August 2008
IMF Country Report No. 08/291

Jordan: Selected Issues

This Selected Issues paper for Jordan 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 21, 2008. The views expressed in this document are those of the staff team and do not necessarily reflect the views of the government of Jordan or the Executive Board of the IMF.

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International Monetary Fund
Washington, D.C.

INTERNATIONAL MONETARY FUND

JORDAN

Selected Issues

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Approved by Middle East and Central Asia Department

April 21, 2008

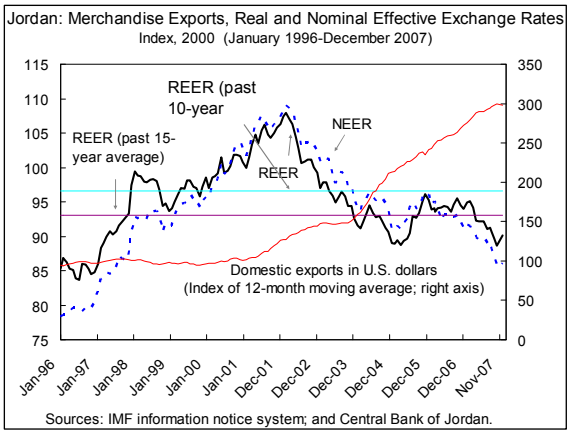
I. Assessment of the Level of the Exchange Rate[1]

Despite the large current account deficit, there is no clear evidence that the exchange rate is misaligned. Traditional indicators do not suggest Jordan has an external competitiveness problem. A technical assessment of the level of the exchange rate using a number of established methodologies presents a mixed picture.

A. Current Account and Exchange Rate Developments

1. **The Jordanian dinar has historically operated within a fixed exchange rate regime**. The dinar was initially issued under a currency board (1950–64) using the pound sterling as an anchor. Since 1965, when the Central Bank of Jordan (CBJ) began operations, the dinar has been managed under various pegs. Until 1975, the dinar remained pegged to the British pound. During 1975–88 it was pegged to the SDR with a fluctuation margin of 2.25 percent. In 1988, following intense pressure in the foreign exchange market, a floating exchange rate regime was introduced. However, in May 1989, the dinar was again pegged to the SDR. Between 1989 and October 1995, the peg was adjusted frequently with a view to ensuring competitiveness. Since October 1995, the dinar has been de facto pegged to the U.S. dollar.

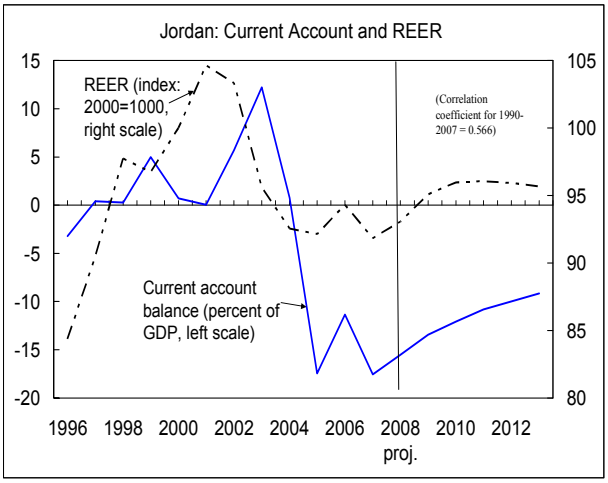
2. **Traditional indicators do not suggest that Jordan has a problem of external competitiveness.** By end-2007 the real effective exchange rate (REER) had depreciated by 16.5 percent relative to its peak in February 2002. Exports have grown at double-digit rates over the past five years. This reflected the strong performance of textile and apparel exports, which benefited from U.S. duty- and quota-free access. Jordan has made steady gains in market shares and was among the top 10 apparel exporters to the U.S. in 2006. A decline during 2007 in apparel exports was offset by a pick-up in other nontraditional exports (including pharmaceuticals and fertilizer) and in exports to Asian and Middle Eastern markets.[2]



[1] Prepared by Thomas Baunsgaard and Randa Sab.

[2] The reduced apparel exports probably reflects the impact of labor supply problems in Jordan and increased competition from lower cost producers in the region.

3. **The external current account deteriorated rapidly during 2004–05 and again in 2007.** Historically, Jordan has maintained current account positions that were broadly balanced. The deterioration in 2004 and 2005 reflected an exceptionally rapid increase in imports, as the saving-investment balance shifted.[3] Following an improvement in 2006, the current account again deteriorated in 2007 from a negative impact of international food and fuel prices. Reassuringly, recent deficits were comfortably financed by non-debt-creating inflows of private capital, allowing for a rise in official reserves. The current account is expected to gradually improve over the medium term, although a significant deficit will likely persist. The real effective exchange rate is expected to appreciate moderately over the medium term, with a relatively large movement in 2008 reflecting the impact of the one-off adjustment to the regulated fuel prices pushing up the inflation differential relative to trading partners.



B. Technical Assessment of the Real Effective Exchange Rate

4. **A technical assessment does not provide any clear evidence of misalignment.** Five different methods have been applied to identify possible misalignment, comparing the end-2007 level of the REER against (i) the historical average of the REER; (ii) an estimated PPP-based exchange rate for the relative price and income levels in 2007; (iii) a normative REER consistent with a sustainable level of the current account under the macroeconomic balance approach; (iv) a normative REER consistent with a current account that stabilizes the NFA-position under the external sustainability approach; and (v) a normative level of the REER estimated with the equilibrium real exchange rate approach (Table 1). The last three approaches use the IMF Coordinating Group on Exchange Rate Issues (CGER) methodology.

[3] Jordan faced three major shifts in its external environment: (i) the exceptional provision—and subsequent sharp cut—of grants to the government following the onset of the Iraq war; (ii) a rise in global oil and food prices; and (iii) a surge in foreign investment inflows. The simultaneous impact of these external developments, coupled with strong economic growth, contributed to the large current account deficits in 2005 and 2007.

Table 1. Jordan: Exchange Rate Assessment

	Misalignment of the REER 1/		Benchmark current account 2/	
	Evaluated against 2007 fundamentals	Evaluated against 2013 fundamentals	Evaluated against 2007 fundamentals	Evaluated against 2013 fundamentals
	(In percent)		(In percent of GDP)	
I. REER past average				
- 10-year average	-6.7	-6.7	…	…
- 15-year average	-3.2	-3.2	…	…
II. PPP method (relative to the US)				
- on a bilateral basis relative to the US	-5.1	-5.1	…	…
- on a multi-country trade-weighted basis	-21.9	-21.9	…	…
III. Macroeconomic balance	7.2	10.9	-4.7	-4.2
IV. External sustainability				
- stabilizing NFA at end-2006 (IIP from CBJ database)	-4.8	-1.0	-8.7	-8.2
- stabilizing NFA at end-2006 (IIP from Lane/Milesi-Ferretti database)	11.4	14.2	-3.3	-3.1
V. Equilibrium real exchange rate	1.8	-0.6	…	…
Overall misalignment (average of II-V) 3/	-4.4	-3.1	…	…
CGER methods misalignment (average of III-V) 3/	1.4	3.1	…	…
Memorandum items:				
Current account projection (in percent of GDP)	-17.5	-9.2	…	…
Underlying current account (in percent of GDP) 4/	-7.1	-7.8	…	…
Real effective exchange rate change from end-2007 (appreciation, +)	…	4.1	…	…

1/ Misalignment as percentage deviation from estimated equilibrium, overvaluation (+), undervaluation (-).

