with Cash	Average Rate [1]
Transportation	10	35.7	4.8	9.2	5.7	14.8	0.4	4.2	5.7	22.1	7.0
Real estate	26	51.4	2.9	18.2	10.5	28.6	2.4	8.4	2.3	8.9	5.2
Services	17	39.4	1.9	4.7	25.4	30.1	0.2	21.3	2.2	4.1	4.6
Total	53	126.6	9.6	32.1	41.5	73.6	3.0	33.8	2.8	8.4	5.1

Source : IMF staff calculations based on Zawya balance sheets.

[1] Average (interest) rate = interest expense/total debt*100.

Table 10. Comparison of ICRs

	Q3 2010		Q3 2011	
	ICR	ICR w/cash	ICR	ICR w/cash
Transportation	7.9	29.2	5.7	22.1
Real estate	1.9	11.8	2.3	8.9
Services	1.8	4.8	2.2	4.1
Total	2.7	10.3	2.8	8.4

Source: IMF staff calculations based on Zawya balance sheets.

[14] ICR is defined as operating income/interest expenses. Following the standard definition in the literature, firms with ICR below 1 are unable to generate enough income to cover the interest payments, and their debt is classified as distressed.

[15] While the ICR is calculated on the basis of half-yearly interest expense and operating income (earnings before interest and taxes), the cash balances represent outstanding balance at the end of the half-year.

B. Vulnerability to Interest Rate and Income shocks

28. **Stress tests applied to ICRs show limited aggregate risks from interest rate and income shocks.** The interest-paying capacity of the corporates was stressed by increasing short-term interest rates by 200 bp and 500 bp from current levels, and by assuming a negative income shock of 25 percent. Higher interest rates and lower income can imply a much lower buffer against distress, as is shown in Tables 11 and 12. A 500 bp increase in interest rates would reduce the ICR to just above 1 on an aggregate level. The number of real estate companies with ICR < 1 increases to nine in the 500 basis points scenario, and four of these companies would not have sufficient cash balances to repay debt. However, these results need to be interpreted with caution: ICR does not necessarily account for all the resources that the corporates have to meet debt servicing. They could resort to borrowing outside the banking sector, sell assets, raise funds from shareholders, draw down reserves, or have other income. Corporates that have borrowed on fixed terms would not be affected. Similarly, corporates that have hedged floating-interest loans may not face debt distress.

Table 11. ICR Performance Under an Interest Rate Shock

	Q3 2010				Q3 2011			
	200 bpts		500 bpts		200 bpts		500 bpts	
	ICR	ICR w/cash	ICR	ICR w/cash	ICR	ICR w/cash	ICR	ICR w/cash
Transportation	5.9	21.8	4.3	15.7	4.5	17.2	3.4	12.9
Real estate	1.2	7.6	0.8	4.9	1.7	6.5	1.2	4.6
Services	1.2	3.2	0.8	2.2	1.5	2.8	1.1	2.0
Total	1.8	6.9	1.2	4.7	2.0	6.0	1.4	4.2

Source: IMF staff calculations based on Zawya balance sheets.

Table 12. ICR Performance Under Income Shocks

(25 percent fall/increase)

	Q3 2010		Q3 2011	
	ICR	ICR w/ cash	ICR	ICR w/ cash
Transportation	5.9	21.9	4.3	16.5
Real estate	1.4	8.9	1.7	6.7
Services	1.3	3.6	1.6	3.1
Total	2.0	7.7	2.1	6.3

Source: IMF staff calculations based on Zawya balance sheets.

VI. CONCLUSION

29. **The UAE's financial system is highly integrated and still remains exposed to global financial vulnerabilities.** While vulnerabilities have decreased since 2008, the results of this analysis nonetheless suggest that the authorities need to remain vigilant to global shocks and continue to strengthen buffers. The central bank should continue to closely monitor the liquidity of individual banks and encourage them to proactively manage liquidity risks. The global outlook and the heightened uncertainty in foreign funding highlight the need to develop domestic debt markets. Domestic debt markets would facilitate banks' liquidity management, help reduce reliance on foreign funding, and eventually allow corporates to raise funds from domestic capital markets. The credit stress-testing exercise underscores the need to mitigate increasing credit concentration to strengthen capital. The CBU should ensure that banks recognize NPLs fully and continue to provision adequately, while monitoring the performance of restructured loans. The concentration of risk in a few banks indicates the need for close supervision of these banks and closer monitoring of their cross-border and domestic interbank exposures. Enabling a more robust risk assessment culture, conducting regular stress testing of banks, and strengthening the framework for an early warning system would help mitigate risks to the banking system and strengthen financial stability.

Technical Appendix

The Co-VaR model:

To compute the Co-VaR and Δ Co-VaR measures, we use quantile regressions to measure the increase in the default risk of a bank in the event of the default of advanced countries' financial sectors.[1] We define distress as the EDF of the financial sector being in its worst (90th) quantile.

For each bank in Dubai and Abu Dhabi, we separately regress its EDFs on the EDFs of each advanced economies' financial sectors, and focus the relationship at the 90th quantile level. Using the estimated coefficients, the predicted EDFs from the 90th quantile regression of bank *i* given the EDF of financial sector *j* define the value at risk (VaR) of bank *i* given *j*.

The next step is to stress country financial sector *j* which will allow us to compute bank *i*'s conditional VaR (Co-VaR$_{i/j}$): the VaR of bank *i* conditional on country financial sector *j* being in distress. We also compute the change in Co-VaR (Δ Co-VaR) for bank *i* which we define as the difference between the VaR of bank *i* conditional on the distress of *j* and the VaR of bank *i* conditional on the median state of *j* (i.e., *j* not being in distress).

While the Co-VaR measures, for each advanced economy's financial sector, the value at risk of the UAE banking system conditional on the distress of financial sectors in Europe, the Δ Co-VaR captures the marginal contribution of a particular financial sector (in a non-causal sense) to the overall systemic risk in UAE.

[1] Based on Adrian and Brunnermeier (2011).

References

Adrian, T. and M. K. Brunnermeier, 2011, "CoVaR," NBER Working Paper No. w17454. (Cambridge, Massachussets: National Bureau of Economic Research)

Espinoza, Raphael, and Ananthakrishnan Prasad, 2010, "Nonperforming Loans in the GCC Banking System and their Macroeconomic Effects," IMF Working Paper, WP/10/224, Washington: International Monetary Fund)

Merton, R.C., 1974, "On the Pricing of Corporate Debt: The Risk Structure of Interest Rates," *Journal of Finance*, 29 (May), pp. 449–70.

Saadi Sedik and Oral Williams, 2011, "Global and Regional Spillovers to GCC Equity Markets," IMF Working Paper, WP/11/138, Washington: International Monetary Fund.

Segoviano, M. A., 2006, "The Consistent Information Multivariate Density Optimizing Methodology," Financial Markets Group, London School of Economics, Discussion Paper 557 (London: London School of Economics).

Segoviano, M. A. and C. Goodhart, 2009, "Banking Stability Measures," IMF Working Paper WP/09/04 (Washington: International Monetary Fund).

