

IMF Working Paper

Oman: Banking Sector Resilience

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IMF Working Paper

Monetary and Capital Markets Department

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Abstract

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This note assesses the impact of the global financial risks on Oman's banking system and highlights the remaining risks. It concludes that the liquidity and prudential measures introduced by the authorities mitigated the adverse effects of the crisis on the banking system. Banks continue to make profits despite higher provisioning. Stress tests confirm the resilience of the banking system to credit and market risks. Banks have limited exposure to derivatives and the majority of the off-balance sheet exposures are conventional and relatively secure. Interest rate risks are within an acceptable range.

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I. INTRODUCTION

This paper assesses the impact of the global financial crisis on Oman's banking system and its exposure to the various types of risk. It also reviews some institutional features of the financial sector, highlighting areas for possible improvements.

Oman has no Islamic financial institutions and its financial sector comprises predominantly domestic banks. Banks in Oman have a business model strongly focused on corporate and retail lending, with limited investment banking. Exposure to derivatives is very small and the majority of the off-balance sheet items are conventional and relatively secure. The role of wholesale funding is also limited, with most liabilities comprising customer and government deposits.

The analyses show that the liquidity and prudential measures introduced by the authorities helped mitigate the adverse effects of the crisis on the banking system. Banks continue to be profitable despite a recent sharp increase in provisioning.

The resiliency of the banking system has been assessed through a stress test of banks' exposures to credit risk, which, in light of the banks' prevailing business model, is by far the main source of risk. Sensitivity to interest rate risk has also been assessed. The banking system is adequately capitalized and its resilience to credit risk and macroeconomics shocks is confirmed by the results of the broad stress test exercise carried out on the banks' loan portfolios. Also, interest rate risk appears to be within an acceptable range while exposure to market risk is negligible.

Despite its resilience, evolution of credit risks depends on the development of economic conditions in the country, whose possible deterioration might exacerbate risks arising from the real estate sector and the high leverage of households.

Omani banks appear to be relatively cost efficient, although there is room to improve the effectiveness of pricing of risks and their management capabilities. Some institutional features would also need to be improved to provide banks and financial institutions with proper incentives for better credit allocation and more efficient risk management.

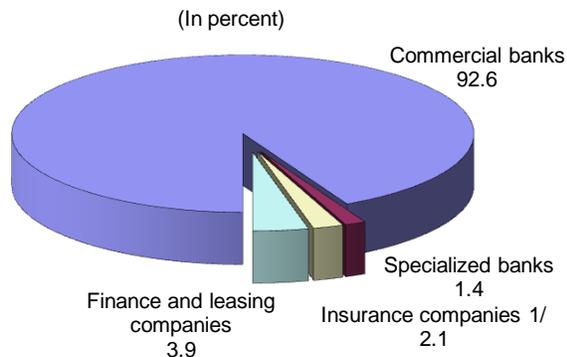
The rest of the paper is organized as follows. Section II provides a description of some stylized characteristics of Oman's financial system. Section III studies the different risk profiles of Omani banks: profitability and efficiency, credit risk, liquidity risk, interest rate risk, and other minor risks. Section IV analyzes the banking system's capital adequacy through a stress testing exercise. Section V discusses some institutional issues in the financial system. Section VI presents the conclusions.

II. FINANCIAL SYSTEM: STYLIZED FACTS

A. Financial System Structure

Oman's financial system is dominated by the banking sector. At end-2008, 17 commercial banks accounted for 93 percent of financial system assets (about Omani rials 15 billion).² Other institutions included two government-owned credit institutions—specializing, respectively, in housing finance and loans to development projects—representing about 1.5 percent of total assets; 23 insurance companies—of which 11 are domestic—accounting for 2 percent of total assets; and a number of financial companies—operating mainly in retail financing, leasing, and factoring—whose share of assets is 4 percent.³

Figure 1. Oman: Sectoral Composition of Financial System's Assets, December 2008



Sources: Central Bank of Omna; Axco; and authors' estimates.

1/ Data for insurance companies are referred to 2007.

The banking system is dominated by local banks.⁴ Of the seven domestic banks, six are listed

² Since 1986 the Omani rial has been pegged to the U.S. dollar at a fixed exchange rate of rials 0.3845 per U.S. dollar.

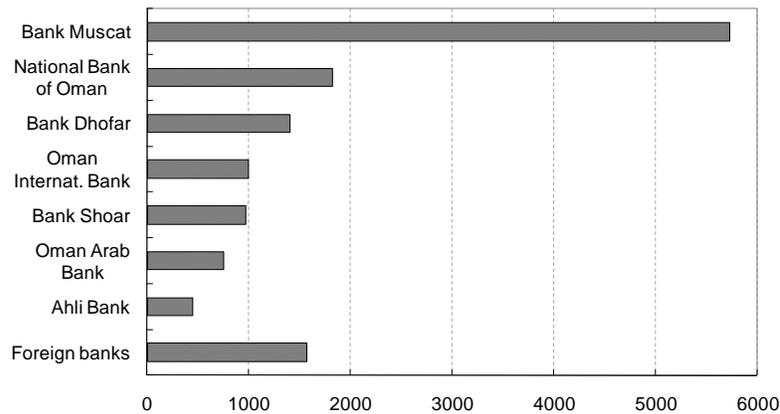
³ According to data by Axco (2009), the insurance sector in Oman, although growing, continues to be relatively small with low market penetration. In 2007, market premia in Oman accounted for 1.2 percent of GDP, compared to 2 percent for Bahrain and the United Arab Emirates (U.A.E.). For Qatar however, the premium was below 1 percent of GDP in 2006. The largest share of premium income comes from the nonlife business, which accounts for 81 percent; with the life insurance accounting for the remaining. Pension funds are fully state-owned and, therefore, are not considered in this analysis.

⁴ Licensing of banks is considered on the basis of internally evolved criteria, which take into account the ownership structure; fit-and-proper criteria for the Board members and senior management staff; bank's strategic and operating plans; internal controls and risk-management functions; projected financial condition of the entity; and the capital base. With respect to branches of foreign banks, the home-country supervisor's approval is also obtained before granting a license. Licensing of new banks and rejection of any application for license is considered by the Board of Governors and decisions are taken after considering various relevant factors. The minimum capital required for a local bank is rials 100 million and for a foreign bank is rials 20 million.

at the Muscat Securities Market (MSM).⁵ Two of the 10 foreign banks are from India, two from the United Kingdom, two from Iran, one from Pakistan, and three from the Middle East region. Considering their small share of 11.5 percent in total banking system assets, foreign banks do not appear to be a potential threat to the stability of the banking system.⁶ Moreover, in light of the long-lasting presence of most of the foreign banks and the strength of existing relationships, the likelihood of foreign banks pulling out from the country, and thus posing a credit constraint, also appears to be relatively low. It is noteworthy that 7 of the 10 foreign banks have been operating in the country for more than 30 years.

Figure 2. Oman: Banks by Assets, June 2009

(In millions of Omani rials)



Sources: Country authorities; and Balance sheet data.

A significant share of the banking system is state-owned. Two out of seven domestic banks are fully privatized. The share of government or quasi-government ownership at bank-level ranges between 7 percent and 43 percent, with the government participating in the three largest banks with shares of 43 percent, 23 percent, and 27 percent respectively. Government and quasi-government institutions own more than 26 percent of the assets of the banking system. This is in line with the structure in other GCC countries, whose banking sectors show significant public and quasi public sector ownerships, ranging between 13 percent in Kuwait and 52 percent in the U.A.E..⁷ The analysis in this paper does not distinguish between state owned and non-state owned banks, in light of the uniform regulatory regime for both groups, hence there is little reason for any significant differences in their performance and risk

⁵ The MSM is small in terms of both the number of listed companies (122) and market capitalization (about 35 percent of GDP). Banks have a weight of approximately 50 percent in the market index.

⁶ The potential attractiveness of Oman for foreign banks could improve in light of the January 2010 unification of the tax rate for foreign and domestic companies at 12 percent.