2/ In methods III and IV, a benchmark current account is estimated and compared to the projected underlying current account. Given the assumed current account elasticity, this provides an estimate of the REER misalignment.

3/ The averages exclude (i) the bilateral PPP estimate, and (ii) the external sustainability estimate using the Lane/Milesi-Ferretti database.

4/ The underlying current account for 2007 is estimated by removing the transient factors (see Chapter II); in 2013, by netting out the impact on the projected current account from changes to the REER over the medium term.

5. **The CGER methods have been evaluated against both the estimated underlying current account for 2007 and the projected underlying current account for 2013**. The first evaluation method estimates the underlying current account for 2007 by removing the temporary factors from the 2007 actual current account.[4] This reduces the current account deficit from 17.5 percent of GDP to an estimated underlying current account deficit of 7.1 percent of GDP. The macro fundamentals used to estimate the current account norms in this case reflect actual 2007 values. The second evaluation method is applied against the 2013 projected values of the current account and macro fundamentals, with an expectation that temporary factors over the medium term will have dissipated. In addition, the medium-term current account projections have been adjusted for the estimated impact of the projected path of the REER.[5] This provides an alternative measure for the underlying

[4] Chapter II provides two estimates of the underlying current account for 2007 at -5.2 percent of GDP and -9 percent of GDP. The exchange rate assessment reported here uses the midpoint between the two estimated underlying current accounts.

[5] Consistent with the CGER approach, this provides an estimate of how the current account would behave over the medium term, assuming that the current level of the REER would remain unchanged.

current account over the medium term assuming an unchanged REER. Reflecting this correction, the underlying current account deficit for 2013 is estimated at 7.8 percent of GDP (below the unadjusted deficit of 9.2 percent of GDP for 2013).

6. **The REER is slightly undervalued compared to its historical levels**. The end-2007 level of the REER was below the past 10-year average by 6.7 percent and below the 15-year average by 3.2 percent. Although average historical levels of the REER were not necessarily reflective of the "equilibrium" level, it could be argued that since past levels of the REER did not lead to any disruptive adjustments in the exchange rate, the long-term averages could be sustained.

7. **Assessing the exchange rate against the expected long-run level, given Jordan's relative per capita income, also points to an undervaluation**. This methodology incorporates the Balassa-Samuelson hypothesis that the real exchange rate will tend to appreciate as the relative productivity level increases in line with per capita income. From a cross-country perspective, one would expect to find a positive relation between the level of income and the PPP-based exchange rate. Estimating the deviation of the exchange rate from its long-run level based on a cross-country regression of price levels and productivity levels (approximated by PPP-based GDP per capita) relative to the U.S., the bilateral real exchange rate was found to be undervalued at end-2007 by about 5 percent. However, when extended to a multilateral basis incorporating Jordan's main trading partners, the real effective exchange rate was found to be undervalued by 21.9 percent at end-2007.[6]

8. **Applying the CGER macroeconomic balance approach suggests the dinar is moderately overvalued.** This method compares the "underlying" current account relative to a normative equilibrium current account. Employing the regression coefficients from the CGER *macroeconomic balance approach*, the equilibrium current account norms are estimated at a deficit of 4.7 percent of GDP evaluated at 2007 fundamentals and 4.2 percent of GDP evaluated at 2013 projections.[7] With the underlying current account deficits estimated respectively at 7.1 and 7.8 percent of GDP for 2007 and 2013, this suggests that the dinar is overvalued both at current and projected medium-term levels. To eliminate the gap between the current account norm and the projected underlying current account, an estimated 7.2 to 10.9 percent depreciation is required, which provides a measure of the misalignment. The key determinants of the result are the fiscal balance, demographic data, and the negative oil balance (Appendix I).

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[6] The multi-country relative PPP for Jordan is calculated as the geometric average, weighted by trade shares, of the deviations of its trading partners' currencies against the U.S. This extension becomes important as a country's estimated misalignment against the U.S. dollar may misrepresent its misalignment against its trading partners if many of these are also misaligned relative to the dollar.

[7] As Jordan is not in the CGER multi-country sample, application of the regression estimates to Jordan data must be interpreted with caution.

9. **The CGER external sustainability approach, on the other hand, provides contradictory findings depending on the choice of data on the net foreign assets position.** The *external sustainability approach* estimates the current account adjustment that would be needed to stabilize the net foreign assets position (or the international investment position using different terminology) at the end-2006 level relative to GDP (the latest available actual data from the CBJ). The level of the current account that stabilizes the NFA position is calculated as:

$$ca^s = \frac{g + \pi^*}{(1+g)(1+\pi^*)} NFA,$$

where *g* is the potential growth rate in Jordan and π^* is U.S. inflation (given that external assets and liabilities are primarily denominated in U.S. dollars). Official data from the CBJ indicate that the end-2006 NFA position was at -107 percent of GDP, reflecting the substantial FDI inflows in recent years. Stabilizing NFA at that level would be consistent with a current account deficit of 8.2 percent of GDP evaluated at 2013 fundamentals, or a deficit of 8.7 percent of GDP evaluated at end-2007 fundamentals. This implies that the dinar is undervalued by 1 percent when evaluated against the 2013 fundamentals or 4.8 percent when evaluated against 2007 fundamentals. An alternative database (Lane/Milesi-Ferretti) suggests that the actual NFA position for end-2006 was significantly narrower (at -41 percent of GDP). Stabilizing the NFA stock at that level over the medium term would imply a tightening of the current account deficit to 3.1 percent of GDP, or a deficit of 3.3 percent of GDP at 2007 fundamentals. This implies that the dinar is overvalued by 14.2 percent, or 11.4 percent at 2007 levels of fundamentals. In addition to the uncertainty about which database on NFA is the most appropriate to use, the choice to stabilize the NFA position at the end-2006 level is arbitrary and may not necessarily reflect a sustainable target level of external liabilities.[8]

10. **The CGER equilibrium real exchange rate approach indicates the exchange rate is in line with both medium-term as well as 2007 fundamentals.** This method estimates a reduced-form equilibrium REER as a function of key fundamentals, comparing this to the actual REER. The coefficients applied are taken from the CGER equilibrium REER approach, evaluated at the projected 2013 values for the fundamentals and the actual 2007 levels.[9] The key determinants are the terms of trade, government consumption, and productivity differentials (Appendix I). As the CGER coefficients are derived from a fixed

[8] In Jordan, the NFA position widened significantly during 2004–06 reflecting large FDI and portfolio investment inflows. If instead the average 2000–03 NFA position is applied (-74 percent of GDP, based on CBJ data) the estimated overvaluation falls to 6.6 percent.

[9] As in the macroeconomic balance approach, the CGER estimate excludes Jordan. Hence, interpreting the results obtained by applying panel regression estimates to Jordan warrants caution.

effects regression, a country-specific intercept is calculated that sets the average misalignment to zero over 1995–2006 (a period over which the current account was broadly in balance, with an average deficit of 0.7 percent of GDP).

C. Critical Underlying Assumptions

11. **The results are sensitive to certain assumptions**. A fundamental criticism is, of course, that Jordan is not part of the CGER group of countries from which the regression coefficients are derived, and the assessment should be updated as estimates from larger or possibly more relevant country groupings become available. Nonetheless, there is merit in using a common and widely applied methodology for the misalignment exercise. Specific assumptions that affect the results relate to the relatively high current account elasticity with respect to changes in the REER, the implied REER path implicitly assumed over the medium term, and the derivation of the "underlying" current account correcting for the impact of the this REER path.