Table 1. United Arab Emirates: Sectoral Origin of GDP at Current Prices, 2003–10[1]

(Millions of U.A.E. dirhams)

	2003	2004	2005	2006	2007	2008	2009*	2010**
Gross domestic product	456,662	542,885	663,316	815,684	948,056	1,156,267	992,805	1,093,114
Crude oil production (including natural gas)	114,781	158,087	227,231	304,762	320,349	427,666	287,206	343,932
Other production (sum)	355,334	400,384	458,194	535,541	662,275	773,879	752,321	797,325
Agriculture	8,803	9,041	9,256	8,926	9,251	9,585	9,581	9,590
Industry (sum)	109,536	122,467	141,862	167,568	199,096	243,903	242,811	263,015
Quarrying	747	825	974	1,289	1,496	1,439	1,377	1,436
Manufacturing[2]	55,998	62,499	70,365	78,774	85,490	99,641	100,345	106,263
Electricity, gas and water	8,703	10,129	12,611	15,096	17,396	20,581	23,818	27,983
Construction	44,088	49,014	57,912	72,408	94,714	122,242	117,270	127,333
Services (sum)	236,995	268,876	307,075	359,047	453,928	520,392	499,929	524,720
Trade	90,040	95,647	103,466	123,093	150,105	168,946	154,258	163,075
Wholesale and retail trade	78,797	83,738	90,108	107,262	132,166	147,590	133,555	139,959
Restaurants and hotels	11,243	11,908	13,358	15,831	17,939	21,356	20,702	23,116
Transportation, storage, and communication	37,731	46,344	52,196	61,989	76,088	88,815	92,482	98,978
Finance and insurance	24,929	29,791	42,195	51,090	67,872	73,185	71,842	74,320
Real estate & business services	52,422	62,802	71,171	81,495	111,180	125,697	106,685	108,413
Government	19,917	20,881	23,131	24,478	28,434	38,733	47,809	49,865
Other services (sum)	11,956	13,412	14,916	16,903	20,248	25,016	26,853	30,069
Social and personal services	9,781	11,163	12,147	13,736	16,666	20,859	22,587	25,936
Domestic household services	2,175	2,249	2,769	3,166	3,582	4,158	4,266	4,133
Less: imputed bank charges	13,453	15,586	22,109	24,619	34,567	45,277	46,722	48,143

Source: National Bureau of Statistics.

[1] GDP at market prices.

[2] Includes natural gas and petrolemum processing industries.

* Estimated

** Preliminary

Table 2. United Arab Emirates: Use of Resources at Current Prices, 2003–10

(Millions of U.A.E. dirhams)

	2003	2004	2005	2006	2007	2008	2009*	2010**
Total consumption	315,172	380,986	432,086	522,122	647,294	789,219	701,402	739,947
Public	38,661	42,286	45,544	50,961	56,190	66,570	89,301	90,141
Private	276,511	338,700	386,542	471,161	591,104	722,649	612,101	649,806
Total fixed investment	94,947	101,433	121,911	141,822	217,835	244,967	221,252	260,230
Public	40,649	43,602	46,551	54,690	64,189	85,073	89,857	94,401
Private	54,298	57,831	75,360	87,132	153,646	159,894	131,395	165,829
Change in inventories	2,950	3,392	5,724	6,663	7,435	15,235	15,728	16,023
Gross capital formation	97,897	104,825	127,635	148,485	225,270	260,202	236,980	276,253
Domestic expenditure	413,069	485,811	559,721	670,607	872,564	1,049,421	938,382	1,016,200
Net exports of goods & services	43,594	57,073	103,595	145,076	75,492	106,847	54,423	76,914
Exports	255,380	345,100	448,305	559,813	685,620	913,748	741,694	822,739
Goods	245,160	334,013	430,737	534,666	656,020	878,508	704,394	779,639
Hydrocarbons	107,175	142,496	202,277	257,442	271,128	374,915	249,273	275,700
Other goods exports	137,985	191,517	228,460	277,224	384,892	503,593	455,121	503,939
Services	10,220	11,087	17,568	25,147	29,600	35,240	37,300	43,100
Imports	211,786	288,027	344,710	414,737	610,128	806,901	687,271	745,825
Goods	191,241	264,361	310,890	367,459	551,328	735,701	624,771	673,625
Services	20,545	23,666	33,820	47,278	58,800	71,200	62,500	72,200
GDP at market prices	456,662	542,885	663,316	815,684	948,056	1,156,267	992,805	1,093,114

Source: National Bureau of Statistics.

* Estimated
** Preliminary

Table 3. United Arab Emirates: Oil and Gas Production, Exports, and Prices, 2003–11

	2003	2004	2005	2006	2007	2008	2009	2010	2011
	(In million barrels per day)								
Oil production									
Crude oil, incld condensates	2.59	2.66	2.68	2.89	2.80	2.84	2.61	2.57	2.81
Crude oil	2.26	2.33	2.38	2.60	2.53	2.57	2.32	2.31	2.55
Abu Dhabi	2.10	2.17	2.24	2.46	2.42	2.49	2.24	2.23	2.47
Dubai, Sharjah, and Ras Al Khaimah	0.16	0.16	0.14	0.14	0.11	0.08	0.08	0.08	0.08
Condensates	0.33	0.33	0.30	0.29	0.27	0.27	0.29	0.26	0.26
Refinery output	0.56	0.56	0.54	0.59	0.57	0.56	0.57	0.57	0.48
Oil and product exports	2.48	2.47	2.46	2.65	2.53	2.58	2.19	2.25	2.38
Crude oil & condensates	2.16	2.19	2.21	2.43	2.36	2.42	2.09	2.15	2.28
Abu Dhabi	1.92	2.01	2.05	2.27	2.23	2.33	2.00	2.06	2.19
Dubai, Sharjah, and Ras Al Khaimah	0.16	0.16	0.14	0.14	0.11	0.08	0.08	0.08	0.08
Condensates	0.08	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01
Refined products	0.32	0.28	0.25	0.22	0.17	0.16	0.10	0.10	0.10
	(In billion cubic meters)								
Natural gas production	44.40	46.30	47.80	49.00	50.40	50.20	51.70	53.25	54.85
LNG exports	7.40	7.41	7.50	7.77	7.72	7.57	7.69	7.98	7.55
NGL exports	13.10	12.86	13.24	13.57	12.50	12.41	12.79	18.90	25.50
Domestic gas consumption	37.50	40.20	42.10	43.40	49.30	58.10	62.75	76.39	94.07
	(In U.S. dollar million)								
Oil and product exports	25,322	34,027	49,307	62,935	65,682	91,446	59,571	66,769	99,572
Crude oil & condensates	21,592	29,875	43,867	57,230	60,819	85,428	54,125	60,089	90,641
Abu Dhabi	19,272	27,602	40,845	53,574	57,679	82,210	51,819	57,344	87,880
Dubai and others	1,539	2,046	2,619	3,191	2,727	2,736	2,032	2,493	2,493
Condensates	781	227	403	465	413	482	274	252	268
Refined products	3,730	4,152	5,440	5,705	4,863	6,018	5,446	6,680	8,930
	(In U.S. dollar million)								
LNG and NGL exports	3,861	4,773	5,771	7,165	8,145	11,546	8,577	7,870	12,030
LNG exports	1,182	1,506	1,601	2,047	2,511	4,567	3,395	3,309	4,539
NGL exports	2,679	3,267	4,170	5,118	5,634	6,979	5,182	4,561	7,492
Total hydrocarbon exports	29,183	38,800	55,078	70,100	73,827	102,992	68,148	74,639	111,602
	(In U.S. dollar per barrel)								
Memorandum item:									
Average UAE oil export prices	28.24	35.87	52.32	63.54	71.08	96.70	62.79	77.00	109.59
Avg Abu Dhabi crude oil export price	27.96	36.11	52.52	63.67	71.34	96.66	62.79	77.00	109.63

Sources: ADNOC; and Fund staff estimates.