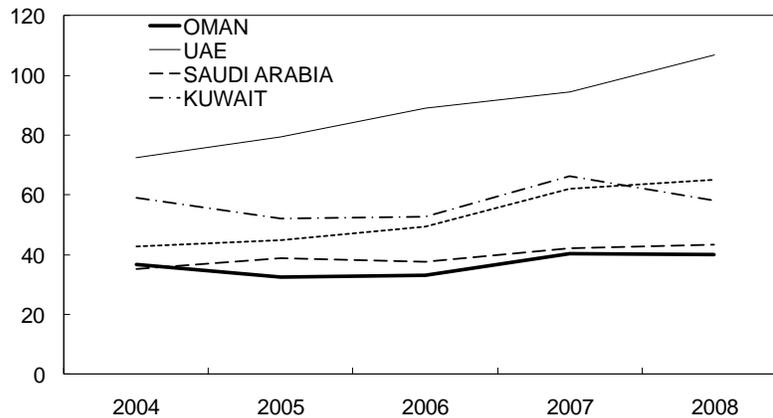
⁷ See Al-Hassan A., Khamis M. and Oulidi N., (2010) for further details on the banking systems' ownership structure in the GCC.

exposures on account of the ownership differences.

The banking system is concentrated and lacks depth compared to the other GCC banking systems. At end-June 2009, the three largest banks accounted for 65 percent of total assets and 64 percent of total deposits of the banking system. At end-2008, the total credit-GDP ratio was 40.2 percent, not substantially different from those observed in previous years, and substantially lower than several other GCC countries.

Figure 3. Bank Credit in the GCC Countries, 2004–2008

(In percent of GDP)

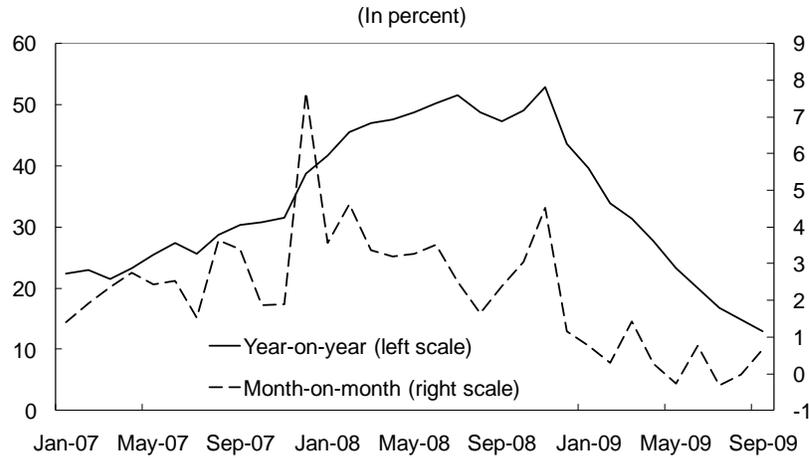


Sources: IMF World Economic Outlook; and authors' estimates.

B. Banking System Assets and Liabilities

Banking system assets grew slowly in the first three quarters of 2009, compared to the previous years, reflecting the retrenchment of foreign interbank and investment assets as a consequence of the crisis. Year-on-year growth of credit to the private sector remained subdued, both as a consequence of lower demand and greater risk-aversion by banks.

Domestic credit is the major component of banking system assets. At end-September 2009, the portfolio of loans accounted for 69 percent of the system's assets with investments, including certificates of deposits (CDs) issued by the central bank, accounting for 12 percent, interbank assets for 11 percent.

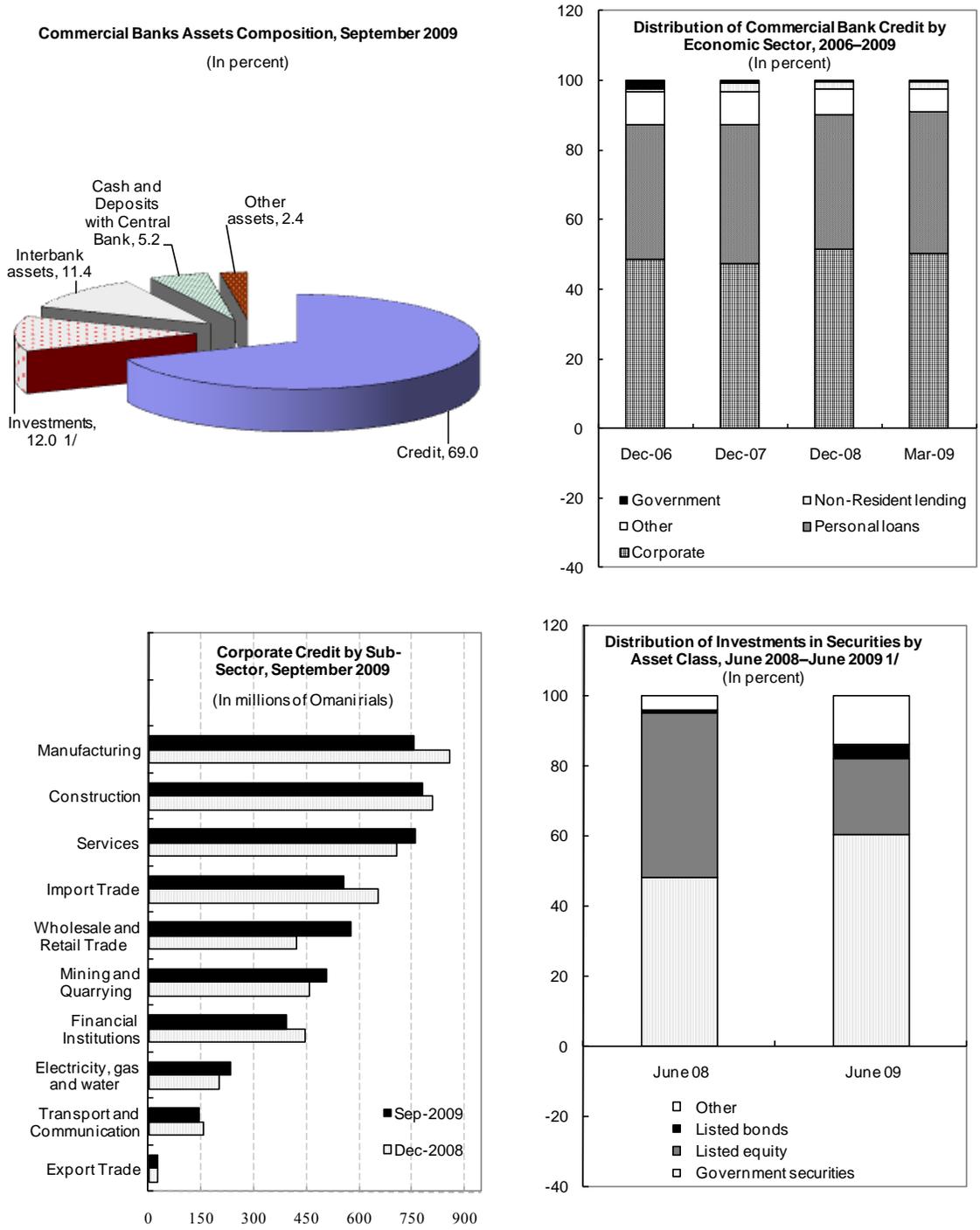
Figure 4. Oman: Private Sector Credit Growth, 2007–2009

Source: Central Bank of Oman.

Loans to the corporate and retail sectors constitute 91 percent of total credit. At end-September 2009, the shares of corporate and personal loans were 50 percent and 41 percent, respectively, of the total credit portfolio of banks.⁸ The most important sector-based exposures within the corporate sub-portfolio are represented by construction (9 percent), manufacturing (8 percent), services (8 percent), and import trade (6 percent).

⁸ Limits are set by the central bank for retail loans. The amount of personal loans that can be extended by each bank is limited to a maximum of 40 percent of total loans and additionally home mortgage loans are capped at 10 percent of total loans (loans to banks' staff are not subject to those limits). Given the demand for consumer financing, personal loans have tended to be at the ceiling or close to it for several banks, where mortgage loans have a minor role in banks' loan portfolios, as customers often finance housing purchases using personal loans. In order to contain the cost of personal loans, which could be extremely high, given the existing constrained supply, authorities also set the maximum interest rate that can be charged, currently at 8 percent per annum. The ceiling has been calculated by the central bank on a cost-plus basis, which includes the cost of capital, borrowing, deposits, operating expenses and a return on equity of about 15 percent. Banks typically tend to charge the ceiling rate for such loans. Given the high demand for personal loans, banks have the tendency to easily grant such loans, particularly since this type of loan is repaid by pre-assignment of salary. About 76 percent of personal loans (including mortgage loans) have been granted on the basis of assignment of salary: only 11 percent are collateralized by houses and 2 percent by deposits. A smaller percentage is guaranteed by automobiles.

Figure 5. Oman: Banks Assets Composition



Sources: Central Bank of Oman; and balance sheet data.