The elasticity of adjustments to the current account

12. **A critical component in this exercise is the assumed response of the current account to changes in the real effective exchange rate**. The elasticity of the current account balance to the real effective exchange rate is estimated as:

$$\varepsilon_{CA} = \left(\varepsilon_X \frac{X_{Jor}}{Y_{Jor}} \right) - \left(\left(\varepsilon_I - 1 \right) \frac{I_{Jor}}{Y_{Jor}} \right),$$

where ε_{CA} is the current account elasticity, the trade elasticities are calibrated using the CGER representative estimates from the empirical trade literature as $\varepsilon_X = -0.71$ and $\varepsilon_I = 0.92$, and *X, I*, and *Y* are respectively the nominal values of exports, imports, and GDP projected for Jordan. The formula applies the same common trade elasticities for imports and exports used in the CGER exercise, scaled by country-specific trade ratios. Intuitively, the higher the trade shares, the less change is required in the real effective exchange rate to close any external gap, as the adjustment in exports or imports will be larger, to reach a sustainable level of the current account.

13. **The current account in Jordan is assumed to respond relatively strongly to changes in the real effective exchange rate**. Scaling the above formula by trade ratios for Jordan, the current account elasticity with respect to changes in the real effective exchange rate is estimated at -0.33. This implies that a 10 percent depreciation of the real effective exchange rate will lead to an improvement in the current account by 3.3 percent of GDP. This strong effect reflects the openness of the economy, but it does warrant careful scrutiny of the underlying elasticity assumptions and exploration of the sensitivity of the findings to changes in these. The results in two of the CGER approaches (the macroeconomic balance approach and the external sustainability approach) are sensitive to the chosen elasticity

assumptions. As an illustration, if the export and import elasticities were reduced by 20 percent, respectively, the current account elasticity declines to -0.15. This would tilt the estimates further toward larger undervaluation under the external sustainability approach (based on CBJ NFA data) and a larger overvaluation under the macroeconomic balance approach.

Real effective exchange rate projections

14. The implicitly assumed path of the real effective exchange rate over the medium term is estimated by using the latest available WEO projections for nominal exchange rates (against the U.S. dollar) and consumer prices for Jordan's main trading partners. This enables calculation of paths for the nominal effective exchange rate, as well as the real effective exchange rate consistent with the WEO projections for Jordan.

15. **The real effective exchange rate is expected to appreciate over the forecast period.** It is assumed that the current peg of the dinar against the U.S. dollar will be maintained. Therefore, Jordan's nominal exchange rate on a bilateral basis relative to the U.S. dollar will remain unchanged through 2013. However, as the WEO projects a further modest depreciation of the U.S. dollar relative to the base period, the *nominal* effective exchange rate for Jordan is expected to depreciate by 2.9 percent between end-2007 and 2013. Offsetting this, however, inflation in Jordan is expected to exceed the weighted average of its main trading partners, especially reflecting the impact of the significant increase in fuel prices in 2008. Over the 2007-13 period, the inflation differential in Jordan is projected at 7 percent relative to its main trading partners. This implies that Jordan is projected to experience an appreciation of the real effective exchange rate through 2013 by about 4 percent.

The underlying current account correcting for the real exchange rate impact

16. The CGER methodology is based on a comparison of the normative current account norms against the projected underlying current account over the medium term, with the latter adjusted for the impact of any projected changes in the real effective exchange rate. The medium-term projections for Jordan imply a cumulative appreciation of 4 percent of the real effective exchange rate by 2013. Given the current account elasticity assumptions, this implies that about 1.4 percentage points of the current account deficit over the medium term can be attributed to the appreciation of the real effective exchange rate. This provides a measure of the projected underlying current account deficit for 2013 at 7.8 percent of GDP, which is assessed against the current account norms under the macroeconomic balance and external sustainability approaches.

Appendix I. The Application of CGER Regressions to Jordan

The application to Jordan of the CGER regressions for the macroeconomic balance and the equilibrium real exchange rate approaches is detailed in Table 2. This also shows the relative contribution of each of the variables in estimating real exchange rate misalignment in Jordan.

Table 2. Jordan: Application of CGER methodology

	CGER regression coeffecients	Contribution of variables evaluated against 2007 fundamentals		Contribution of variables evaluated against 2013 fundamentals	
		In value	In percent	In value	In percent
Macroeconomic balance (methodology III)					
Fiscal balance	0.19	-1.07	25.54	-0.78	18.63
Old-age dependency	-0.14	2.10	-50.16	2.10	-50.16
Population growth	-1.22	-1.87	44.57	-1.87	44.57
Initial NFA	0.02	-0.02	0.51	-0.02	0.51
Oil balance	0.23	-3.80	90.85	-3.52	83.96
Output growth	-0.21	-0.05	1.18	-0.11	2.56
Relative income	0.02	0.00	-0.06	0.00	-0.07
Banking crisis	0.01	0.00	0.00	0.00	0.00
Asian crisis	0.06	0.00	0.00	0.00	0.00
Financial center	0.03	0.00	0.00	0.00	0.00
Constant	0.00	0.00	0.00	0.00	0.00
Equilibrium real exchange rate (methodology V)					
Net foreign assets	0.04	-0.06	-1.22	-0.06	-1.22
Productivity differential	0.15	-0.28	-6.00	-0.28	-5.85
Commodity terms of trade	0.46	1.95	41.38	1.98	42.02
Government consumption	2.64	0.64	13.66	0.63	13.38
Trade restriction index	0.13	0.13	2.76	0.13	2.76
Price controls	-0.04	0.00	0.00	0.00	0.00
Constant	2.31	2.31	48.92	2.31	48.92

II. An Analysis of the Current Account Deficit[1]

A. Background

1. **Jordan's current account deficit widened sharply to 17½ percent of GDP in 2007, reversing what turned out to be a short-lived adjustment in 2006.** The size of the current account deficit is among the largest recorded in emerging markets last year.[2]

2. **Long-term non-debt-creating financing for the current account deficit has been stable and plentiful, however, tempering the risks it poses to external stability.** Thanks to Jordan's success in attracting private capital from the region—whose economies continue to benefit from high oil receipts—foreign direct investment has covered most of the needed financing. Moreover, with additional inflows from other private capital sources (especially portfolio flows), Jordan has been able to record overall balance of payments *surpluses* in recent years, enabling reserves to rise by around $1 billion in each of the past two years.

3. **Looking ahead, questions may nonetheless be raised about the sustainability of such inflows and whether they might fall short of amounts needed to cover prospective deficits.** In this connection, three aspects of Jordan's external outlook are reviewed below: (i) What is the most plausible medium-term outlook for the current account given recent developments? (ii) Can the concept of an underlying current account better reveal the balance of external risks? and (iii) Looking beyond the underlying current account, is its medium-term financing potentially threatened by developments in the capital account?

B. Recent Current Account Trends and Outlook

4. **Jordan's current account balances have been unusually volatile in recent years, reflecting sharp swings in both the trade accounts and in official grants.** In the past five years, Jordan has seen a very large current account surplus—of 12 percent of GDP—swing toward an even larger deficit, followed by a sharp improvement that subsequently reversed the following year. Even excluding the impact of grants, such large swings in the current account are unusual among emerging markets. In fact, no other emerging market country has shown higher current account volatility in recent years.[3]

5. **Import developments have been the single most important determinant of recent swings in the current account, followed to a lesser extent by the impact of exports and**

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[1] Prepared by Helaway Tadesse.

[2] Among a sample of 50 emerging market countries, Jordan's current account deficit is the third largest after Bulgaria and Latvia (both with deficits of around 22 percent of GDP).