Table 4. United Arab Emirates: Consumer Price Index by Major Components, 2010–11

(Index 2007=100)

2010	Weights	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
All Items	100.0	114.2	114.0	114.1	114.1	114.0	114.1	114.5	115.1	116.1	116.7	116.8	116.4
Food & beverages	13.9	119.8	118.9	118.0	119.5	120.9	121.0	121.0	123.3	126.7	127.2	127.4	125.4
Alcohol & beverages	0.2	115.9	116.1	116.1	116.1	116.1	116.1	116.1	116.5	116.5	116.5	116.5	116.5
Clothing & footwear	7.6	111.5	110.4	110.3	109.3	109.4	109.2	107.9	107.0	107.1	106.6	106.8	105.4
Housing	39.3	114.0	113.6	114.2	113.4	112.8	113.1	112.8	112.8	113.0	114.4	114.4	114.3
Furniture and other items	4.2	118.2	118.0	118.0	118.4	118.2	117.6	118.5	119.8	119.3	120.1	120.2	120.2
Medical care & health services	1.1	104.9	105.1	105.3	105.3	105.3	105.3	105.3	105.3	105.3	105.3	105.3	105.3
Transportation	9.9	109.4	110.3	110.3	111.5	112.0	112.4	116.3	117.0	118.9	118.8	118.7	119.0
Communication	6.9	98.0	98.4	98.4	97.8	97.6	97.6	97.6	98.4	98.4	98.5	98.4	98.2
Recreation & cultural services	3.1	106.3	106.7	106.9	106.3	106.3	106.3	106.6	111.3	113.7	114.0	113.8	113.8
Education	4.0	127.3	127.3	127.3	127.3	127.6	127.4	127.4	127.4	131.9	131.9	131.9	131.9
Hotels & restaurants	4.4	129.5	130.2	130.2	130.2	131.1	131.3	131.2	131.3	131.3	131.3	131.3	131.3
Other goods & services	5.3	116.5	116.5	116.6	117.7	115.2	115.6	117.0	117.4	117.9	118.7	119.0	119.6
2011	Weights	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
All Items	100.0	116.1	115.8	115.5	115.4	115.6	116.1	115.9	115.8	116.2	116.7	116.7	116.7
Food & beverages	13.9	124.4	124.5	124.0	125.5	127.2	129.0	131.1	131.8	133.3	134.9	134.4	135.2
Alcohol & beverages	0.2	117.1	117.1	117.0	117.0	117.0	117.0	117.0	117.0	122.2	122.2	122.2	122.2
Clothing & footwear	7.6	104.3	104.7	105.4	104.2	104.3	104.8	107.0	107.5	107.6	109.0	109.0	108.4
Housing	39.3	113.7	113.0	112.6	111.8	111.7	111.9	110.1	109.3	109.0	109.0	109.0	108.7
Furniture and other items	4.2	121.6	120.4	119.9	120.6	120.6	123.4	124.2	124.4	125.4	125.5	125.6	126.1
Medical care & health services	1.1	106.8	105.9	105.6	105.0	105.0	105.0	106.0	106.1	106.1	106.1	106.2	106.1
Transportation	9.9	119.0	119.1	118.5	118.8	118.9	118.9	118.8	118.8	118.8	118.7	118.9	118.9
Communication	6.9	98.4	96.9	98.5	98.5	98.5	98.2	98.1	98.1	98.2	98.2	98.2	98.2
Recreation & cultural services	3.1	114.5	114.9	114.2	114.2	114.2	114.2	114.2	114.2	114.2	114.3	114.3	114.4
Education	4.0	131.9	131.9	131.9	131.9	131.9	131.9	131.9	131.9	136.9	136.9	136.9	136.9
Hotels & restaurants	4.4	131.8	131.9	130.6	130.6	130.5	130.5	130.5	130.5	130.8	134.8	134.8	134.6
Other goods & services	5.3	120.0	121.0	120.5	120.9	120.8	121.6	122.2	122.6	123.4	123.0	123.4	123.1

Source: National Bureau of Statistics.

Table 5. United Arab Emirates: Consolidated Government Finances, 2003–11*

(Millions of U.A.E. dirhams)

	2003	2004	2005	2006	2007	2008	2009	2010	Est. 2011
Total revenue	101,266	128,940	205,303	283,117	320,193	451,416	255,264	313,191	440,074
Hydrocarbon[1]	75,162	98,947	153,689	216,457	231,925	360,487	174,129	233,986	362,576
Nonhydrocarbon	26,104	29,993	51,614	66,660	88,268	90,929	81,135	79,205	77,498
Customs	2,449	3,040	3,852	4,687	8,101	8,686	8,546	8,062	9,701
Profit transfers	2,935	3,322	4,624	5,660	12,701	5,228	4,033	5,089	6,564
Income tax[2]	301	320	420	1,093	842	1,190	1,340	1,113	1,093
Fees and charges	9,479	7,044	14,998	13,566	9,719	24,051	24,803	26,157	23,293
Investment income[3]	5,830	8,564	19,087	31,279	39,305	28,468	19,701	15,748	12,196
Other	5,110	7,703	8,634	10,374	17,600	23,307	22,712	23,037	24,651
Total expenditure and grants	92,796	97,033	105,393	128,675	168,542	257,715	377,702	336,170	401,492
Current expenditure	75,506	82,184	85,456	107,744	128,226	170,876	210,920	229,917	257,091
Wages and salaries[4]	15,764	15,990	15,915	18,138	21,003	29,001	33,248	31,136	32,059
Goods and services	27,029	28,326	25,453	25,330	36,455	49,179	68,216	36,614	40,013
Abu Dhabi "federal services"[5]	19,251	23,760	22,784	25,349	31,285	45,552	55,924	72,739	80,340
Subsidies and transfers[6]	11,370	12,335	19,353	37,035	36,425	41,154	46,034	41,004	53,899
Interest payments	0	0	0	1	413	3,047	3,369	6,533	7,776
Other	2,092	1,773	1,951	1,891	2,646	2,943	4,129	41,891	43,004
Development expenditure	16,028	15,064	14,042	11,606	17,271	31,485	45,548	35,446	37,253
Loans and equity (net)[7]	-2	-812	4,880	8,953	20,793	51,794	117,948	68,193	101,563
Foreign grants[8]	1,264	597	1,015	372	2,252	3,559	3,287	2,613	5,585
Abu Dhabi	1,136	597	1,015	372	2,129	3,485	3,096	2,603	5,538
Federal	128	0	0	0	123	74	191	10	47
Overall balance (consolidated)[9]	8,471	31,907	99,910	154,442	151,650	193,701	-122,438	-22,978	38,582
(In percent of GDP)	1.9	5.9	15.1	18.9	16.0	16.8	-12.3	-2.1	2.9
Nonhydrocarbon balance	-66,692	-67,039	-53,779	-62,015	-80,274	-166,786	-296,567	-256,964	-323,994
(In percent of GDP)	-14.6	-12.3	-8.1	-7.6	-8.5	-14.4	-29.9	-23.5	-24.5
(In percent of nonhydrocarbon GDP)	-19.5	-17.4	-12.3	-12.1	-12.8	-22.9	-42.0	-34.3	-41.0
Nonhydrocarbon balance (excluding investment income	-72,522	-75,603	-72,866	-93,294	-119,579	-195,253	-316,268	-272,712	-336,190
(In percent of GDP)	-15.9	-13.9	-11.0	-11.4	-12.6	-16.9	-31.9	-24.9	-25.4
(In percent of nonhydrocarbon GDP)	-21.2	-19.6	-16.7	-18.3	-19.1	-26.8	-44.8	-36.4	-42.5
Memorandum items:									
Hydrocarbon share of revenue	74.2	76.7	74.9	76.5	72.4	79.9	68.2	74.7	82.4