The value of investment portfolios, already relatively limited, almost halved between June 2008 and June 2009 as a consequence of the global financial crises.⁹ The combined investment portfolio of the four largest commercial banks declined by 61 percent between June 2008 and June 2009.¹⁰ In relative terms, investments in securities also declined from 8 percent to 3 percent of total assets during the same period. Between 2008 and 2009, a relevant change in portfolio composition has occurred with a shift toward government securities and a reduction of equity investments, reflecting, in part, valuation losses. At the end of June 2009, the already large share of the investment assets represented by government securities had increased up to 60 percent of total investments. The share of the equity investments listed on the Muscat Securities Market was 22 percent of the overall portfolio investments.

Wholesale funding plays a limited role in the structure of banking liabilities which are mainly deposits. At the end of September 2009, deposits accounted for 63 percent of total liabilities, including capital. Deposits of the government and other public sector entities accounted for 27 percent of the total (26 percent at the end of 2008 and 18 percent at the end of 2007). Bond issuances as a longer-term source of funding have been minimal.

The share of foreign assets and liabilities in banks' balance sheets is small. At end-September 2009, foreign assets were 14 percent of total assets, compared to an average 16 percent in 2007–08. The share of foreign liabilities remained stable at 17 percent of the total liabilities. Almost 78 percent of foreign assets and 91 percent of foreign liabilities were interbank transactions. The net foreign asset position had shrunk from the second quarter of 2009 from 2.2 percent to 0.3 percent of total system assets.

III. BANKING SYSTEM PERFORMANCE AND RISKS

A. Profitability and Efficiency

Profitability has been stable since 2004 and banks recorded a good stream of revenues even in 2008, with a return-on-equity of 12.6 percent. These trends continued in the first quarter of 2009, confirming Omani banks' relative immunity from the global financial crisis, mainly due to their business model, which is largely focused on traditional commercial banking, and modestly inclined to be attracted by the mermaids of the investment banking business (see Appendix 1 for an analysis of the impact of the global crisis on the corporate sector). The limited impact is not surprising given also that Oman's financial sector is not very closely connected to the U.S. and other advanced countries' financial systems, where the crisis originated.

⁹ Excluding CDs issued by the Central Bank of Oman with maturity shorter than 90 days.

¹⁰ The four banks considered account for 75 percent of the banking system's total assets.

Policy interventions have nonetheless been adopted by the central bank in response to the global crisis. The limit to lending based on the loan-to-deposit ratio was increased from 85 percent to 87.5 percent and the reserve requirement on banks was lowered from 8 percent to 5 percent to provide liquidity to banks to facilitate lending. Furthermore, in order to prevent possible shortage of U.S. dollar liquidity in Omani banks, a US\$2 billion lending facility was set up, which, nonetheless, has been hardly used.¹¹ Implicit governmental support came also in the form of higher government deposits (starting from already very high levels), which compensated for the lack of growth of private deposits.¹²

Profitability declined in the second quarter of 2009, mainly as a consequence of the increase in loan-loss provisioning by banks to face increased risks in the credit portfolio. The six largest banks registered a 7 percent year-on-year decline in net profits at end-June 2009. The negative effect of increased provisioning has, however, been smoothed by the positive dynamic of the net interest margin, which increased by 19.2 percent during the same period. Investment income, although a small share of profits, declined for all domestic institutions between June 2008 and June 2009, with only one bank reporting a small loss. Even at end-2008, all but one bank had recorded a net positive income from investments, after having accounted for some gross losses. Despite the decline in profitability observed for some banks in the second quarter, profitability at the system level at end-June 2009 is in line with that observed in 2008. The annualized return on assets is estimated at 2.2 percent at end-June 2009, compared to 1.7 percent in 2008, while the annualized return on equity is estimated at 14.2 percent (12.6 percent in 2008).

Table 1. Oman: Banking System Performance, 2007–2009

(Six listed banks in millions of Omani rials)

	2007	2008	H12009	Q1 2008	Q2 2008	Q3 2008	Q4 2008	Q1 2009	Q2 2009
Assets	8,460.2	11,656.6	11,377.0						
Net Profits	205.2	224.5	122.9	61.9	68.5	67.3	26.7	79.7	43.2
Net interest income	236.9	301.5	166.3	67.2	72.2	77.1	84.9	79.0	87.3

Sources: Balance sheet data and authors' estimates.

¹¹ Only two banks requested financing in U.S. dollars from the central bank, and US\$1.9 billion out of the US\$2 billion available remained unused and are still available.

¹² In order to support liquidity in the local stock market, the government also sponsored the establishment of a public-private partnership, with rials 150 million of funds, aimed to act as market maker. Private partners of the government are the major local banks. Doubts on the effectiveness of this initiative are cast by the fact that such an intervention does not seem to entail a clear exit strategy. At the moment, the vehicle established is no more acting as a market maker but as an investment fund, analogous to an initiative set up to face the 1998 market crash, which was never withdrawn, resulting in the government holding stocks of listed companies.

Table 2. Oman: Profitability Ratios, 2008–2009

(In percent)

	2008	1H 2009	GCC Average 2008 2/
Return on Assets 1/	1.7	2.2	2.2
Return on Equity 1/	12.6	14.2	20.4

Sources: Central Bank of Oman and authors' estimates.

1/ Annualized.

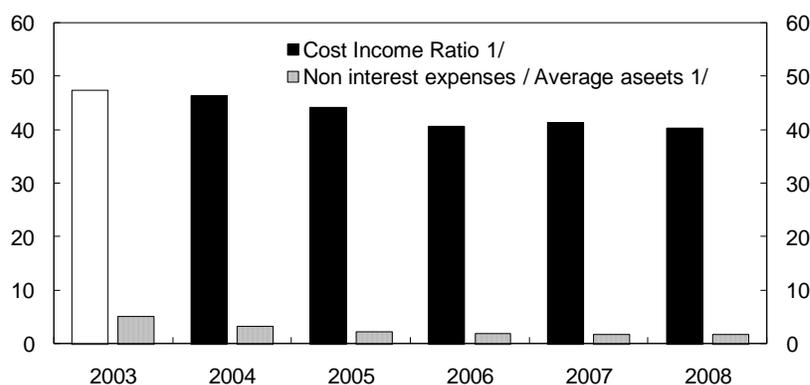
2/ For some countries, the data is for the second or third quarter of 2008.

Banks seem to have taken most of the hit of the valuation losses on their investment portfolios. The negative impact of the crisis has mostly been absorbed by the balance sheets, as listed securities are generally kept in the available-for-sale portfolios and are largely valued at fair value. In view of the recent recovery of the markets, no further major negative impact is expected from the stock of portfolio investments of Omani banks in the near future.¹³

Bank efficiency improved further in 2008. Omani banks are conducting business in a cost-effective way, limiting non-interest expenses and operating costs. The cost-to-income ratio for the banking system has progressively declined from 47.4 percent in 2003 to 40 percent in 2008. Similarly, non-interest expenses as a proportion of total assets also recorded a secular decline.

Figure 6. Oman: Banking Sector Efficiency, 2003 - 2009

(In percent)



Sources: Zawya; Central Bank of Oman; and authors' estimates.

1/ For six largest banks.

¹³ It should be noted that Omani banks' financial statements are not always fully transparent in presenting information on investment portfolios and related results. For instance, while most of the banks do break down their investments by asset type and sector, some banks miss doing so, making their data less intelligible.

Inefficiencies exist in pricing credit risk. While retail lending occurs at an interest rate close to the regulatory ceiling, given the limit on supply imposed by the central bank, part of the corporate lending—especially the lending taking place in foreign currency—appears to benefit from very low rates.¹⁴ In fact, lending in foreign currency had a weighted average interest rate of 2.96 percent in September 2009,¹⁵ far below the 7.4 percent observed for the lending in local currency.¹⁶ The existing differential can hardly be explained by differences in the level of interest rates in the two currencies involved (Omani rials and U.S. dollars), given that the local currency is pegged to the dollar and there are no devaluation pressures. Even the creditworthiness argument (that safer borrowers are typically borrowing in foreign currency while riskier borrowers are seeking local currency financing) does not justify the existing spread, considering that the differential between the average lending rate in local and foreign currency has dramatically widened since January 2008, but since then no major recomposition in banks loans portfolio has taken place. The average differential has moved from 139 basis points (bp) in the period May–December 2007 to 376 bp in the period January 2008–September 2009. In the latter period, while foreign currency lending rates fell in line with international interest rates, local lending rates followed a divergent trend notwithstanding the currency peg. The widening in the spread might be a consequence of potential inefficiencies in the pricing of credit risk.¹⁷ Limited competitiveness and significant concentration, forces the pricing of personal loans (all in local currency) to be determined *de facto* by the existing limits on quantity and price rather than by the bank’s assessment of borrower credit worthiness. Hence, a cross-subsidization of foreign currency borrowers from retail borrowers can also not be excluded.