[3] The standard deviation of Jordan's current account deficit during 2003–07 was double that of the next highest country case among emerging markets.

grants. Indeed, excluding grants, the deterioration of the current account ratio can in most years be explained primarily by movements in the size of imports relative to GDP.

Explaining Changes in the Current Account (CA), 2004-2007

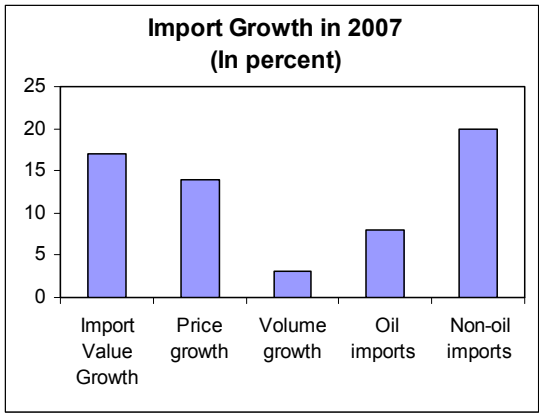
Current account including official grants
(in percentage points of GDP)

	2004	2005	2006	2007
Change in CA	-11.4	-18.2	6.1	-6.2
Of which due to:				
Exports	3.8	0.1	2.8	-0.9
Imports	-13.8	-10.3	1.1	-3.2
o/w oil imports	-4.2	-5.0	-0.2	0.7
o/w non-oil	-9.6	-5.2	1.3	-3.8
Services, net	0.7	-1.0	1.2	0.0
Income, net	1.1	0.4	0.9	1.2
Grants	-3.3	-7.4	0.1	-3.3
Memo items:				
CA change due to imports (%)	121	56	18	51
CA level (% GDP)	0.8	-17.4	-11.3	-17.5

Current account excluding official grants
(in percentage points of GDP)

	2004	2005	2006	2007
Change in CA	-9.3	-12.5	6.3	-2.8
Of which due to:				
Exports	3.8	0.1	2.8	-0.9
Imports	-13.8	-10.3	1.1	-3.2
o/w oil imports	-4.2	-5.0	-0.2	0.7
o/w non-oil	-9.6	-5.2	1.3	-3.8
Services, net	0.7	-1.0	1.2	0.0
Income, net	1.1	0.4	0.9	1.2
Private transfers	-1.1	-1.7	0.3	0.1
Memo items:				
CA change due to imports (%)	149	82	18	112
CA level (% GDP)	-10.8	-23.4	-17.1	-19.9

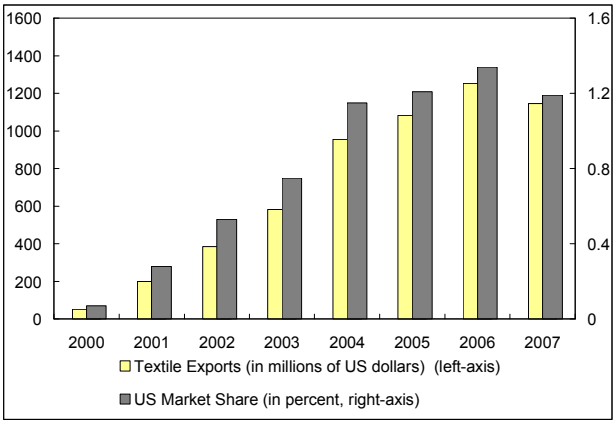
- **Imports:** For 2007, the current account deterioration (excluding grants) broadly matches the jump in the import-to-GDP ratio, as was also the case two years earlier. However, in contrast to earlier episodes, the import surge of 2007 arose solely from the impact of *non-oil* imports (as oil imports fell relative to GDP) and mainly reflected *price*, not volume, effects.[4] Also, consistent with high levels of domestic investment (near 30 percent of GDP), the largest portion of the non-oil import increase reflected higher capital goods, including machinery and equipment, industrial parts and accessories, and raw materials such as iron and steel. The 2007 import surge thus has two positive features: (i) it could be viewed as a boost to medium-term growth to the extent that higher imports

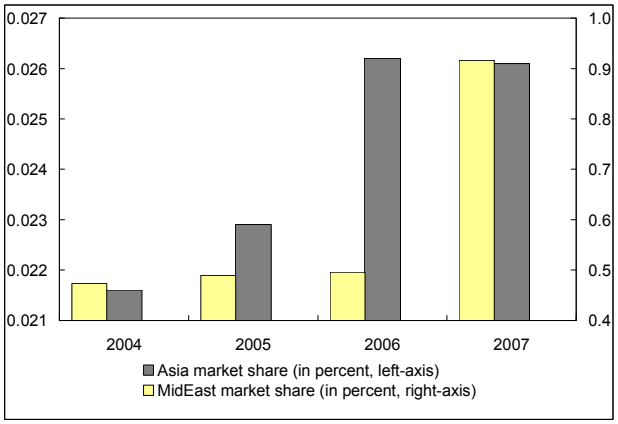


[4] Import volume growth was only 3 percent in 2007, versus a 13½ percent increase in import unit prices. Had the growth of *non-oil* import prices in 2007 been in line with the average of recent years, non-oil import growth would have reached only around 11 percent (instead of 20 percent) and the 2007 current account deficit would have turned out close to 13 percent of GDP.

were mainly the counterpart to investment;[5] and (ii) given modest import *volume* growth, the high overall growth rate can be expected to be self-correcting as global prices recede from their recent peaks.

- **Exports:** With steady increases in the export-to-GDP ratio between 2000 and 2006, exports have—until last year—made a consistently positive contribution to changes in current account balances. Particularly in 2006, a broad-based jump in exports contributed to nearly half of the observed improvement in the current account. The year 2007 marked a turning point, however, on account of unexpectedly weak performance of textile exports, which posted negative growth for the first time since the industry was established in Jordan nearly a decade ago.[6] The textile sector's weak output dampened overall export performance despite what was otherwise very strong growth in exports of nontradit`ional products (especially farm products and pharmaceuticals) and exports to faster-growing destinations in the Middle East and Asia.





- **Grants:** The pattern of grant receipts has also been important in explaining large current account movements in recent years, particularly in both 2005 and 2007 when grants fell to roughly half of their prior-year levels (from peaks of $1.3 billion in 2004 to near $0.7 billion in 2005 and down to $0.4 billion last year). Grant disbursements mainly reflect the assistance provided by Jordan's two largest donors (U.S. and Saudi Arabia), whose transfers have depended on bilateral agreements, regional conditions, and other factors.

[5] The share of capital goods in total imports rose by 1.3 percentage points (p.p.) in 2007, and that of intermediate goods excluding fuel (e.g., industrial raw materials) rose by 1.7 p.p. The share of consumer goods *fell* by 0.8 p.p.

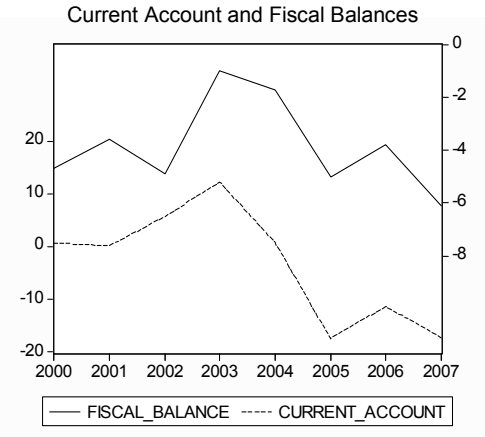
[6] Textile exports, virtually all of which are shipped to the U.S., fell by 4 percent in value terms (and by an even larger percent in volume terms, judging from U.S. import data). As growth in U.S. demand (imports) was broadly unchanged from previous years, the 2007 decline in Jordan's exports appears to have reflected domestic supply factors, including difficulties in obtaining sufficient employees, higher labor costs linked to increased minimum wages and foreign worker fees, and increased input costs for items such as fuel, water, and electricity.

