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# IMF Working Paper

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## Egypt—Searching for Binding Constraints on Growth

*Klaus Enders*



## IMF Working Paper

Middle East and Central Asia Department

### Egypt—Searching for Binding Constraints on Growth

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#### Abstract

**This Working Paper should not be reported as representing the views of the IMF.**

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Since 2004 Egypt's growth has been accelerating in step with the launching of a series of ambitious reforms, reversing a trend during the preceding half-decade when Egypt's growth rate fell below that of most regional peers and well below that of the average developing country. This paper seeks to identify factors that held back Egypt's growth in the recent past, and explores whether recent reforms have removed the most binding constraints to allow at least a temporary growth spurt. Overall, the Egyptian reforms launched in 2004 appear to have focused well on the most critical constraints—reducing red tape and tax rates, and improving access to foreign exchange—thereby getting a strong growth response out of a limited set of reforms. However, inefficient bureaucracy remains an important obstacle to higher growth and reforms in this area should continue to have high payoffs. Ongoing reforms are also addressing constraints that are likely to become binding soon (or have become so already), such as inefficient financial intermediation and high public debt. Improvements in education may rapidly become a critical factor for sustaining higher growth.

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## I. INTRODUCTION

1. Egypt's long-run growth performance during 1980–2000 was strong compared to the average emerging market economy, although well below the high-growth emerging market countries in Asia. However, during 2001–05 Egypt grew less than most of its regional peers and much less than the average developing country or emerging market. Since 2004, growth has again been accelerating in step with the implementation of a series of ambitious reforms (Appendix I). This paper attempts to identify the constraints that may have held back Egypt's growth in the recent past, and explores whether recent reforms have removed the most binding constraints and which constraints may become binding in the near future.

Table 1. Real per Capita GDP Growth Rates

|                           | 1980–2000  | 2001–2005  |
|---------------------------|------------|------------|
| World                     | 2.2        | 3.1        |
| Developing Countries      | 2.4        | 5.1        |
| Emerging Market Economies | 2.6        | 5.0        |
| Industrial Countries      | 2.1        | 1.4        |
| Brazil                    | 0.7        | 0.7        |
| <b>Egypt</b>              | <b>2.4</b> | <b>1.7</b> |
| Malaysia                  | 3.9        | 2.5        |
| South Africa              | -0.2       | 2.7        |
| Turkey                    | 2.2        | 2.9        |
| Morocco                   | 1.2        | 3.0        |
| Tunisia                   | 2.2        | 3.3        |
| Indonesia                 | 3.3        | 3.3        |
| Jordan                    | -0.1       | 3.5        |
| India                     | 3.4        | 4.7        |

Source: IMF World Economic Outlook Database (September 2006).

2. The approach employed follows that developed in Hausmann, Pritchett, and Rodrik (2004) (see Dobronogov and Iqbal, 2004, for a similar undertaking seeking to identify the growth constraints on Egypt during 1998–2003). It starts from a view of growth as the result of a process akin to optimization under constraints, and seeks to identify factors that are the “most” binding in the sense that their removal allows at least temporary growth spurts (until other constraints become binding).<sup>2</sup> Since theoretically, in a situation with several distortions present, the removal of one distortion may aggravate the impact of remaining distortions and result in an overall negative effect,<sup>3</sup> this approach requires the assumption (hope) that, by removing the “most binding” distortions, the positive direct effect should dominate any negative indirect effects. The methodology is by nature “case study” and different from a typical growth regression, where growth is the dependent variable to be explained by (proxies of) variables such as credit, macro-stability, quality of institutions, etc. While such regressions can help to identify potential growth constraints (and their importance) by picking up average impact over time or among a group of countries, they cannot identify

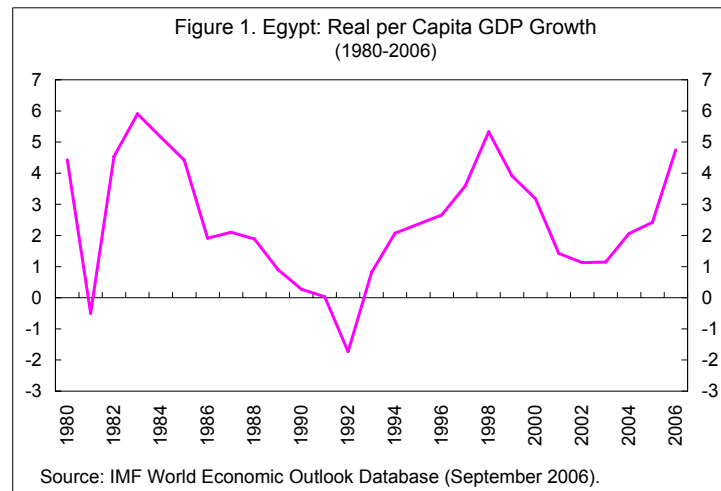
<sup>2</sup> This focus on a few relevant constraints is sometimes contrasted with the straw man of an IFI economist armed with a long laundry list (“Washington Consensus”) of textbook reform recommendations that governments have neither the administrative capacity nor the political capital to implement.