Table 3. Oman: Concentration of Commercial Banks Credit by Interest Rate and Currency Denomination, September 2009

(Percent composition)

	Nil	0-5%	5-7%	7-8%	8-9%	9-10%	Over 10%	Total
Lending in local currency	0.8	6.1	17	43.1	25.3	4.5	3.3	100
Lending in foreign currency	0.3	88.8	7.3	2.2	0.6	0.3	0.5	100

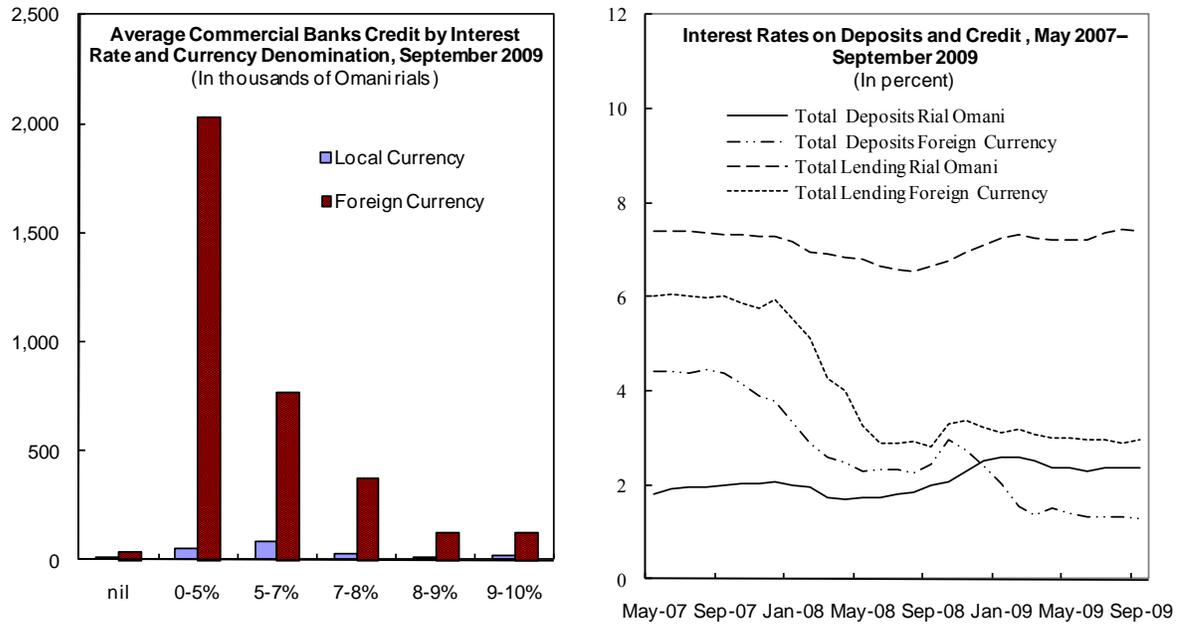
Sources: Central Bank of Oman and authors' estimates.

¹⁴ See Section 1.2 for details on existing limits on credit.

¹⁵ Slightly lower than the comparable 10 -year T-bond yield.

¹⁶ Lending in foreign currency in March 2009 accounted for 41.8 percent of the total corporate lending.

¹⁷ There is a view that the markets for local and foreign currency borrowings are segmented. The foreign currency borrowers seek financing at globally competitive rates and banks are able to provide financing at such rates, because they are able to finance themselves at international rates. In the local currency market, there is shortage of long-term financing for banks; hence, the loans extended by banks typically price in a large rollover risk premium.

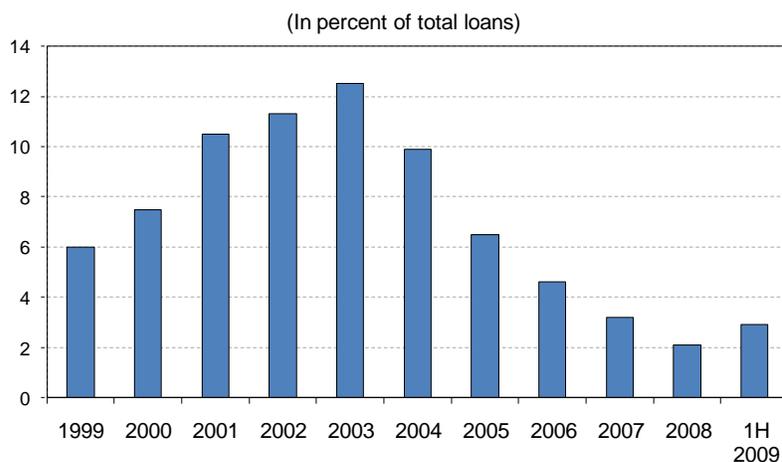
Figure 7. Oman: Banks Interest Rates

Sources: Central Bank of Oman; and authors' estimates.

B. Asset Quality and Credit Risk

The main source of vulnerability in the banking system is credit risk, given that credit is the main driver of banking activity. In the last few years, the nonperforming loans (NPLs) declined to 2.1 percent of gross loans at end-2008. In the first half of 2009, signals of deterioration in credit quality emerged, inverting the long-term trend of credit quality improvement; at the aggregate level, NPLs increased to 2.9 percent of total gross loans. The deterioration in credit quality is still relatively limited and the coverage provided by the loan-loss reserves remains adequate.

Provisioning for impaired loans has increased, but the level of coverage has decreased. Data at end-June 2009 for the banking system show that provisioning has increased by 24.6 percent with respect to the level at December 2008. Loan-loss reserves built so far have grown in absolute terms from the December level, but are now equal to 114 percent of impaired loans, which compares to a level 127 percent shown six months earlier. Banks in Oman have significantly higher provisioning rates compared to the GCC average.

Figure 8. Oman: Gross Nonperforming Loans, 1999 –2009

Sources: Global Financial Stability Report; and Central Bank of Oman.

Table 4. Oman: Nonperforming Loans and Provisioning, 2008 - 2009

(In percent)

	2008	1H 2009	GCC Average 2008 1/
Nonperforming Loans	2.1	2.9	2.1
Provisioning Rate	127.3	113.8	105.7

Sources: Central Bank of Oman and authors' estimates.

1/ For some countries, the data is for the second or third quarter of 2008.

Part of the increase in provisioning for bad loans is due to the exposure of Omani banks to two troubled Saudi corporations, SAAD Group and Ahmad Hamad Algosaiabi & Brothers. Although having a relatively limited cross-border exposure,¹⁸ mainly concentrated in the region,¹⁹ the Omani banks' exposure to the two troubled groups and to the two banks linked to them (The International Banking Corporation and Awal Bank in Bahrain) amounted to Omani rials 76.5 million, or 4 percent of the banking system's foreign assets as of June 2009. The bulk of the exposure (about rials 67 million²⁰) to the above-mentioned troubled conglomerates is concentrated in the largest Omani bank, Bank Muscat, for which the

¹⁸ Rials 440 million, or 3.2 percent of system's assets, at June 2009. Nonresident exposure is subject to individual and aggregate limits of 5 percent and 30 percent of net worth respectively.

¹⁹ Domestic banks have branches operating in India, Pakistan, Saudi Arabia, and the United Arab Emirates, with assets of rials 454 million at end of June 2009.

²⁰ Of which rials 17 million is through its associate, BMI.

exposure accounted for 1.1 percent of its assets as of June 2009.²¹ Related provisioning accounts for about 50 percent of the exposure. The absolute value of Bank Muscat's NPLs jumped by 132 percent, from 1.7 percent to 3.9 as percent to total loans, between December 2008 and June 2009.