- **Errors and omissions**: Unrecorded balance of payments inflows in the form of errors and omissions were at a historic high in 2007, reaching $1.2 billion or 8 percent of GDP. It is likely that last year's current account deficit is thus being overstated, as the deficit had also widened considerably in another year (2005) when errors and omissions were comparatively high.[7] The high level of errors and omissions, despite the considerable improvement in BOP statistics in recent years, likely reflects challenges in capturing key items such as remittances, whose recording is complicated by the half-million or more Iraqi migrant community.[8]

6. **Several additional features of recent current account developments are particularly noteworthy and carry implications for the medium-term outlook:**

- ***First*, despite considerable volatility in the current account between 2004–07, private investment has remained high and reasonably stable,** at close to 25 percent of GDP for most of this period. The 2006 improvement in the current account, in particular, did not come at the expense of reduced private investment, which—despite much lower external savings—was still close to the peak levels seen in 2005. The relatively high level and stability of *private* investment is positive for medium-term growth, but also implies that any current account adjustment will likely be gradual given the large import needs associated with such a strong level of investment activity.

- ***Second*, fiscal—and to some extent monetary—policy appears to have played an important part in both the improvement and deterioration of Jordan's current account.** The 2006 current account adjustment was aided by sharp policy adjustments put in place that year, including a fiscal tightening of around 3 percentage points of GDP, an increase in interest rates to around 6½ percent (from near 3 percent in early 2005), and a 34 percent



[7] On the basis of the central bank's BOP presentation, the errors and omissions term reached its highest level ever of $1.2 billion in 2007 compared to the next closest high of $0.8 billion in 2005. If, for illustrative purposes, half of the errors and omissions term is judged to be unrecorded *current account inflows*, the 2007 current account would have been 13½ percent of GDP. Alternatively, if the 2007 errors and omissions term had been in line with its average in recent years (and the extra unrecorded inflows assumed to be current account receipts), this would translate to a current account deficit of 11½ percent of GDP.

[8] Estimates of remittances can be particularly complicated by the large number of Iraqi migrants: their imports would be captured in trade statistics but the financing for such imports (namely funds from Iraq) may only be partially recorded in the current account; see Section C for more on this issue.

increase in fuel prices. By contrast, a large fiscal expansion in 2007 likely contributed to the wider external deficit; indeed fiscal and external imbalances have shown strong comovements in recent years.[9] Depending on fiscal and monetary policies in the period ahead, external adjustment could thus be accelerated or prolonged.

- ***Third,*** **large movements in the current account have not been accompanied by sharp exchange rate movements.**[10] This may partly reflect the fact that policy adjustments in some years—such as 2006—carried most of the burden of adjustment that might have otherwise fallen on the exchange rate. In 2007, a 4 percent REER depreciation did not prevent the deficit from widening, but it is likely that the deficit would have been larger still had the REER not depreciated. In any case, REER movements in any single year have generally been modest so the impact on the current account would be fairly muted. Moreover, the link that might be expected between the current account and the REER is not straightforward in Jordan's case, given developments elsewhere in the balance of payments. In particular, Jordan's overall balance of payments remains in surplus owing to very high capital inflows, which explains the lack of any exchange rate pressures (despite the very large current account deficit) and also has an important bearing on judgments about the appropriate REER level. (See Appendix I for an analysis of Jordan's REER that attempts to incorporate the impact of capital flows.)

7. **Looking ahead, and considering prospects for private investment (including FDI), imports, and macroeconomic policies, a *gradual* current account improvement appears in prospect over the medium term.** With the regional environment expected to be characterized by a large pool of investable funds, FDI flows to Jordan should remain high (though declining as a share of GDP), implying that import volume growth should not be expected to fall sharply in the coming years (see Appendix II for a review of the import outlook on the basis of volume and price projections). At the same time, overall import value growth will be somewhat restrained on account of the eventual decline in global commodity prices expected over the medium-term (in the aftermath of anticipated supply responses and as projected by WEO) and also in response to domestic policies geared toward fiscal consolidation and low inflation. For exports, even with a slowdown in the textile sector, the

[9] This is confirmed in a regression analysis that relates Jordan's current account balances to fiscal balances and other control variables (e.g., growth and the REER). Though the explanatory power of the regression is not very high (R^2=0.48), the coefficient for the fiscal variable is statistically significant and suggests that, depending on specifications and time periods used, there is a 1.1 to 1.5 percent-of-GDP improvement in the current account for each 1 percent-of-GDP improvement in the fiscal balance.

[10] A current account adjustment of 6 percentage points of GDP (excluding grants), as occurred in Jordan between 2005–06, is rare among emerging markets. Few other countries, other than those recovering from capital account crises via large REER depreciations, show such a large single-year adjustment in the past decade.

overall growth momentum of recent years is likely to continue as recent mineral price increases are fully captured by producers, as large capacity expansions come on stream in 2009–12 (especially for phosphates and fertilizers), and as the mix of products and markets is further diversified.[11] With continued strong growth in tourism and remittances, reflecting again the role of favorable regional conditions, as well as a recovery of grants from the low level of 2007, the net impact of these developments is expected to be a reduction in the current account deficit to below 10 percent of GDP by 2013.

C. The Underlying Current Account

8. **A focus on Jordan's underlying current account can potentially better inform the analysis of external risks**. Such a focus can help draw attention to temporary factors that may be unduly lowering or raising the deficit relative to its norm.

9. **Stripping out the estimated impact of temporary factors suggests that Jordan's underlying current account is presently much stronger than its actual level.** At least four sets of temporary factors can be identified: (i) short-term impacts from the conflict in Iraq, once Jordan's largest trading partner; (ii) terms of trade developments in 2007 judged to be exceptional on the basis of WEO projections; (iii) mining sector production stoppages; and (iv) a shortfall in grants relative to both recent norms and expected medium-term receipts. These temporary factors are estimated to add up to as much as half of the actual current account deficit of 17½ percent of GDP, depending on the assumption of how Iraqi migrants' imports and the related errors and omissions term are treated (see Appendix III for detailed assumptions used to derive estimates). Moreover, the tempoprary factors are assumed to only partially unwind by 2013.

Jordan: Estimate of an Underlying Current Account

	2007	
	USD mns	% GDP
Current account balance (actual)	-2,776	-17.5
Iraq conflict related temporary factors	-886	-5.6
Foregone exports to Iraq	-285	-1.8
Imports of Iraqi migrants	-601	-3.8
Temporary terms of trade impacts	-764	-4.8
Import price effects relative to MT	-1018	-6.4
Export price effects relative to MT	254	1.6
Mining sector production stoppages	-27	-0.2
Grants shortfall relative to norm	-275	-1.7
Underlying current account balance		
If Iraqi migrants' imports financed by capital acct flows or E&Os:	-824	-5.2
If Iraqi migrants' imports financed by recorded remittances:	-1425	-9.0

Note: See Appendix III for assumptions used to derive estimates.