Sources: Federal government; Emirate finance departments; and Fund staff estimates.

* GFSM 1986 classification

1 Includes Fund estimates of revenues from other government entities operating in the oil and gas sector.

2 Taxes on profit of foreign banks. Income taxes on gas companies are included under hydrocarbon revenues.

3 Fund staff estimates.

4 Excludes military wages and salaries.

5 Largely military and internal security expenditures paid by Abu Dhabi but not in the federal accounts.

6 Includes government's contribution to the pension fund in 2005 of AED 6,207 million.

7 Includes government's share in the 2005 privatization of the telecom company, Etisalat.

8 Intragovernmental grants are netted out in the consolidated fiscal accounts.

9 Consolidated accounts of the federal government, Abu Dhabi, Dubai and Sharjah.

Table 6. United Arab Emirates: Federal Government Financial Operations, 2003–11*

(Millions of U.A.E. dirhams)

	2003	2004	2005	2006	2007	2008	2009	2010	Est. 2011
Total revenue and grants	21,310	22,016	24,939	30,387	34,541	42,802	42,280	39,799	40,864
Revenues	8,253	9,018	11,426	16,286	20,146	26,610	26,780	27,728	27,427
Enterprise profits[1]	1,817	2,011	2,687	2,853	11,231	3,409	3,263	3,204	5,964
Other fees and charges	6,436	7,007	8,740	13,433	8,915	23,201	23,517	24,524	21,463
Grants from Emirates	13,057	12,998	13,512	14,101	14,395	16,192	15,500	12,071	13,437
Abu Dhabi	11,857	11,798	12,312	12,901	13,195	14,992	14,300	11,471	11,937
Cash contributions	5,610	5,619	6,171	6,779	7,119	9,857	9,743	7,398	7,398
Federal services[2]	6,119	6,179	6,141	6,122	6,076	5,135	4,557	4,073	4,539
Foreign grants on federal account[2]	128	0	0	0	0	0	0	0	0
Dubai	1,200	1,200	1,200	1,200	1,200	1,200	1,200	600	1,500
Total expenditure and grants	22,147	22,533	23,289	28,551	27,800	39,781	41,338	39,592	43,787
Current expenditures	21,357	21,693	22,082	25,605	25,461	36,572	38,563	37,178	37,873
Wages and salaries[3]	7,841	7,998	8,158	8,997	9,387	13,854	15,253	13,187	13,355
Goods and services (by ministries)	9,789	9,902	9,997	9,184	9,448	11,730	11,722	14,530	11,093
Subsidies and transfers	3,727	3,793	3,928	7,424	6,626	10,988	11,587	9,460	13,425
Development expenditures	614	715	533	466	920	1,041	1,139	1,159	1,467
Equity positions	176	125	674	2,480	1,296	2,094	1,446	1,245	4,400
Domestic	176	125	674	2,480	1,296	2,094	1,446	945	4,400
Foreign grants	128	0	0	0	123	74	191	10	47
Overall balance	-837	-516	1,649	1,836	6,740	3,021	943	207	-2,923
Memorandum items:									
Abu Dhabi federal services[4]	19,251	23,760	22,784	25,349	31,285	45,552	55,924	72,739	80,340

Sources: Ministry of Finance; Abu Dhabi Department of Finance.

* GFSM 1986 classification

[1] Dividends and payouts by Etisalat and other enterprises, including the Central Bank.

[2] Amount budgeted by federal government, but outlays are made by Abu Dhabi.

[3] Beginning 2002, military pension payments of Interior Ministry are classified as wages and salaries.

[4] Mainly military and internal security expenditures not included in the federal accounts.

Table 7. United Arab Emirates: Federal Subsidies and Transfers, 2003–11

(Millions of U.A.E. dirhams)

	2003	2004	2005	2006	2007	2008	2009	2010	Est. 2011
Subsidies	2,003	2,104	2,253	4,032	1,976	2,376	2,430	2,431	2,344
Sheikh Zayed University	209	179	220	235	228	255	252	252	252
U.A.E. University	747	689	780	794	833	1,220	1,283	1,251	1,271
Higher College of Technology	551	443	562	538	632	708	721	781	721
Emirates Media, Inc.	180	150	180	180	282				
National Media Council [1]						192	174	147	100
Other	316	643	511	2,285	0	0	0	0	0
Transfers	1,739	1,641	1,675	2,246	2,587	5,001	5,009	4,944	5,297
Pension Fund	600	600	400	400	1,646	4,101	3,709	3,649	4,031
Marriage Fund	216	180	216	216	262	221	221	215	186
Zayed Housing Program	500	450	640	640	680	680	1,080	1,080	1,080
General Pension and Social Security Authority [2]	423	411	419	990	0	0	0	0	0
Other subsidies and transfers	0	48	0	1,146	2,063	4,611	4,148	2,086	5,784
Total	3,742	3,793	3,928	7,424	6,626	11,988	11,587	9,460	13,425

Source: Ministry of Finance.

[1] Subsidy payments to Emirates Media Inc. were discontinued in 2008 as it was turned into a Local Entity - Abu Dhabi Government. Payment from 2008 was made to National Media Council which is a separate Federal Unit.

[2] Transfers to fund pension payments for federal workers retiring in current year, military pensions are included starting 2006.