A potential source of risk for banks' loan portfolios is the deterioration of exposures related to the real-estate sectors and the reduction of the ability of excessively indebted households to repay their loans.²²

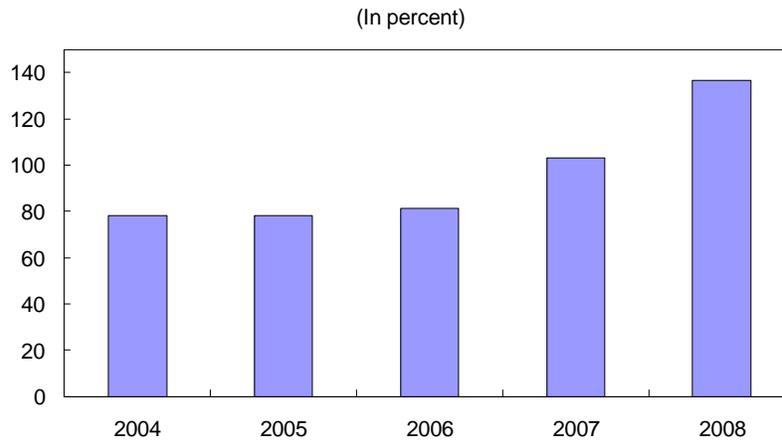
Omani households' exposure to banks has registered a substantial increase in absolute value in recent years. The level of personal loans granted by the banking system has increased from rials 1.3 billion in 2003 to 3.9 billion in September 2009. Most of such exposure is collateralized by the pre-assignment of salaries.

The level of household indebtedness has grown more than the estimated level of disposable income.²³ The ratio of household debt to disposable income has grown from 78 percent in 2004 to 137 percent in 2008. Notwithstanding the quality of the collateral granted to the banks, an excessive burden of debt on a borrower could always result in a strain on debt servicing capacity.

²¹ As referred by Reuters News on September 28, 2009, reporting declarations on the matter by the Central Bank of Oman.

²² The exposure to the real estate sector is less than 6 percent of the total portfolio, although the effective exposure could be higher, as personal loans also finance housing purchases. In addition, exposures to corporates in the construction sector should be considered.

²³ Leverage is measured as the ratio of debt to personal disposable income. Wages and benefits in the public sector have been used as a proxy for disposable personal income for public employees. The same measure has also been used to estimate a proxy for the stock of salaries in the private sector, assuming the stock of private wages was 5 percent higher than that of public wages (results are not very different using alternative differentials, such as 10 percent or 15 percent). Disposable income includes also a proxy for financial income, estimated assuming that 50 percent of banking sector deposits in rials is held by Omani employees and the rest by corporate. The tax rate has been assumed to be zero percent. For comparison, U.S. household leverage was 55 percent in 1960, 65 percent in mid-1980s, and at an all time high 133 percent in 2007 (see Federal Reserve Bank of San Francisco (2009)).

Figure 9. Oman: Households Leverage, 2004–2008

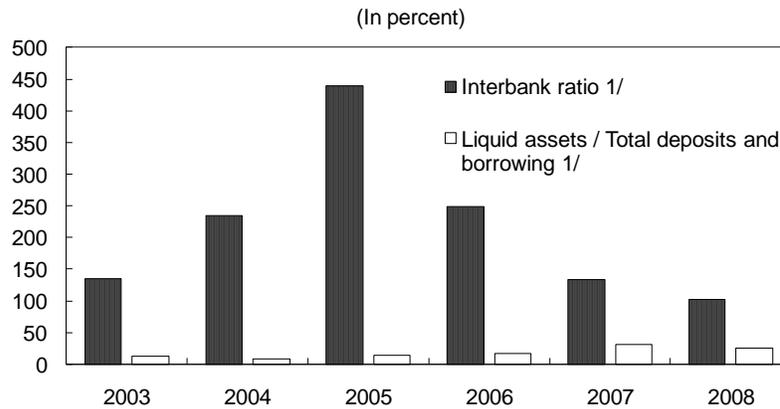
Sources: CBO; Ministry of National Economy and authors' estimates.

C. Liquidity Risk

Liquidity in the system remains adequate.²⁴ Although the ratio of liquid assets to deposits and short-term funding for the six largest banks decreased between 2007 and 2008 from 33.2 percent to 24.9 percent, a more in-depth analysis of the composition of assets and liabilities shows that assets that are readily marketable are estimated to be 67 percent of short-term funding and demand liabilities. In this calculation, liquid assets include cash and balances with the central bank as well as investments in government securities and deposits with other banks. Short-term funding excludes deposits from government and public sector entities. These should not, in fact, be considered funding at risk of withdrawal in a scenario where one or more banks or the system itself are in need of liquidity. Banks' liquidity has been strongly supported by government and public sector entities' deposits. Such deposits increased from 21 percent to 27 percent of total deposits between end-2007 and September 2009.

Liquidity funding risk is therefore not an issue of concern for Omani banks, as the core source of funding has proven to be stable. Private deposits have grown through the first half of 2008 and have remained stable thereafter. Deposits by government and public entities have increased their contribution to banking system funding, thus providing a further growth of financing until the end of 2008, and supporting stability thereafter. Overall, Omani banks maintain a satisfactory share of liquid assets with stable sources of funding.

²⁴ Liquidity risk refers mainly to the possibility of the sudden withdrawal of interbank and customers' deposits.

Figure 10. Oman: Banks Liquidity Position, 2003 - 2008

Sources: Zawya; Central Bank of Oman; and authors' estimates.

1/ For six largest banks. The interbank ratio is the interbank assets divided by interbank liabilities expressed as a percent.

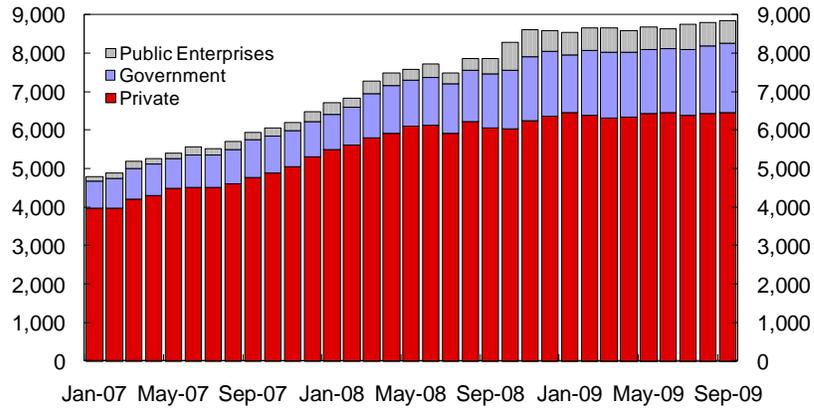
Nevertheless, a greater diversification of funding would be advisable. Increasing the duration of liabilities would help reduce maturity mismatches.²⁵ Although this could be pursued by major banks establishing medium-term loan funding programs, the absence of a sovereign yield curve in the country makes pricing of any bond, as well as of virtually most of the existing financial products, difficult and, to some extent, arbitrary. The lack of a benchmark yield curve therefore makes long-term financing for banks and corporates more difficult.

The structural liquidity support provided by government and public enterprises deposits might deter banks from establishing a sound liquidity management environment. Banks may not have adequate incentives to monitor and fund their liquidity needs effectively. This situation, although not worrisome in terms of banking system stability, is not sound as far as banks' risk-management practices are concerned. Omani banks lack appropriate risk management tools to help them managing liquidity more efficiently under normal circumstances, and to cope appropriately with liquidity constraints under distressed conditions. Such a situation may also result in an inefficient allocation of liquidity within the system at an aggregate level. It would therefore be more appropriate for the government—in normal market conditions—to manage its liquidity within an account with the central bank, without impacting the level of liquidity in the financial system. The actual arrangement makes it difficult and costly for the central bank to effectively control liquidity for monetary policy purposes.

²⁵ Bank Muscat has been issuing long-term CDs in the market on a regular basis. Recently, it issued seven-year subordinated bonds at 8 percent yield, which seems to be out of alignment compared to a partial one-off refinancing of government bonds for rials 50 million at 2 percent yield.

Figure 11. Oman: Banking System Deposits, 2007– 2009

(In millions of Omani rials)



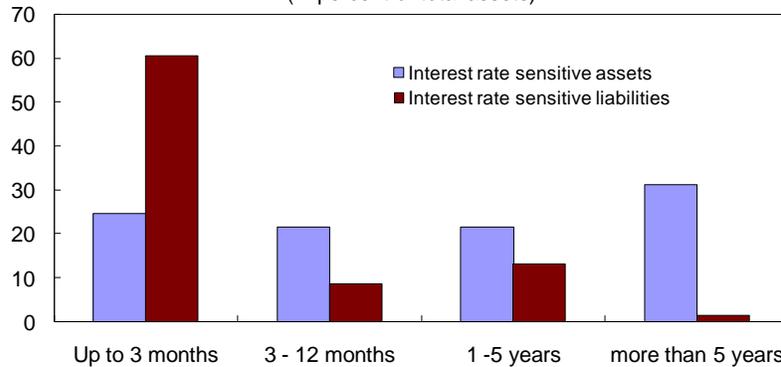
Source: Central Bank of Oman.