<sup>3</sup> “Theory of Second Best” (Lipsey and Lancaster, 1956); see Appendix II for some conceptual clarification. The theory of second best would constitute a sound theoretical underpinning of the “laundry-list” approach to reform, because it implies that the only completely certain way for reforms to remove growth constraints is removal of all distortions at once.

which growth constraints are binding for a particular country at a particular time.<sup>4</sup> Limitations of the approach (Zettelmeyer 2006) include that it may be difficult to identify constraints with any certainty; and that identifying a constraint does not necessarily help in understanding how to fix it. (Nevertheless, a good diagnostic would still seem a worthwhile first step toward finding a cure).

3. The empirical support for this approach includes evidence that temporary growth spurts are a frequent phenomenon—consistent with the view that policymakers occasionally hit on the right reform that removes a binding constraint, whether striving after “best practice” in a wide range of areas or “crossing the stream by groping for stones.”<sup>5</sup> Most of the growth spurts eventually fizzled out—indicating that other constraints became binding, perhaps because their removal required politically more difficult or deeper institutional reforms. Of course, growth spurts may also reflect exogenous shocks to real variables (productivity, oil prices, ...) and do not provide conclusive evidence per se that the removal of policy-induced constraints is the key factor explaining fluctuations in growth. For example, the run-up in oil prices in recent years has contributed to a boom in the Middle East region that certainly has supported growth in Egypt (notably through inflows of capital from the Gulf countries, remittances, and tourism). But an historically low correlation between oil prices and growth in Egypt point to the importance of removing constraints that may prevent Egypt from taking full advantage of a favorable external environment.

4. For example, defining a “growth spurt” as any period longer than two years during which per capita growth exceeded 2 percent in each year, Egypt has experienced two such growth spurts since 1980 (during 1982–86 and 1996–2001) with another one underway since 2004. The first growth spurt was part of the long period of high growth triggered by the *infitah*, the dismantling of central planning, combined with favorable external financing conditions. During that period, severe macroeconomic imbalances built up (driven by large fiscal deficits) and eventually became unsustainable, leading to a Fund-supported stabilization program including a major restructuring and reduction of



<sup>4</sup> The approaches are complements rather than substitutes: growth regressions can help identify the variables that potentially reflect growth constraints and thus inform the growth diagnostic of a particular case.

<sup>5</sup> As the Chinese experience is sometimes described (World Bank, 2005).

external debt. Macroeconomic stabilization in the early 1990s (see Subramanian, 1997, for a detailed account) and another round of liberalizing reforms triggered the growth spurt of 1996–2001, which fizzled out perhaps because the constraints discussed in the present paper became binding.

## II. SEARCHING FOR BINDING CONSTRAINTS ON GROWTH

5. The search for binding constraints is implemented by classifying constraints within a “diagnostic decision tree” (Hausmann, Rodrik, and Velasco, 2005), starting with three broad categories: access to finance, appropriability of returns, and availability of complementary factors of production. That is, one looks for evidence whether growth is constrained because entrepreneurs and investors cannot get the capital they need to implement their business ideas; or because entrepreneurs do not want to invest (even though they could get the financing and production factors needed) because they expect not to be able to retain a sufficient share of the fruits of their efforts; or because complementary factors such as public infrastructure, institutional infrastructure ensuring enforcement of contracts and property rights, or labor skills are missing. The branch that seems to contain binding constraints is then further refined. For example, if access to finance seems to be a binding constraint, the next step is to analyze whether the constraint derives from low domestic savings, lack of access to foreign savings, or weaknesses in financial intermediation. If appropriability of returns is the constraint, the analysis is refined by asking whether this is related to microeconomic risks (say high formal taxes, corruption “taxes,” or the high cost of bureaucracy) or macroeconomic risks (such as a debt overhang).