Table 8. United Arab Emirates: Abu Dhabi Fiscal Operations, 2003–11*

(Millions of U.A.E. dirhams)

	2003	2004	2005	2006	2007	2008	2009	2010	Est. 2011
Total revenue	62,743	80,252	132,247	191,904	213,312	305,715	147,088	192,173	280,930
Hydrocarbon revenue	51,830	67,978	104,279	157,125	168,274	269,586	121,775	169,128	261,490
Crude oil royalties and taxes	48,618	64,345	99,699	151,118	162,557	259,227	116,817	162,089	251,217
Income taxes[1]	3,212	3,633	4,580	6,007	5,717	10,359	4,958	7,038	10,273
Nonhydrocarbon	10,913	12,274	27,968	34,779	45,038	36,129	25,313	23,046	19,440
Customs	552	710	635	748	1,427	1,817	1,954	1,392	2,042
Investment income[2]	5,830	8,564	19,087	31,279	39,305	28,468	19,701	15,748	12,196
Other	1,531	3,000	2,039	2,752	4,306	5,844	3,658	5,906	5,202
Total expenditure and grants	69,865	74,015	79,828	92,310	121,737	187,313	263,804	260,174	314,733
Current expenditures	45,287	50,659	52,503	65,243	81,581	105,431	138,996	159,053	182,022
Wages and salaries	3,454	3,169	3,169	3,236	4,813	5,861	6,006	5,446	5,793
Goods and services	12,286	12,822	12,396	13,591	22,387	32,027	48,929	14,729	21,285
Federal services[3]	19,251	23,760	22,784	25,349	31,285	45,552	55,924	72,739	80,340
Water and electricity	3,706	3,636	318	0	0	0	0	0	0
Subsidies and transfers	6,590	7,272	13,836	23,066	23,096	21,784	27,597	25,658	33,662
Interest payments	0	0	0	1	0	207	540	877	566
Development expenditures	11,816	11,898	9,792	7,321	5,041	13,211	27,635	23,763	27,373
Water and electricity	2,766	2,147	3,002	2,428	1,902	2,300	4,154	3,274	3,018
Other	9,050	9,751	6,790	4,893	3,139	10,911	23,481	20,489	24,355
Loans and equity (net)	-178	-937	4,206	6,473	19,497	49,700	79,777	63,276	87,863
Domestic	-1,004	3,025	4,813	8,798	19,218	50,410	80,686	63,418	87,992
Loans (net)	-1,345	1,527	1,607	2,759	10,377	38,070	44,835	18,185	65,706
Transfers to Dubai	0	0	0	0	0	0	12,129	11,000	9,923
Equity (net)	341	1,498	3,206	6,039	8,841	12,340	23,722	34,233	12,363
Foreign loans	826	-3,962	-607	-2,325	279	-710	-909	-142	-129
Grants	12,940	12,395	13,327	13,273	15,618	18,971	17,396	14,082	17,475
Cash contributions to federal government	5,610	5,619	6,171	6,779	7,119	9,857	9,743	7,406	7,398
Federal services[4]	6,119	6,179	6,141	6,122	6,076	5,135	4,557	4,073	4,539
Foreign grants on federal account[4]	75	0	0	0	294	494	0	0	0
Foreign grants[5]	1,136	597	1,015	372	2,129	3,485	3,096	2,603	5,538
Overall balance	-7,122	6,237	52,419	99,594	91,575	118,401	-116,716	-68,001	-33,802

Source: Abu Dhabi Department of Finance.

* GFSM 1986 classification

[1] Income taxes are entirely from ADGAS and GASCO.

[2] Fund staff estimates; not included in finance department accounts.

[3] Mainly defense and security outlays; not included in the federal accounts.

[4] Outlays made by Abu Dhabi, but included in the federal accounts.

[5] Foreign grants on Abu Dhabi account.

Table 9. United Arab Emirates: Abu Dhabi Development Expenditures, 2003–11

(Millions of U.A.E. dirhams)

	2003	2004	2005	2006	2007	2008	2009	2010	2011*
Agriculture	736	1,095	943	331	289	430	506	265	357
Electricity and water	2,766	2,147	3,002	2,428	1,902	2,300	4,154	3,275	3,018
Industry & commerce	1,287	1,579	916	288	239	280	333	27	17
Transport and communications	1,993	2,340	2,357	2,715	1,310	6,708	14,371	7,374	5,004
Housing & community centers	1,933	2,066	1,189	414	216	1,571	1,465	5,142	7,244
Urban development (reclamation and dredging)	865	320	56	48	126	370	2,341	…	…
Health [1]		11	7	55	163	136	563	1,648	1,435
Sewerage/sanitation	869	656	773	541	333	542	1,155	1,183	2,240
Sports and recreation	1,227	1,470	393	395	233	394	1,084	361	176
General administration and contingency fund	140	214	156	106	194	241	933	1,298	744
Education [2]	0	0	0	0	36	205	655	382	1,456
Religious affairs	0	0	0	0	0	30	23	…	…
Police and civil defence	0	0	0	0	0	4	36	168	802
Others (including unallocated reserves)	0	0	0	0	0	0	16	2,639	4,880
Total	11,816	11,909	9,792	7,321	5,041	13,211	27,635	23,762	27,373

Source: Abu Dhabi Department of Finance.

* Preliminary, subject to audit/change.

[1] Since 2004, health services in Abu Dhabi, previously managed by the federal government, are managed by Abu Dhabi Health Authority.
[2] Since 2007, education services in Abu Dhabi, previously managed by the federal government, are managed by Abu Dhabi Education Council.

Table 10. United Arab Emirates: Abu Dhabi Government Domestic Aid, Grants, Subsidies and other Transfers, 2007–11

(Millions of U.A.E. dirhams)

	2007	2008	2009	2010	2011*
Agriculture and livestock support	3,398	3,116	3,713	494	537
Housing support	49	127	456	2,015	2,025
Food subsidies	9	198	386	40	409
Water and electricity tariff support	6,950	9,793	9,667	10,871	12,391
Support to industry	2	366	594	419	1,257
Support to Northern Emirates	3,636	3,806	2,459	2,082	1,675
Marriage support and social allowance	654	907	1,157	1,517	1,421
Other grants and transfers	9,047	4,731	8,951	6,789	13,317
Total	23,745	23,044	27,383	24,227	33,032

Source: Abu Dhabi Department of Finance.

* Preliminary, subject to audit/change

Table 11. United Arab Emirates: Dubai Government Operations, 2003–11*
(Millions of U.A.E. dirhams)