D. Interest Rate Risk and Maturity Mismatch

Omani banks face some interest-rate risk, which is within an acceptable range of risk taking to run the business.²⁶ Data for the seven domestic banks allowed estimation of the difference between the average maturity of assets and that of liabilities of less than two years. Rate-sensitive assets with maturities between one and five years are 21.5 percent of total assets, whereas those with maturities over five years constitute 31.2 percent of total assets.

Figure 12. Oman: Banking System Assets and Liabilities by Maturity Buckets, December 2008 1/

(In percent of total assets)



Sources: Bankscope; and authors' estimates.

1/ For seven domestic banks.

²⁶ Interest-rate risk is defined as the potential effect of interest rate changes on banks' portfolios.

An aggregate analysis of the interest rate exposure of the domestic banking system over the one-year horizon shows that an interest rate change of 100 bp would result in a 13 percent change in the net interest margin.²⁷ This can be considered an acceptable deviation from the current level of interest income, since the sensitivity of deposits to interest rate changes in the exercise has been assumed to be one, while in practice it would normally be lower. About 85 percent of system assets and 83 percent of liabilities can be estimated to be interest rate risk sensitive.

Table 5. Oman: GAP Analysis 1/

(In millions of Omani rials and percent)

1 Year Cumulative Gap	(4,562)
Net Interest Income Change 2/	13.5

Sources: Bankscope and authors' estimates.

1/ Seven domestic banks.

2/ Assuming of a parallel shift of interest rates by 100bp, equally affecting all sensitive assets and liabilities. Percent of net interest income in absolute value.

E. Other Risks

Market risks appear to be limited and are not likely to pose significant risks for the stability of the banking system.²⁸ In June 2009, trading portfolios were less than 3 percent of total assets for the four largest banks. The portfolio composition suggests that market risk in the current situation should not be a major concern, given that more than 60 percent of the portfolio is comprised of government securities. Derivatives positions of a limited magnitude are held for hedging purposes only, as current regulations prohibit holding of financial and credit derivatives for trading purposes. Accordingly, the risk related to derivatives position is primarily counterparty risk. Omani banks should take on a higher amount of market risk only to the extent that their risk-measurement capabilities allow them to properly manage and monitor exposures, including counterparty risk. The supervisory authority should review market risk management frameworks at the largest banks, considering, for the most active banks, possible migration to more comprehensive methods for quantifying risk exposure and the related capital requirements.

The size and composition of the off-balance sheet exposures do not indicate the presence of a significant risk. Off-balance exposures correspond to about 150 percent of capital and are mainly represented by guarantees, collateralized letters of credit, and undrawn loan commitments. Banks should nonetheless monitor and review their off-balance sheet exposures, so as to provision adequately for possible losses. The level of riskiness involved should also be reviewed in light of the contractual features of the different positions in

²⁷ This assumes that the composition of the banks' balance sheets remains constant.

²⁸ Market risk refers to the effect of potential changes in the value of the banks' investment portfolios.

portfolio (e.g., committed credit lines entail significantly more risk than uncommitted credit lines).

Banks in Oman do not seem to incur excessive operational risk exposures. The relatively simple operating environment helps to reduce banks' exposures. Nonetheless, banks do not always have adequate risk-management systems and, therefore, cases of mismanagement of risk could likely occur at the micro level, without necessarily implying risks for bank's stability. Banks compute their capital requirements for operational risk under the Basic Indicator Approach (BIA).²⁹ Such an approach has to be considered adequate only for small-sized banks with a very simple business structure. Nonetheless, there is scope for periodically reviewing the appropriateness of the BIA for the largest institutions. Indeed, Basel II envisages that internationally active banks and banks with significant operational risk exposures adopt an approach that is more sophisticated than the BIA and that is appropriate for the risk profile of the institution.

IV. CAPITAL ADEQUACY AND STRESS TESTING

A. Capital Adequacy: Status Quo

Banks are adequately capitalized. The overall banking system appears stable and has exhibited strong resilience to the global financial crisis. The strength and soundness of the banking system are generally in line with the GCC average. The system-wide capital adequacy ratio (CAR) stood at 15.5 percent at end-September 2009 (14.7 percent at end-2008), compared to the minimum regulatory requirement of 10 percent.³⁰ The quality of capital of the banking system is good. No hybrid instruments have been issued or included in the regulatory capital, and the subordinated debt in the system stands at 12 percent of equity. When a more conservative measure of CAR is used, the evaluation remains positive; the

²⁹ Banks using the BIA must hold capital for operational risk equal to the average over the previous three years of a fixed percentage of positive annual gross income. Figures for any year in which annual gross income is negative or zero should be excluded from both the numerator and denominator when calculating the average. For 2007, the latest period for which information is available, operational risk accounted for 6 percent of total risk weighted assets of banks.

³⁰ Before 2007, the minimum capital requirement was at 12 percent, mainly to provide a greater cushion against macroeconomic volatility and also due to the non adoption of capital charge for market risk. The central bank, which introduced the Basel II framework in 2007 (standardized approach for credit and market risk and basic approach for operational risk) lowered the minimum capital requirement to 10 percent to mitigate the effect of the increased capital requirements resulting from the application of charges for market and operational risk (although market-risk rules for capital requirements were already established since 1996 by the Basel Committee, the CBO introduced capital requirements for market risk only with the introduction of the Basel 2 framework in 2007).

Tangible Common Equity Ratio at the end of 2008 was at 13 percent (from 14.8 percent in 2007).³¹

Table 6. Oman: Banking System Capital Adequacy, 2004–2009

(In percent)

	2004	2005	2006	2007	2008	1H 2009	GCC average 2008 3/
Capital Adequacy ratio	17.6	18.1	17.2	15.9	14.7	15.5	16.3
Tangible Common Equity ratio 1/	12.2	15.1	12.9	14.8	13.0
Leverage ratio 2/	8.3	7.2	8.1	7.1	7.7

Sources: Central Bank of Oman; Bankscope; and authors' estimates.

1/ Domestic banks only.

2/ Ratio between total assets and tier 1 capital.

3/ For some countries data is for the second or third quarter 2008.

B. Stress Testing Capital Adequacy: Assumptions and Methodology

Banking system resilience has been further investigated through a non-probabilistic bank-by-bank stress test exercise for the seven domestic banks, using as the baseline scenario the situation as of December 2008.

In order to carry out the analysis, we first identify risks considered as a potential source of strain on bank solvency, based on the current credit, market, and liquidity exposures.

Market risk exposure, defined as the possible adverse changing in value of the trading portfolio, can be considered to be negligible, especially after the decrease in value occurred between 2008 and the June 2009 and the substantial shift of the portfolio toward government securities (see Section II.B). Liquidity risk appears not to be an issue of concern to banking sector stability and solvency, given the abundant liquidity support that is steadily provided by the government to the banking sector (see Section III.C).

We hence focused our analysis on credit risk, the largest and most relevant source of possible risk for the Oman banking sector. The purpose of the stress test is therefore to provide a broad assessment of tail-risks in the credit portfolio of Omani banks.³²

³¹ The tangible common equity ratio (TCE ratio) is a measure of the financial soundness of banks. It is more conservative than the usual capital adequacy ratios (including tier 1), because it excludes preference share capital and all intangible assets, such as goodwill, which would have little or no value in bad times. The Tangible Common Equity (TCE) ratio is usually computed as follows: Tangible Common Equity / Tangible Assets where: Tangible Assets = Total Assets – Intangible Assets – Goodwill; and Tangible Common Equity = Shareholders Equity – Intangible Assets – Goodwill. See Winkler R. (2009), Dash E. (2009), and Enrich D. and Langle M. (2009)) for a discussion of the relevance of this ratio during the U.S. financial crisis..

³² The stress test relies on publicly available data from banks' balance sheets. That said, data used are consistent with supervisory information, given that banks' balance sheet are subject to the approval of the central bank.

We looked at the credit risk scenario from two different perspectives: i) a generalized worsening resulting in an homogeneous increase in NPLs across the banking sector, and ii) a deterioration of banks' credit portfolio stemming from corporates' difficulties in servicing their debt exposures with banks.