10. **While temporary influences can be expected to unwind, the speed at which trade and economic relations with Iraq**

[11] For mining exports, given the use of one- or two-year contracts by Jordanian producers, the full impact of recent commodity price increases will only be felt in 2008–09; a modest price decline is projected thereafter. For exports more broadly, free-trade agreements expected to be completed soon with Canada and Turkey should provide a further boost to medium-term growth prospects.

will be normalized is inherently uncertain. Exports to Iraq had fallen in recent years but rose by 15 percent in 2007. This growth is from a low base, however, and it is likely that Iraq will become a source of export growth only gradually. The exceptional terms of trade effects of 2007 are also expected to unwind only gradually over the medium term, judging by WEO projections. However, the impact of other temporary factors should unwind as early as 2008, given that mining sector production volumes are returning to trend this year and grants are expected to return toward historical norms in 2008.

D. Financing of the Current Account

11. **Although Jordan's current account deficit has so far been comfortably financed, a reduction in capital inflows is a source of vulnerability and potential source of external instability.** This is an important concern as total private capital inflows have more than tripled from levels of near 6 percent of GDP prior to 2005 to an average of 21 percent of GDP during 2005–07. Any sudden stops of new flows or a reversal of previous capital inflows could expose Jordan to significant macroeconomic risks.[12]

12. **While the surge in private capital inflows since 2005 raises concerns about potential reversals, these risks are mitigated by a number of factors in Jordan's case:**

- **Private capital flows continue to be dominated by FDI, which in turn has had some desirable features.** More than two-thirds of total private capital flows in recent years have been comprised of FDI, indicating a somewhat limited exposure to the sort of private capital that may be quickly withdrawn.[13] Moreover, Jordan's FDI inflows have two additional positive features. First, their sectoral allocation is relatively diversified, as there are several distinct categories of investors: those geared to take advantage of unrestricted access to the U.S. market (such as firms in Special Economic Zones and Qualified Industrial Zones); those focused on the mining sector (given record jumps in commodity prices); and those investing in services and other emerging sectors oriented to regional markets and clients (tourism, medical services, etc).[14] Second, the investor base is largely from regional oil-exporting economies

[12] As noted earlier, as some share of capital inflows is associated with imports, any reduction in FDI would be accompanied by some corresponding reduction in import needs, thereby reducing the risks for current account financing.

[13] Among 50 emerging market economies, Jordan's FDI level of 12 percent of GDP was exceeded only by that of Bulgaria (14.6 percent of GDP). Median FDI inflows into emerging markets in 2007 were 4 percent of GDP.

[14] The outlook for FDI is supported by data on new investor registrations from the Jordan Investment Board. A compilation of various business ventures reported in the Jordanian and international press also points to numerous investments in the industrial, real estate, retail, and tourism sectors, potentially in excess of $5 billion over the next three to five years. Though these indicators suggest a positive outlook, there are, of course, risks of commitments being withdrawn due to regional conditions, global economic developments, or other

(continued)

whose stock of investable funds will continue to be high in the years ahead. Jordan Investment Board data for 2007 also suggest that Asian investors may be pursuing large-scale investments, judging by the share of non-Arab FDI registrations.

- **Jordan's structure of external liabilities is favorable.** In contrast to many emerging markets, there has so far been virtually no private external borrowing on the part of local Jordanian banks and corporations. As for government external debt, it is largely concessional and of long maturities.[15] These aspects of the external debt profile put Jordan in a better position to withstand shocks from other components of the capital account.

- **Finally, with a high level of reserves, Jordan has a strong line of defense against capital outflows.** Jordan's reserves are comfortable when judged against standard reserve adequacy measures (e.g., an eight-fold short-term debt cover and over three months of prospective imports). Moreover, at near 30 percent of GDP this year, reserves are large enough to withstand a reversal of private capital of a magnitude equal to virtually all such episodes in emerging markets over the last decade. The size of reserves is also large enough to cover the full (but very unlikely) reversal of all non-FDI private capital that has flowed into Jordan during the last three years.

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unforeseen factors. There are also risks that FDI in certain sectors may slow if specific markets were to become oversaturated and/or subject to asset price declines (e.g., real estate and hotels).

[15] Public sector external debt did, however, have a problem of currency mismatches, as approximately 55 percent of external debt was in nondollar currencies (mostly euro, yen, and sterling) though only 10-20 percent of reserves and exports were held/earned in these same currencies. The Paris Club debt buyback addresses this mismatch, as about 75 percent the debt retired involves nondollar currencies.

Reserve Levels and Capital Account Reversals
(In percent of GDP)

Reserves	Jordan	Asian Crisis Countries					Other Emerging Markets		
		Indonesia	Korea	Malaysia	Philippines	Thailand	Brazil	S. Africa	Turkey
1996	10.1	8.2	6.4	27.0	12.5	21.0	7.8	0.9	12.1
2006	43.3	11.1	26.2	53.1	16.6	30.2	7.9	9.4	15.0
2007	43.4	...	...	...	...	...	...	...	...
2008*	29.2	...	...	...	...	...	...	...	...
Capital Account Reversal:									
1st year:	...	-6.9	-7.2	-4.9	-8.5	-19.4	-4.7	-3.1	-14.2
2nd year:	...	-6.4	-1.4	-1.4	-1.9	-5.1	0.7	1.5	11.9
Combined:	...	-20.1	-15.8	-11.1	-18.9	-43.9	-8.7	-4.7	-16.4

Source: Summary table drawn from IMF Country Report No. 07/273, which uses data and analysis in Jeanne and Ranciere (2006)
* For Jordan, the 2008 projection is the reserves level in percent of GDP after the Paris Club debt buyback
Notes: Years of reversals are 1997-98 (Asia), 2002-03(Brazil), 2001-02 (Turkey), 2000-01 (South Africa)
Capital account reversal is the change in the capital account as a percentage of GDP.
Combined reversal defined as 1st year plus the cumulative 1st and 2nd year (total 2nd year vs baseline).

E. Conclusion

13. **In sum, the medium-term outlook for the current account does not point to serious threats of present or prospective external instability,** if—as expected—regional capital inflows remain strong and global commodity prices recede gradually from their peak levels. Moreover, as shown by Jordan's recent experience, domestic policies—through continued fiscal consolidation, low inflation, and the pass-through of global price developments to domestic consumers—can provide further substantial support to medium-term external adjustment.

Appendix I. The REER and the Balance of Payments

Balance of payments developments in recent years do not provide a clear signal on the appropriateness of the REER. For example, REER levels in recent years have clearly not hurt exports and tourism, given their strong double-digit growth. Also, the surge in non-oil imports (which might normally suggest an overvaluation) does not appear to imply misalignment in Jordan's case since it was driven mainly by global price shocks, which are expected to partly unwind over the medium term. More broadly, despite a very large current account deficit, the overall balance of payments has now been in surplus for several years, thus providing mixed signals of the appropriateness of the REER based on BOP trends alone.