6. An appropriability constraint that may be potentially quite important for developing countries (as highlighted in the recent literature), relates to a possibly excessive private cost—compared to the social benefits—of discovering and moving toward the production of “better” products (Hausmann and Klinger, 2006). “Better” products here means products that better fit comparative advantage, are geared toward fast-growing rather than slow-growing markets, or are associated with positive externalities such as (economic) “nearness” to other high-value products into which expansion is then easier given spillovers from learning-by-doing. For example, a country that specialized in producing cotton may find it difficult to move directly to producing aircraft, since little that has been learned about growing and marketing cotton will help in producing and marketing aircraft. Cotton and aircraft are “distant.” By contrast, the country may find it easier to move into garments, and from there into high-quality textiles, products that are hence “nearer” to cotton. The potential importance of this constraint is underscored by empirical evidence indicating that “discovery” of “better” export products is highly correlated with subsequent higher growth (Hausmann, Hwang, and Rodrik, 2005a).

7. The methodology employed to diagnose growth constraints is limited by the availability of data. Business and other surveys are an important source of information: what is perceived as an obstacle to growth by entrepreneurs and investors may indeed be an

obstacle.<sup>6</sup> Standard economic statistics can provide hints: low domestic savings, high rates of investment, and high real interest rates would, for example, support suspicion that availability of finance is a problem while appropriability is not. Comparatively high returns on a certain factor would be a tell-tale sign that this factor is associated with a binding constraint. Similarly, returns on nonconstraining factors would appear comparatively low. For example, if human capital is a binding constraint, returns on education should be high. Since most of the survey and data used in this paper are economy-wide in nature, this exercise may not always capture sector specific constraints (as discussed below, financing for example may be a constraint more binding for agriculture and perhaps small enterprises in Egypt than for large-scale manufacturing); refining the approach to comb through sectoral growth constraints may be a promising venue for future research.

8. Our search for binding growth constraints in Egypt focuses on 2000–06. An important dimension of the analysis will be the comparison with a “peer group” of other countries: Morocco, Tunisia, Jordan, and Turkey as regional peers; India, South Africa, and Brazil as major emerging markets in other continents; and Malaysia and Indonesia as successful emerging markets that share many characteristics with Egypt, including Islamic traditions. While unlikely to be exhaustive, the analysis hopes to contribute to the debate on how to deploy the Egyptian government’s limited resources in reforms that have a maximum impact on growth.

### A. Is it Financing?

9. We start by asking whether access to finance has been a critical factor holding back growth in Egypt. Business surveys rank access to finance as the top (or second-most important) obstacle to business in recent years.<sup>7</sup> What is the evidence that low national savings, difficulty in accessing foreign savings, or weaknesses in financial intermediation have been critical growth constraints?

Table 2. Egypt: The Most Problematic Factors for Doing Business  
(Rank among 14 factors)

| Year of Report                  | 2003/04 | 2004/05 | 2005/06 | 2006/07 |
|---------------------------------|---------|---------|---------|---------|
| Access to financing             | 1       | 1       | 2       | 1       |
| Policy instability              | 2       | 5       | 3       | 5       |
| Inefficient bureaucracy         | 3       | 4       | 1       | 2       |
| Tax regulations                 | 4       | 2       | 4       | 6       |
| Foreign currency regulation     | 5       | 6       | 12      | 12      |
| Tax rates                       | 6       | 3       | 5       | 10      |
| Corruption                      | 7       | 10      | 8       | 4       |
| Inadequately educated workforce | 8       | 8       | 7       | 3       |
| Inflation                       | 9       | 7       | 6       | 8       |
| Restrictive labor regulations   | 10      | 9       | 9       | 11      |
| Poor work ethic                 | 11      | 11      | 10      | 9       |
| Inadequate infrastructure       | 12      | 12      | 11      | 7       |
| Government instability/coups    | 13      | 14      | 13      | 13      |
| Crime and theft                 | 14      | 13      | 14      | 14      |

Source: World Economic Forum (WEF) Global Competitiveness Reports 2004–2007.

<sup>6</sup> Business surveys have intrinsic methodological limitations. For example, concerns about corruption may increase not because of an increase in actual corruption, but because reforms have moved the country onto the radar screen of international investors and, as a result, the group responding to the survey has changed and now includes businessmen who look to the country as a potential destination for investment, and naturally pay greater attention to corruption issues.