	2003	2004	2005	2006	2007	2008	2009	2010	Est. 2011
Total revenue	10,047	11,978	16,900	19,831	25,605	32,618	40,554	40,868	42,205
Tax revenue	1,997	2,415	3,317	4,630	6,838	7,604	7,132	7,057	7,987
Customs[1]	1,696	2,095	2,897	3,537	5,996	6,414	5,792	5,944	6,894
Income tax[2]	301	320	420	1,093	842	1,190	1,340	1,113	1,093
Nontax revenue	8,050	9,563	13,583	15,201	18,767	25,014	33,422	33,811	34,218
Oil and gas	3,766	4,213	5,902	6,259	6,770	8,495	4,703	5,014	5,477
Enterprise profits[3]	1,118	1,311	1,937	2,807	1,470	1,819	770	1,885	600
Transfers from Abu Dhabi	0	0	0	0	0	0	12,129	11,000	9,923
Other	3,166	4,039	5,744	6,135	10,527	14,700	15,820	15,912	18,218
Total expenditure	10,760	10,245	12,188	17,324	26,913	40,838	91,992	53,538	59,549
Current	6,664	7,538	8,272	14,024	16,796	25,307	28,439	29,414	31,740
Wages and salaries	3,044	3,390	3,933	5,137	5,906	8,168	10,369	10,886	11,167
Goods and services[4]	1,755	2,413	2,178	1,926	3,983	5,073	6,748	6,555	6,908
Subsidies and transfers[5]	1,008	1,207	1,469	6,411	5,168	7,582	5,753	5,357	5,769
Interest payments	0	0	0	0	412	2,841	2,830	5,656	7,211
Other	857	528	692	550	1,327	1,643	2,739	960	685
Development	2,896	1,507	2,716	2,100	8,917	14,331	13,499	8,852	7,086
Loans and equity (net)	0	0	0	0	0	0	48,854	14,673	19,223
Dubai Financial Support Fund							48,854	14,673	19,223
Grants									
Contribution to federal government	1,200	1,200	1,200	1,200	1,200	1,200	1,200	600	1,500
Overall balance	-713	1,733	4,712	2,507	-1,308	-8,220	-51,438	-12,670	-17,344

Source: Dubai Department of Finance.

* GFSM 1986 classification

[1] All revenues associated with trade and port operations; more than customs duties.

[2] Taxes on foreign banks.

[3] Includes DUBAL, DUGAS, Emirates Airlines, Jebel Ali, and other public enterprises.

[4] Includes interest and amortization on some bank loans.

[5] Excludes Water and Electricity, which is settled in an off-budget account.

Table 12. United Arab Emirates: Monetary Survey, 2003–11[1]

(Millions of U.A.E. dirhams)

End of Period Stock	2003	2004	2005	2006	2007	2008	2009	2010	2011*
Net foreign assets	131,847	145,313	166,820	155,658	160,498	33,098	46,949	78,624	92,502
Foreign assets	167,255	194,654	253,177	334,614	482,821	316,852	298,706	350,947	382,448
Central bank	55,518	68,546	78,149	102,676	285,924	113,466	90,549	117,434	133,572
Commercial banks[2]	111,737	126,108	175,028	231,938	196,897	203,386	208,157	233,513	248,876
Foreign liabilities	35,408	49,341	86,357	178,956	322,322	283,757	251,757	272,324	289,946
Central bank	349	548	1,142	1,268	1,352	1,158	671	625	138
Commercial banks[2]	35,059	48,793	85,215	177,688	320,970	282,599	251,086	271,699	289,808
Net domestic assets	64,703	96,929	157,244	243,636	405,206	641,212	693,669	707,764	733,259
Claims on government (net)	-29,517	-31,293	-47,332	-51,882	-61,380	-85,029	9,997	28,939	44,779
Claims on public sector enterprises	12,990	13,884	24,797	33,002	45,385	56,064	77,259	87,581	119,852
Claims on private nonbanks	169,469	211,407	305,546	418,151	585,998	875,130	878,006	883,254	901,592
Capital and reserves	-46,063	-54,023	-79,692	-105,649	-132,442	-167,069	-245,531	-274,538	-297,943
Other items (net)	-42,176	-43,046	-46,075	-49,986	-32,355	-37,884	-26,062	-17,472	-35,021
Domestic liquidity	196,550	242,242	324,064	399,294	565,703	674,310	740,618	786,388	825,758
Money	58,262	80,818	104,449	120,020	181,665	208,138	223,482	232,961	264,096
Currency outside banks	13,785	15,778	17,522	21,837	25,942	36,967	37,217	38,560	41,591
Dirham demand deposits	44,477	65,040	86,927	98,183	155,723	171,171	186,265	194,401	222,505
Quasi-money	138,288	161,424	219,615	279,274	384,038	466,172	517,136	553,427	561,662
Foreign currency deposits	47,980	62,496	73,804	96,307	91,007	120,210	123,001	130,264	144,094
Dirham time and savings deposits	90,308	98,928	145,811	182,967	293,031	345,962	394,135	423,163	417,568
Memorandum items:									
Dirham-denominated liquidity	134,785	163,968	232,738	281,150	448,754	517,133	580,400	617,564	640,073
Change in percent	14.5	21.7	41.9	20.8	59.6	15.2	12.2	6.4	3.6

Source: Central Bank of the United Arab Emirates.

* Estimates subject to revision.

[1] Compiled in accordance with the residence principle.

[2] Including the restricted license bank, Banca Commercial Italiana which ended its operations in May 2003.

Table 13. United Arab Emirates: Factors Affecting Domestic Liquidity, 2003–11
(Annual changes in millions of U.A.E. dirhams)

End of Period	2003	2004	2005	2006	2007	2008	2009	2010	2011*
Net foreign assets	3,193	13,466	21,507	-11,162	4,841	-127,404	13,854	31,675	13,878
Foreign assets	295	27,399	58,523	81,437	148,207	-165,969	-18,146	52,241	31,500
Central bank	-711	13,028	9,603	24,527	183,248	-172,458	-22,917	26,885	16,137
Commercial banks	1,006	14,371	48,920	56,910	-35,041	6,489	4,771	25,356	15,363
Foreign liabilities	-2,898	13,933	37,016	92,599	143,366	-38,565	-32,000	20,566	17,622
Central bank	65	199	594	126	84	-194	-487	-47	-487
Commercial banks [1]	-2,963	13,734	36,422	92,473	143,282	-38,371	-31,513	20,613	18,109
Net domestic assets	24,113	32,226	60,315	86,392	161,570	236,006	52,457	14,095	25,495
Claims on government (net)	-2,269	-1,776	-16,039	-4,550	-9,498	-23,649	95,026	18,942	15,840
Claims on public sector enterprises	5,868	894	10,913	8,205	12,383	10,679	21,195	10,322	32,271
Claims on private nonbanks	20,117	41,938	94,139	112,605	167,847	289,132	2,876	5,248	18,338
Capital and reserves	-3,480	-7,960	-25,669	-25,957	-26,793	-34,627	-78,462	-29,007	-23,405
Other items (net)	3,877	-870	-3,029	-3,911	17,631	-5,529	11,822	8,590	-17,549
Domestic liquidity	27,306	45,692	81,822	75,230	166,409	108,607	66,308	45,770	39,370
Money	11,208	22,556	23,631	15,571	61,645	26,473	15,344	9,479	31,135
Currency outside banks	1,847	1,993	1,744	4,315	4,105	11,025	250	1,343	3,031
Dirham demand deposits	9,361	20,563	21,887	11,256	57,540	15,448	15,094	8,136	28,104
Quasi-money	16,098	23,136	58,191	59,659	104,764	82,134	50,964	36,291	8,235
Foreign currency deposits	8,375	14,516	11,308	22,503	-5,300	29,203	2,791	7,263	13,830
Dirham time and savings deposits	7,723	8,620	46,883	37,156	110,064	52,931	48,173	29,028	-5,595

Source: Central Bank of the United Arab Emirates.

* Estimates subject to revision.

[1] Including the restricted license bank, Banca Commercial Italiana, which ended its operations in May 2003.