In this context, the appropriateness of the REER is explored by estimation of an equilibrium REER based on Jordan-specific determinants. This is one approach that complements other approaches that rely on cross-country data (See Chapter 1 of Selected Issues Paper). To this end, a cointegration approach along the lines of IMF Working Paper 06/257 was used, but with two further extensions involving the addition of a private capital measure and the incorporation of 2006–07 outturns. A long-run cointegrating relationship was found with the addition of private capital flows (data from the CBJ's historical BOP series), and the results suggest that a 1 percent of GDP increase in private capital inflows raises the equilibrium REER by 4–6 percent (see below). Also, the near 30 percent overvaluation found for 2005 in IMF Working Paper 06/257 (based on the nonsmoothed equilibrium REER) drops to just 4 percent when the estimation is expanded to include private capital (Figures 1 and 2). For 2006, various specifications all pointed to a large undervaluation of the dinar, given the very high level of private capital inflows that year, but this was mostly reversed in 2007 when capital inflows and grant receipts declined. Still, an undervaluation of around 15 percent is estimated for 2007 (on the basis of a smoothed EREER series), but the degree of misalignment falls essentially to zero after adjustments are made for large one-off bank recapitalization inflows (of more than $1 billion in 2006) that distorted recent FDI figures (Figure 3). Overall, these results might best be interpreted as suggesting that there is no strong case that a REER depreciation is needed to facilitate current account adjustment and that the REER may in fact have room to appreciate modestly, though this judgment would depend heavily on expectations regarding the level and durability of future capital inflows.

SUMMARY ESTIMATES OF COINTEGRATING RELATIONSHIPS

Period Covered	1964-2005	1964-2005	1964-2005	1964-2007	1964-2007
Specification	As per WP/06/257	With Private Capital, Incl Openness	With Private Capital, Excl Openness	With Private Capital, Incl Openness	With Private Capital, Excl Openness
LOGREER(-1)	1	1	1	1	1
LOGGRANTS(-1)	-1.08	-1.31	-1.94	-1.31	-2.04
	-0.13	-0.12	-0.23	-0.13	-0.24
	[-8.41]	[-10.99]	[-8.25]	[-10.43]	[-8.29]
LOGREMITS(-1)	-0.40	-0.55	-0.48	-0.54	-0.46
	-0.05	-0.04	-0.07	-0.04	-0.08
	[-8.64]	[-13.68]	[-6.454]	[-12.665]	[-6.09]
LOGTOT(-1)	-0.86	-1.11	-1.28	-1.02	-1.12
	-0.20	-0.16	-0.32	-0.16	-0.31
	[-4.38]	[-6.86]	[-3.96]	[-6.34]	[-3.63]
LOGOPEN(-1)	0.32	1.59		1.68	
	-0.19	-0.22		-0.20	
	[1.69]	[7.42]		[8.343]	
FBAL(-1)	-0.03	-0.03	-0.05	-0.03	-0.05
	0.00	0.00	-0.01	0.00	-0.01
	[-5.99]	[-8.20]	[-7.04]	[-7.3]	[-6.78]
PCAPGDP(-1)		-0.06	-0.04	-0.06	-0.06
		-0.01	-0.02	-0.01	-0.01
		[-5.41]	[-2.45]	[-9.061]	[-4.45]
C	0.74	-3.16	5.91	-3.94	5.36
Error Correction:	D(LOGREER)	D(LOGREER)	D(LOGREER)	D(LOGREER)	D(LOGREER)
CointEq1	-0.14	-0.07	-0.09	-0.04	-0.08
	-0.05	-0.05	-0.03	-0.05	-0.03
	[-2.97]	[-1.46]	[-2.95]	[-1.92]	[-2.73]
R-squared	0.47	0.39	0.47	0.34	0.43

Figure 1. The REER and the EREER (nonsmoothed data), *excluding* private capital
Replication of the results of IMF Working Paper 06/257. For REER index, 2000=100.

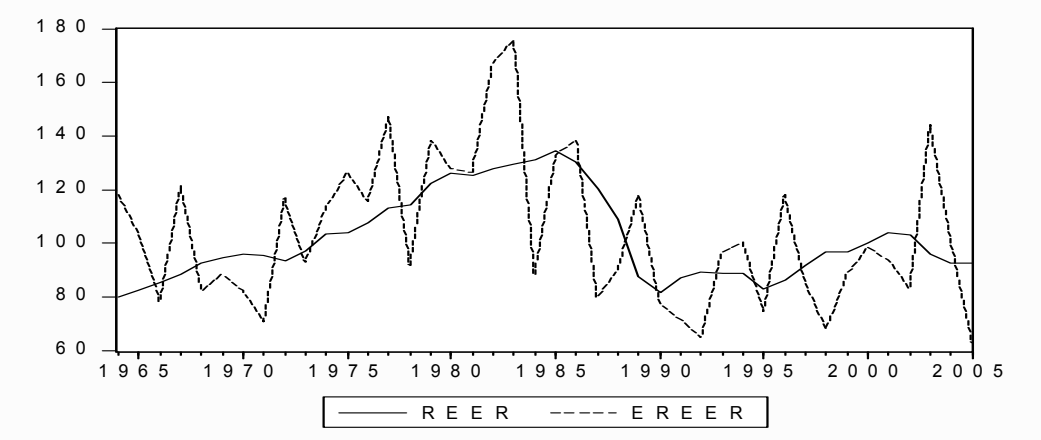


Figure 2. The REER and the EREER (nonsmoothed data), *including* private capital
The overvaluation of the REER falls considerably with private capital flows included.

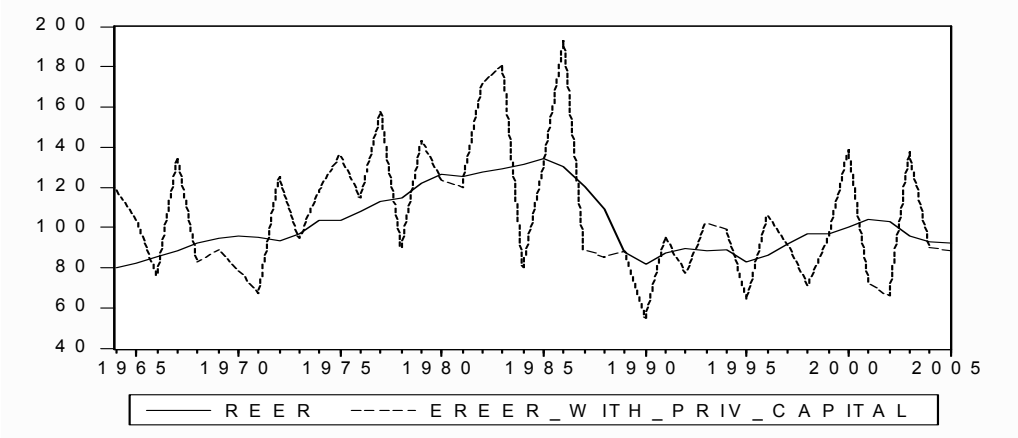
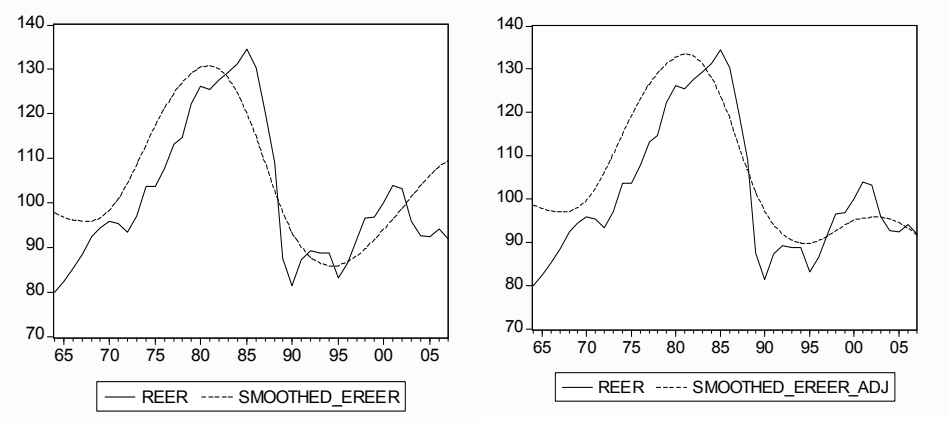