For the first broad test, the scenarios were selected to include a series of possible increases in the ratio of NPLs to total loans, ranging from a mild worsening of the credit-risk scenario to a severe one (NPLs ratios ranging from 2.5 percent to 20 percent), the latter with an arguably low probability. These default-rates encompass potential tail risks as also resemble the NPL rates experienced by the banking system in 2001–2002, although such scenarios are now unlikely to materialize, given the stronger supervisory regime.³³

For the second test, we indirectly explore the credit-worsening scenarios for banks that could arise from corporate sector vulnerabilities to short term interest rate and to income shocks. For this purpose, the interest-paying capacity of the corporates was stressed by increasing short term interest rates by 200 points to 500 basis points from current levels, and by assuming a negative income shock of 25 percent.³⁴ 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.³⁵ For the purpose of this exercise it is assumed that if corporates are unable to generate funds to pay interest, loans to these corporates would eventually have to be classified as nonperforming loans on banks' balance sheets. We then estimated the impact of these shocks on the banking sector by i) further assuming that all corporate debt to banks, reported by listed Omani corporates, is provided by domestic banks and ii) by extrapolating results from listed corporates to all corporates loans granted by the banking sector.

The stress test assumed a loss-given-default (LGD) of 50 percent for loans to households and 70 percent for loans to corporates.³⁶

³³ In 2001–2002 default rates in the loan portfolio for the Omani banks reached 10.5 and 11.3 percent respectively.

³⁴ The exercise assumes firms do not use assets (like cash) for debt repayment, and that 20 percent of long term debt is affected by short-term interest rates.

³⁵ Oura, Hiroko and Petia, Tapolova (2009) used this method to stress the debt distress in India's corporate sector.

³⁶ We considered these levels to be conservative enough. Altman (2009) reports recovery rates (with the recovery rate = $1 - \text{LGD}$) on average to be 56.3 percent on senior secured loans and 59.4 percent on senior unsecured loans (with the standard deviation being respectively 27.2 percent and 40.2 percent).

All assumptions, such as the LGD and the stress scenarios, have been applied homogenously across banks, irrespective of specificities pertaining to default and work-out histories. Total loans in the stress scenarios have been assumed at the same level as in the base scenario.

C. Stress Testing Capital Adequacy: Results

The results of the stress tests show that, at an aggregate level, risks are manageable. Only very severe stress scenarios, above the peak of NPLs ratio observed in the last decade, would likely cause system-wide strain.

Table 7. Oman: Banking System Stress Test 1/

	Baseline	Scenarios: Default Rate on Loans						
	2008	2.5%	5.0%	7.5%	10.0%	12.5%	15.0%	20.0%
Banks Regulatory Capital (RO million)	1,625	1,498	1,372	1,245	1,118	992	865	612
Banks Risk Weighted Assets (RO million)	11,482	11,356	11,229	11,102	10,976	10,849	10,722	10,469
Capital Adequacy Ratio	14.2	13.2	12.2	11.2	10.2	9.1	8.1	5.8
NPLs to total loans	2.7	5.2	7.7	10.2	12.7	15.2	17.7	22.7
Recapitalization needs (RO million)	0	0	0	5	57	129	225	443
Recapitalization needs (in percent of 2009 GDP)	0	0	0	0	0.3	0.7	1.2	2.3

Sources: Commercial banks 2008 financial statements; and authors' analysis.

1/ Results are based on broad system-wide assumptions which might not necessarily reflect banks' specific situation in terms of portfolio risk composition.

The default rate would have to rise by at least an additional 7.5 percentage points to potentially cause one bank to fall below the statutory CAR of 10 percent (at 9.5 percent), with other two banks being a few basis points above that level (respectively at 10.4 percent and 10.2 percent). In this situation, the minimum recapitalization needs would be equivalent to 0.02 percent of GDP. Even in such a scenario, which would imply a system-wide NPLs ratio of 10.2 percent, comparable to that observed in 2001, the CAR at system level would still remain at 11.2 percent, well above the statutory minimum.

Only a stress in the default rate of 10 percentage points, which would imply NPLs at 12.7 percent of total loans— in line with the maximum level of 12.5 percent observed in 2003 — would likely cause some strain to the financial system. Three out of seven banks would fall below the minimum level of regulatory capital (at 9.7 percent, 9.2 percent, and 8.4 percent). The system-level CAR would nonetheless remain above 10 percent. At this level of defaults and losses, recapitalization of about Omani rials 55 million (equivalent to 0.3 percent of GDP) would likely be needed.

Although unlikely, the worst-case scenario that has been used (an increase of NPLs by 20 percent) would cause the banking system to fall short of capital by a substantial amount. It would therefore need a recapitalization, in the magnitude of over 2 percent of GDP.

Table 8. Oman: Banking System Stress Test: Disaggregated Results 1/

	Scenarios: Default Rate on Loans						
	2.5%	5%	7.5%	10%	12.5%	15%	20%
NPLs (in percent of total loans)	5.2	7.7	10.2	12.7	15.2	17.7	22.7
Bank A	7.1	9.6	12.1	14.6	17.1	19.6	24.6
Bank B	5.2	7.7	10.2	12.7	15.2	17.7	22.7
Bank C	12.3	14.8	17.3	19.8	22.3	24.8	29.8
Bank D	4.2	6.7	9.2	11.7	14.2	16.7	21.7
Bank E	4.3	6.8	9.3	11.8	14.3	16.8	21.8
Bank F	2.6	5.1	7.6	10.1	12.6	15.1	20.1
Bank G	2.7	5.2	7.7	10.2	12.7	15.2	20.2
Capital Adequacy Ratio	13.2	12.2	11.2	10.2	9.2	8.1	5.9
Bank A	13.9	12.9	11.8	10.8	9.6	8.5	6.1
Bank B	11.9	11.2	10.4	9.7	8.9	8.2	6.6
Bank C	14.0	13.0	12.0	10.9	9.9	8.8	6.5
Bank D	12.1	11.2	10.2	9.2	8.2	7.2	5.1
Bank E	15.6	14.5	13.4	12.3	11.1	10.0	7.5
Bank F	11.6	10.6	9.5	8.4	7.3	6.2	3.8
Bank G	22.2	21.0	19.8	18.6	17.3	16.0	13.2
Recapitalization needs (in percent of 2009 GDP)	0.0	0.0	0.0	0.3	0.7	1.2	2.3
Bank A	0.0	0.0	0.0	0.0	0.0	0.1	0.3
Bank B	0.0	0.0	0.0	0.0	0.0	0.1	0.1
Bank C	0.0	0.0	0.0	0.0	0.0	0.1	0.1
Bank D	0.0	0.0	0.0	0.2	0.5	0.7	1.3
Bank E	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Bank F	0.0	0.0	0.0	0.1	0.1	0.2	0.2
Bank G	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Sources: Commercial banks 2008 financial statements; and authors' analysis.

1/ Results are based on broad system-wide assumptions which might not necessarily reflect banks' specific situation in terms of portfolio risk composition.

Even an increase in the cost of debt servicing for corporates stemming from a short term interest rate shock is not likely to have a severe impact on banks' balance sheets. A short-term interest rate increase of 500 bp would cause an estimated increase in NPLs of less than 6 percentage points, with one bank falling just below the minimum CAR to 9.9 percent, and negligible recapitalization needs. An increase of the cost of debt servicing for corporates of a lower magnitude is indeed not likely to pose any major risk to the stability of the banking system. The income shock does not pose any imminent major threat on the level of capital adequacy of the Omani banks.³⁷

³⁷ See Appendix 1 for the stress test results on the corporate debt servicing capacity.

Table 9. Oman: Impact on the Banking Sector of the Nonfinancial Corporate Sector Stress Test

Impact on the Banking Sector of the Non-Financial Corporate Stress Test				
Baseline	Interest Rate Shocks for Corporates Debt			Income Shock for Corporates
	+ 200 bps	+300 bps	+500bps	25 percent
(in percent)				
Increase in Banking System NPLs (percentage)				
	0.2	5.6	5.7	3.2
Banking System Capital Adequacy Ratio				
14.2	14.1	11.7	11.6	12.8

Sources: Authors' calculations based on corporate and banks balance sheets from Zawya and Muscat Securities Market.

Overall, the results show that a deterioration in the credit quality of banks' loan portfolios from the current levels is not likely to pose immediate and significant risks for the stability of the banking system. Nevertheless, further deterioration of the banks' assets quality may affect banks' profitability and possibly weaken their capital adequacy.

V. INSTITUTIONAL ISSUES

The existing legal, institutional and regulatory framework contributed to the safety and soundness of the banking system, notably limits on the banks' overall credit exposures and sub-limits on quantity and price for retail lending. The conservative approach to regulation has had positive effects on banks during the global crisis, as it limited risky exposures of banks. On the other hand, such limits may have potential drawbacks in terms of incentives for banks to develop sound risk management practices and to efficiently allocate credit.