Table 14. United Arab Emirates: Summary Accounts of the Central Bank, 2003–11
(Millions of U.A.E. dirhams)

End of Period	2003	2004	2005	2006	2007	2008	2009	2010	2011*
Foreign assets	55,518	68,546	78,149	102,676	285,924	113,466	90,549	117,435	133,572
Claims on banks	42,746	37,309	39,727	57,739	184,368	83,307	89,768	48,169	59,487
Loans and investments	11,348	29,564	36,909	43,299	98,857	29,576	37	68,418	72,301
Other [1]	127	516	1,021	1,295	2,467	156	70	115	507
IMF reserve position	1,297	1,157	492	343	232	427	674	733	1,277
Net claims on government	-1,297	-1,157	1,933	282	-232	54,573	106,051	105,992	97,448
Claims	0	0	2,425	625	0	55,000	106,725	106,725	98,725
Less: IMF reserve position	1,297	1,157	492	343	232	427	674	733	1,277
Claims on private nonbanks [2]	75	68	64	59	53	49	56	46	42
Claims on commercial banks	0	0	0	0	0	23,794	6,725	1,421	1,620
Unclassified assets	156	182	190	216	204	1,865	556	4,043	1,585
Total assets/liabilities	54,452	67,639	80,336	103,233	285,949	193,747	203,937	228,937	234,267
Foreign liabilities	349	548	1,142	1,268	1,352	1,158	671	625	138
Reserve money	30,539	38,789	44,314	54,177	92,077	121,728	113,795	112,360	131,900
Currency outside banks	13,785	15,778	17,522	21,837	25,942	36,967	37,217	38,560	41,591
Cash held by banks	2,184	2,714	3,511	4,995	5,730	8,360	8,363	9,215	10,496
Banks' deposits	14,570	20,297	23,281	27,345	60,405	76,401	68,215	64,585	79,813
Certificates of deposit	11,762	15,977	21,033	32,322	173,577	47,183	71,453	94,002	80,407
Government deposits [3]	10,186	10,620	12,124	13,651	15,932	20,863	15,935	15,331	599
Capital and reserves	1,560	1,560	1,560	1,560	1,560	1,500	1,500	1,500	17,152
Unclassified liabilities	56	145	163	255	1,449	1,318	583	5,119	4,071

Source: Central Bank of the United Arab Emirates.

* Preliminary.

[1] Mainly gold, valued at cost.

[2] Staff loans.

[3] Mainly foreign currency deposits.

Table 15. United Arab Emirates: Balance Sheets of Commercial Banks, 2003–11[1]
(Millions of U.A.E. dirhams)

End of Period	2003	2004	2005	2006	2007	2008	2009	2010	2011
Reserves	16,753	23,011	26,791	32,340	66,135	84,761	76,578	73,800	90,309
Cash	2,184	2,714	3,511	4,995	5,730	8,360	8,363	9,215	10,496
Deposits with central bank	14,569	20,297	23,280	27,345	60,405	76,401	68,215	64,585	79,813
Foreign assets	111,727	126,108	175,028	231,938	196,897	203,386	208,157	233,513	248,876
Claims on government	21,407	31,776	42,055	55,183	69,379	85,181	112,530	121,868	122,931
Claims on public sector enterprises [2]	12,990	13,884	24,797	33,002	45,385	56,064	77,259	87,581	119,852
Claims on private nonbanks	165,143	204,727	290,239	385,730	530,737	777,141	786,495	792,030	819,112
Claims on nonbank financial institutions	4,251	6,612	15,243	32,362	55,208	97,940	94,350	99,708	92,716
Central bank certificates of deposit	11,762	15,977	21,033	32,322	173,577	47,183	71,453	94,002	80,407
Unclassified assets[3]	7,390	10,451	13,317	21,677	40,080	44,293	67,475	76,646	78,966
Total assets/liabilities	351,423	432,546	608,503	824,554	1,177,398	1,395,949	1,494,297	1,579,148	1,653,169
Monetary deposits	44,477	65,040	86,927	98,183	155,723	171,171	186,265	194,401	222,505
Quasi-monetary deposits	138,288	161,424	219,615	279,274	384,038	466,172	517,136	553,427	561,662
Foreign currency	47,980	62,496	73,804	96,307	91,007	120,210	123,001	130,264	144,094
Local currency	90,308	98,928	145,811	182,967	293,031	345,962	394,135	423,163	417,568
Foreign liabilities [4]	35,059	48,793	85,215	177,688	320,970	282,599	251,086	271,699	289,808
Government deposits	39,418	51,274	79,179	93,680	114,579	198,298	192,614	183,162	174,809
Government lending funds	23	18	17	16	16	5,622	13	13	13
Credit from central bank	101	25	26	8	2	25,260	6,776	4,314	1,484
Capital and reserves	44,455	52,463	78,132	104,089	130,882	165,569	244,031	273,038	280,791
Provision	31,983	29,768	30,964	33,183	20,788	25,269	41,454	53,121	68,517
Unclassified liabilities	17,619	23,741	28,428	38,433	50,400	55,989	96,376	99,094	122,097

Source: Central Bank of the United Arab Emirates.

[1] Excluding accounts of the restricted license bank.

[2] Commercial enterprises with significant government ownership, including Dubai Aluminum Company, Dubai Gas Company, Abu Dhabi National Oil Company, other oil and gas companies owned by Abu Dhabi, and cement companies established by several Emirate governments.

[3] Includes net lending to restricted license bank, Banca Commercial Italiana, which ended its operations in May 2003.

[4] Includes commercial prepayments.

Table 16. United Arab Emirates: Banking System Structure, 2003–11

	2003	2004	2005	2006	2007	2008	2009	2010	2011
Number of:									
Banks	46	46	46	46	48	52	52	53	52
Private	31	31	31	31	33	35	36	37	37
Local	6	6	6	6	7	7	7	7	7
Foreign	25	25	25	25	26	28	29	30	30
State-owned	15	15	15	15	15	17	16	16	16
Foreign-owned subsidiaries									
Banks[1]									
Islamic	2	4	4	4	6	8	8	8	8
Non-Islamic	44	42	42	42	42	44	44	45	45
Branches of foreign banks	111	111	111	111	111	117	125	133	133
Concentration									
Banks[2]	12	13	11	11	11	11	10	10	10
Assets share					(Percent)				
Banks	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Private commercial	35.9	36.1	35.8	36.4	38.2	36.8	35.5	34.6	35.9
Local	11.8	12.6	14.1	14.5	15.6	16.3	16.6	15.9	15.6
Foreign	24.1	23.5	21.8	21.9	22.6	20.6	18.9	18.6	20.3
State-owned	64.1	63.9	64.2	63.6	61.8	63.2	64.5	65.4	64.1
Banks	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Islamic	9.0	9.9	11.9	14.0	14.2	15.7	16.0	16.8	15.6
Non-Islamic	91.0	90.1	88.1	86.0	85.8	84.3	84.0	83.2	84.4
Deposits share					(Percent)				
Banks	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Private commercial	39.7	38.8	38.5	40.1	39.9	37.7	37.2	35.0	36.2
Local	13.6	13.8	14.9	15.6	16.7	16.6	17.2	16.2	16.0
Foreign	26.1	25.0	23.7	24.5	23.2	21.1	20.0	18.7	20.2
State-owned	60.3	61.2	61.5	59.9	60.1	62.3	62.8	65.0	63.8
Banks	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Islamic	11.2	13.3	13.8	16.0	17.1	18.1	18.7	18.8	18.0
Non-Islamic	88.8	86.7	86.2	84.0	82.9	81.9	81.3	81.2	82.0

Source: Central Bank of the United Arab Emirates.