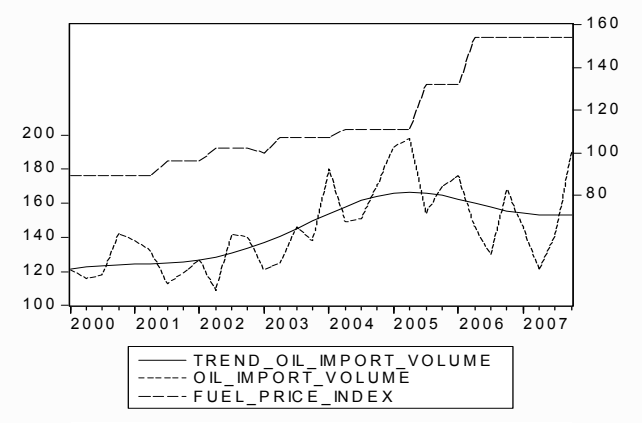
Figure 3. The REER & EREER (smoothed data), *including* private capital to 2007
Large private capital inflows during 2006–07 suggest undervaluation (left chart), but not after adjusting for exceptional FDI items related to bank recapitalizations (right chart).



Appendix II. Explaining Import Developments in Jordan

Given the dominant role of imports in determining current account developments, understanding its key determinants can help explain past developments and the future outlook. The two distinct subcategories of imports—oil and non-oil—are reviewed below.

Oil Imports. Oil import demand has had a statistically significant relationship with economic activity and prices. For the latter variable, a proxy for fuel prices faced by domestic consumers was obtained by using movements in the "Fuels and Electricity" line item of the CPI index—which, as expected, shows level jumps coinciding with changes in administered prices. As for oil import volumes, this series shows a trend decline since 2005—the year large fuel price adjustments began—with a 13 percent reduction recorded in 2006 followed by a 4 percent fall in 2007 (the quarterly profile of oil import volumes in 2007 is distorted somewhat by a sharp mid-year drop, coinciding with a refinery shutdown, that was subsequently associated with a spike in oil import volumes at year-end). The empirical estimates of oil import volume determinants, based on 2000Q1–2007Q4 data, suggest that (i) without the 2006 price increases, oil imports would have been 1½ p.p. of GDP higher (a current account of -19 instead of -17½ percent of GDP); and (ii) looking ahead, the 47 percent price adjustment in February 2008 would imply (all else equal) volume reductions at least as high as those of 2007. The elasticity estimate is heavily affected by 2005–06 developments, however, and may be overstated as the consumer response after a long period of unchanged prices may differ from that under more modest and regular price changes.



Log(Oil Import Volumes) = 0.90 – 0.71* *Log(Fuel price index)* + 0.98**Log(GDP)* *R-2=0.31*
[-1.9] [2.8] [T-stats]

Non-oil import outturns. Estimating an import demand function relating real non-oil imports to a measure of real economic activity, import prices, and the REER (applied to quarterly data from 2000Q1–2007Q4) shows an import elasticity with respect to real GDP of 1.4. This is the only consistently significant variable found to explain import movements. The results for import prices and the REER are not statistically insignificant, even after testing for lagged effects (this is consistent with recent observations, i.e., imports accelerated in 2003–05 and in 2007 despite REER depreciations in those years).

Non-oil import projections. Projections for non-oil imports are guided by GDP growth and judgments that take account of latest developments as well as WEO forecasts for non-oil

commodity prices (a preferable approach than relying solely on past elasticities). While an import growth rate near nominal GDP may seem to underestimate future import growth given recent trends, expectations of medium-term declines in unit prices for non-oil import commodities (based on WEO projections) imply that current projections still allow for much higher rates of non-oil import volume growth (see below).

	2008	2009	2010	2011	2012	2013
Non-oil import growth (BOP proj):	14.7	8.1	8.4	8.4	8.4	8.4
WEO non-oil comm price change:	7.0	-4.9	-5.8	-3.5	-2.0	-2.2
Implied Volume growth:	7.0	13.0	14.2	11.9	10.4	10.6
Real GDP growth projection:	5.5	5.8	6.0	6.0	6.0	6.0

Appendix III. Estimating Jordan's Underlying Current Account

Jordan's current account position has been affected by a number of temporary factors in recent years. Four such factors are noted below, alongside assumptions used to derive the size of the temporary impact.

- **Temporary factors arising from the Iraq conflict.**
  - **Foregone exports to Iraq**. Iraq was once the top destination for Jordanian exports, but the start of the Iraq conflict four years ago reduced exports to Iraq from 20 percent of total exports (in the years just prior to 2003) to only 10 percent today. It is difficult to determine what share of the 10 percentage point drop was completely "lost" due to a break-up of long-established trade links and how much was simply re-oriented to other countries. On an illustrative basis, however, half of the total is assumed.
  - **Imports of Iraqi migrants.** The UN estimates at least 500,000 Iraqi migrants now live in Jordan, or 8 percent of the six million population. This share of the import bill might thus be attributed to Iraqis, but a more conservative assumption that Iraqis have just half the propensity to import (per capita) is used since many migrants would not have the consumption patterns of permanently settled individuals.
  - **Private transfers/funds of Iraqis.** The extra imports of Iraqi migrants must be financed by a combination of funds that migrants brought along with them (or keep receiving from senders in Iraq) and by earnings they may be collecting in Jordan (e.g., from employment). Assuming all Iraqi migrant imports are fully self-financed, the impact on Jordan's overall BOP is zero on a net basis. If the associated financing is in the form of capital account flows (e.g., deposit movements recorded in the financial account) and/or unrecorded (hence in errors and omissions), Jordan's current account deficit is unduly exaggerated (as imports of Iraqis are fully recorded but not their financing) and the underlying current account correspondingly stronger (see Table in Section C). If, on the other hand, the migrants' imports are financed by recorded private transfers (remittances), the impact on Jordan's current account is zero.
- **Temporary terms-of-trade impacts.** The 2007 increase in non-oil imports largely reflected price effects, particularly a 13 percent jump in non-oil import prices (which happens to match exactly the 2007 increase in the non-fuel price index used by WEO). The WEO projects that non-oil prices will fall 11 percent by 2013, indicating that most of the 2007 price increase (relative to 2006) will unwind over the medium-term. Much of the 2007 growth in non-oil imports was therefore due to the exceptionally high prices and was stripped out of the calculation of the underlying current account (this amounts to assuming the same volume growth as actually recorded in 2007 but applying a price

growth of only 1 percent, or the difference between 2006 and the projected medium-term import prices). For exports, a similar approach is also applied as there is some decline in mineral prices expected by 2013.

- **Mining sector production stoppages.** Since 2006, both potash and phosphate production have been lower than their normal levels due to facility shutdowns and a breakdown in rail transport (the sole mode of transport to the ports). While the production volume recovered somewhat in 2007, it was still below the average of the past five years, which was used as the counterfactual for such exports in 2007.

Grants shortfall relative to norm. Jordan received only 2.3 percent of GDP in grants in 2007. However, over the previous five-year period, grants averaged 8 percent of GDP per annum and never fell below 5 percent of GDP in any single year. The authorities expect a recovery of grants over the medium term, reflecting a recent large, multi-year commitment from the U.S. as well as continued strong support from other donors. On the basis of a medium-term grant norm of $650 million (still a reduction from historical levels), the 2007 outturn of $375 million represented a shortfall equivalent to 1.7 percent of GDP.