There is scope for further improvement in the operating framework for monetary policy within the exchange rate peg. Currently, government deposits are an attractive source of funding, as it helps banks earn an attractive spread over the cost of funding, despite the placement of part of these funds in central bank CDs at low interest rates. Banks are able to earn a positive spread because a major share of these deposits is lent to consumers at an interest rate of 8 percent. The government is reluctant to place deposits directly with the central bank since the rate of interest on central bank is much lower than the deposit rate offered by banks. This, combined with the existing loan-deposit ratio, has resulted in the creation of excess liquidity in the banking system, which is sterilized by the central bank either through variations in reserve requirements (which are unremunerated) or absorption through CDs.

The narrowing of spreads in interest rates between loans in local currency and foreign currency, and between consumer and other loans would require reforms in the market to facilitates long-term borrowing by banks at optimum pricing and improve efficiency in the pricing of risks on assets. To achieve this, there is a need to develop a well functioning money market and a credible sovereign yield curve.

Interest rate liberalization and removal of ceilings on lending are important prerequisites for the development of financial markets. The existing limits on interest rates as well as on the quantity of credit available for personal loans imply a rationing of credit supply to retail customers, with consequent distortions on market conditions, to the detriment of customers, as well as on risk-based pricing of assets and thus on proper risk management by the banks. The existing measures do not give banks proper incentives to select, price and monitor their credit exposure adequately.

Removing the above limits and fine tuning the existing prudential regulation seems possible, while carefully avoiding any lowering of prudential requirements that might encourage excessive risk taking by banks. Rather than having portfolio based limits on lending other type of limits (such as loan-to-value or debt-to-income ratio) to safeguard against credit risk merit consideration.

The effectiveness of the existing credit bureau could be improved. A better system for information sharing between banks on borrowers' credit history and payment behavior would help banks to select and price credit properly, hence lowering the need for stringent sectoral limits on lending.

There is room for improvement in cross border cooperation between the central bank and other supervisory authorities. Memoranda of understanding and letters of agreement have been signed with several countries and the CBO is participating in quarterly meetings between supervisors in Gulf countries. Nonetheless, the default by the Saudi Groups was unexpected by the GCC markets, including Oman. A more proactive approach to cross border supervision and cooperation toward a prompt and detailed exchanged of information could help the central bank to be readier in identifying critical issues emerging from overseas exposures.

A banking resolution framework has not been fully established nor properly tested. Although the central bank formally has the power to take control of and eventually liquidate a bank in case of crisis, no operational procedures have been defined. Establishing and testing a proper bank resolution framework would help authorities to act promptly and in an orderly manner in case a crisis should arise.

None of the above reforms can be achieved overnight and they will all need to be carefully sequenced. Any change should be introduced in a gradual manner, allowing for a reasonable roll-out period which would give banks adequate time to adapt to the new regulatory environment, so as to avoid potential destabilizing effects for the banking sector and possibly for the real sector. Rules that would allow regulatory arbitrage within the system and at regional level should also be carefully avoided.

VI. CONCLUSIONS

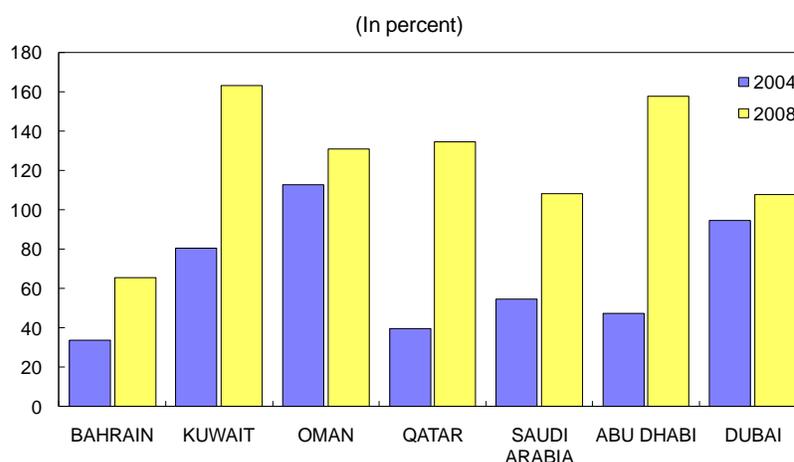
The impact of the global financial crisis on Oman's banking system has been very limited—after the high level of NPLs observed at the beginning of the decade— thanks to the prudential measures introduced by the central bank, which boosted banks capital and avoided any exposure to so-called toxic assets. The limited exposure of the Omani banking sector to the international financial system also helped to contain negative spillovers in the country. Nevertheless, liquidity support provided by the central bank and the government helped banks to weather the challenges without excessive strain on the financial system. Banks continue to make profits and would remain adequately capitalized even in the case of a significant increase in credit losses, with credit risk remaining the main source of risk. Despite the substantial resilience of the system, some inefficiencies exist. The financial system needs to develop further in order to provide proper incentives to banks to achieve more efficient risk management and better credit allocation. An institutional framework with less restriction on credit and the availability of benchmark rates, albeit without lowering prudential and supervisory standards, would be of significant benefit to the development of the financial system in Oman.

Appendix 1. Impact of the Global Crisis on the Corporate Sector

The relative size of the corporate sector in Oman (nonfinancial corporates and investment companies) is small, with assets of US\$13 billion at end-June 2009 (36 percent of bank assets) and a total debt of US\$7 billion (28 percent of bank loans).

The global crisis has had a limited impact on the profitability of the nonfinancial corporate sector. Oman's nonfinancial corporate sector balance sheets appeared healthy; as of June 2009, the sector continued to be profitable. The debt equity ratios were within reasonable levels (1.3) and compare favorably with other GCC countries.

Figure 13. Debt to Equity Ratios for Listed Companies in the GCC Countries, 2004 and 2008



Sources: Zawya and authors' estimates.

At an aggregate level, their interest coverage ratio (ICR)³⁸ was well above 1. Investment companies recorded net losses in 2008, but began a modest recovery in the second quarter of 2009. In light of the size of their balance sheets and their negligible borrowing from banks, they pose few systemic risks.

³⁸ ICR is defined as earnings before interest and taxes over interest expenses. It measures the debt-servicing capacity of firms.

Table 10. Oman: Nonfinancial Corporate Sector Performance (76 Listed Companies)
(In billions of U.S. dollars)

	2007	2008	H12009	H12008
Assets	7.2	8.4	8.3	8.2
Equity	3.3	3.6	3.7	3.6
Net Profits	0.5	0.4	0.2	0.3
Return on Assets (percent)	6.8	4.7	--	--
Return on Equity (percent)	14.8	11.1	--	--

Sources: Authors' calculations based on balance sheets from Zawya.

Table 11. Oman: Nonbank Financial Companies (18 Listed Companies)
(In billions of U.S. dollars)

	2007	2008	H12009	H12008
Assets	4.4	5.0	4.8	5.3
Equity	1.2	1.2	1.1	1.4
Net Profits	0.27	-0.04	0.08	0.15
Return on Assets (percent)	6.2	--		
Return on Equity (percent)	23.2	--		

Sources: Authors' calculations based on balance sheets from Zawya.

The resilience of the corporate sector to interest rate and income shocks was tested and confirmed. While the health of the nonfinancial corporate sector appears adequate, stress tests were conducted to assess this sector's vulnerability to interest rate and income shocks. The interest-paying capacity of the corporates was stressed as described in the Section IV.B.

Stress test results show that Omani corporates are more sensitive to interest-rate shocks than income shocks. An increase in interest rates by 500 basis points would increase the share of distressed debt from 9 percent of total debt to 21 percent of total debt with the share of companies with a IC ratio below 1 increasing from 23 percent to 31 percent. The income shock would increase the share of distressed debt to 15 percent and the share of number of companies with debt in distress to 26 percent.

Table 12. Oman: Stress-Test Results on the Nonfinancial Corporate Sector

Baseline	Interest Rate Shocks			Income Shock
Jun-09	+ 200 bps	+300 bps	+500bps	25 percent
(in percent)				
Share of	Debt with ICR < 1 in	Total Debt of Companies 1/		
8	9	20	21	15
Share of	number of companies with ICR < 1 in Total Debt of Companies			
23	25	30	31	26

Sources: Authors' calculations based on corporate balance sheets from Zawya and Muscat Securities Market.

1/ ICR < 1 implies distress in debt.

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