[1] In 2003, Grindlays merged with Standard Chartered Bank.

[2] Number of institutions with 75 percent of total assets.

Table 17. United Arab Emirates: Sectoral Loan Concentration, 2003–11[1]

(Percent of total credit)

	2003	2004	2005	2006	2007	2008	2008	2009	2010	2011
Agriculture	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.1	0.1	0.1
Mining and quarrying	1.1	1.2	1.1	1.2	1.2	1.1	1.3	0.7	0.7	2.8
Manufacturing	5.6	5.5	5.0	5.1	5.4	5.1	4.9	4.6	4.7	4.6
Electricity, gas, and water	5.6	3.7	3.0	2.3	1.9	2	2.2	2.6	2.5	2.2
Construction (excluding mortgages)	8.3	8.5	6.9	4.8	3.4	3.9	6.8	6.6	6.1	5.4
Trade	29.0	28.1	24.1	19.6	16.4	15.6	13.4	10.5	10.0	10.6
Transportation, storage, and communication	3.2	2.8	3.0	4.1	3.4	2.5	2.7	2.9	2.7	2.6
Financial institutions (excluding banks)[2]	1.2	1.4	2.1	3.9	5.7	6.3	7.9	9.0	8.5	7.3
Government	10.0	11.8	11.1	10.1	9	8.6	7.8	9.6	9.8	10.3
Services	6.4	7.3	9.0	11.8	14.4	14.6	15.9	14.2	14.1	14.9
Real estate mortgage loans	5.3	4.4	5.0	6.6	7.1	6.6	6.1	6.5	6.6	6.3
Personal loans										
Business	12.2	14.8	19.9	18.6	17	18.2	17.3	17.9	18.8	18.9
Consumption	10.9	9.3	7.7	6.6	6.7	6.7	7.3	6.9	6.8	6.5
Others	0.8	1.0	1.8	5.0	8.1	8.5	6.1	7.9	8.6	7.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Central Bank of the United Arab Emirates.

[1]Excludes overseas branches.

[2] Includes Abu Dhabi Investment Council (ADIC) and Abu Dhabi Investment Authority (ADIA).

Table 18. United Arab Emirates: Financial Sector Indicators, 2004–11

(Percent, unless otherwise indicated)

Core indicators	2004	2005	2006	2007	2008	2009	2010	2011
Deposit-taking institutions								
Total regulatory capital to risk-weighted assets[1]	16.9	17.4	17.3	14.4	13.2	19.9	20.7	20.0
Regulatory Tier I capital to risk-weighted assets	16.3	16.9	15.0	12.4	12.3	15.4	16.1	15.2
Nonperforming loans net of provisions to capital	3.5	1.8	0.6	0.0	0.0	3.1	4.2	4.9
Nonperforming loans to total gross loans	12.5	8.3	6.4	2.6	2.3	4.3	5.6	7.2
Return on assets	2.1	2.7	1.4	1.5	1.4	1.4	1.3	1.5
Return on equity	18.6	22.5	11.7	14.1	13.0	10.9	10.4	11.4
Interest margin to gross income	64.6	49.3	29.3	32.4	40.2	43.8	47.3	49.5
Noninterest expenses to gross income	40.3	26.9	20.9	21.4	26.3	25.0	26.8	36.7
Liquid assets to total assets	23.2	26.9	16.4	13.2	6.3	13.2	17.2	16.2
Encouraged indicators								
Deposit-taking institutions								
Capital to assets	11.1	11.9	12.9	11.6	11.8	16.0	17.7	17.2
Personnel expenses to noninterest expenses	38.6	41.8	54.6	55.1	54.4	53.3	54.4	52.4
Customer deposits to total (non-interbank) loans	113.6	112.4	96.5	99.7	90.6	92.6	96.5	93.6
Households								
Household debt to GDP	6.1	6.9	5.2	6.0	7.4	7.6	6.3	6.5
Real estate loans to total loans	4.7	5.0	5.9	8.3	13.1	14.4	16.4	21.1
Other indicators								
Loan loss reserves/nonperforming loans	94.6	95.7	94.7	90.1	77.7	64.4	68.0	67.8
Deposits as percent of M2	119.9	126.4	130.0	127.3	136.9	132.7	133.5	129.5
Commercial banks loans to private sector as percent of total deposits	70.5	70.8	60.4	61.5	71.3	66.7	63.0	63.7
Number of commercial banks (end-of-period)	46	46	46	48	52	52	53	52
Number of banks with C.A.R. above 10 percent	46	46	46	48	52	52	53	51
Foreign currency deposits as percent of M2	39.6	44.5	47.0	34.3	37.4	33.7	32.2	25.3
Foreign currency denominated lending/total lending	20.7	19.7	22.8	20.8		14.8	14.2	15.4
Earning per employee (in millions of AED)	0.5	0.7	0.7	0.8	0.7	0.5	0.6	0.7

Source: Central Bank of the United Arab Emirates.

[1]Tier 2 plus tier 2 capital items (net of deductions).

Table 19. United Arab Emirates: Banking System Income Statement and Profitability, 2003–11[1]

(Percent of total assets)

	2003	2004	2005	2006	2007	2008	2009	2010	2011
Total income	**5.3**	**5.2**	**6.4**	**7.1**	**6.7**	**6.2**	**6.3**	**5.8**	**6.0**
Interest income	3.1	3.4	4.2	5.2	5.2	4.8	4.9	4.5	4.6
Fees	0.7	0.7	0.9	0.8	0.6	0.7	0.8	0.7	0.7
Foreign exchange income	0.2	0.3	0.3	0.4	0.3	0.3	0.2	0.2	0.3
Other income	1.2	0.9	1.0	0.7	0.6	0.3	0.4	0.3	0.4
Securities									
Real estate									
Total expenses	**3.3**	**3.2**	**3.7**	**4.8**	**4.7**	**4.3**	**5.0**	**4.4**	**4.4**
Interest expense	1.0	1.1	2.0	3.1	3.0	2.3	2.1	1.8	1.6
Provisions	0.5	0.5	0.4	0.3	0.4	0.6	1.4	1.1	1.1
Wages	0.7	0.8	0.7	0.7	0.7	0.8	0.8	0.8	0.8
Other expenses	1.1	0.8	0.6	0.6	0.6	0.7	0.7	0.7	0.9
Gross income									
Net profit/loss	**1.9**	**2.1**	**2.7**	**2.3**	**2.0**	**1.8**	**1.3**	**1.4**	**1.6**

Source: Central Bank of the United Arab Emirates.

[1] Includes overseas branches.