<sup>7</sup> The Executive Opinion Surveys (henceforth referred to as WEF surveys) are part of the World Economic Forum’s Global Competitiveness Reports 2004/05–2006/07 (henceforth WEF Reports).



10. National savings have been persistently well below the Asian comparators and mostly below those of regional peers. Only Brazil and South Africa had slightly lower savings rates among the other peers.<sup>8</sup> However, real bank lending rates<sup>9</sup> during 1995–2002 have been fluctuating in a range of 5–12 percent, broadly in line with most peers, except for much higher rates in Brazil (indicating again a critical financing constraint in that country) and more volatile rates in Turkey and Asia. During 2003–06, Egypt’s real lending rates have been declining sharply, to 2–3 percent in 2005–06, while private sector credit growth (and in particular lending to corporates) remained subdued, indicating that, in recent years, investors were not aggressively competing for limited savings—even while growth picked up. It seems unlikely, therefore, that low national savings have recently constrained growth. Of course, it may well become a binding constraint in the near future: most recently, investment rose as a share of GDP, as did real lending rates in early 2006.

11. Potentially signaling constraints on access to foreign savings, Egyptian entrepreneurs ranked “foreign currency regulations” fairly high as obstacles to doing business in the 2003/04 and 2004/05 WEF surveys (Table 2). Presumably, these concerns reflect various formal and informal foreign exchange rationing schemes in place through 2004. However, concerns about foreign exchange dropped to twelfth place in the 2005/06 WEF survey and stayed there for 2006/07. This drop followed the sweeping reforms in 2004 that established an interbank foreign exchange market, where banks may freely trade foreign exchange, while removing all restrictions on current account transactions.<sup>10</sup> Furthermore, the relatively low level of foreign debt (around 30 percent of GDP in recent years) and a continuing, if declining, current account surplus—again in particularly dramatic contrast to Brazil for most of the time—indicate little pressure to mobilize foreign savings. Large companies have been able to tap foreign savings, as reflected in a spectacular surge in FDI and, more generally, a strong capital account in recent years. Relatively modest spreads (of both domestic treasuries and eurobond issues over U.S. treasuries) and stable or improving credit rankings in recent years also indicate that access to foreign capital was not an important constraint. Finally, the multi-year boom in the Cairo and Alexandria Stock Exchange (CASE) provided opportunities for accessing relatively cheap capital, at least for large investors (PE ratios averaged 13.2 during 2004 and 18.3 during 2005). Thus, the liberalization of the foreign exchange market in 2004 combined with other steps making Egypt more attractive to investors, likely removed a critical growth constraint—which was particularly beneficial as it

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<sup>8</sup> For Brazil, along with the very high real interest rates, this is important evidence for the diagnosis in Hausmann, Rodrik, and Velasco (2005) of access to finance as the critical constraint on growth.

<sup>9</sup> As proxied by nominal rates deflated by CPI inflation over the subsequent 12 month period (Figure 3); similar trends would emerge by using annual average nominal rates deflated by average annual CPI inflation.

<sup>10</sup> In early 2005, Egypt accepted the obligations under the Fund’s Article VIII, sections 2, 3, and 4. Capital account transactions are also largely free of restrictions.

allowed Egypt to more fully benefit from the regional boom triggered by the surge in oil prices.

12. What then explains that the WEF surveys ranked access to finance consistently as a top concern in recent years? The recent history of banking in Egypt may provide part of the answer. The system has been dominated by state banks and—until recently—joint venture banks with a heavy state influence, both of which lent generously to the economy through the 1990s. Indeed, real credit grew faster in Egypt than in most peers throughout the late 1990s, in part presumably reflecting financial deepening (i.e. catching-up from relatively low credit/GDP ratios). However, the build-up of large amounts of NPLs, along with low growth, indicates that credit was not efficiently allocated, reflecting most likely a range of governance problems in the sector. For example, nominal lending rates since the early 1990s fluctuated only narrowly around 13 percent, which, combined with anecdotal evidence of lower interest margins of state banks compared to private banks, points to some role for noncommercial considerations in credit allocation by state banks. The retrenchment in lending around 2001 (private sector credit as a share of GDP gradually declined during 2001–05), perhaps driven by steadily rising NPLs (which, according to official data, reached 26 percent of total loans in 2004/05) and the beginning of financial sector reforms (accelerating with the new government appointed in 2004), brought an end to “easy credit.” This may explain a perception by businessmen—especially those who had had access to state bank credit—that access to finance has now become “problematic.”

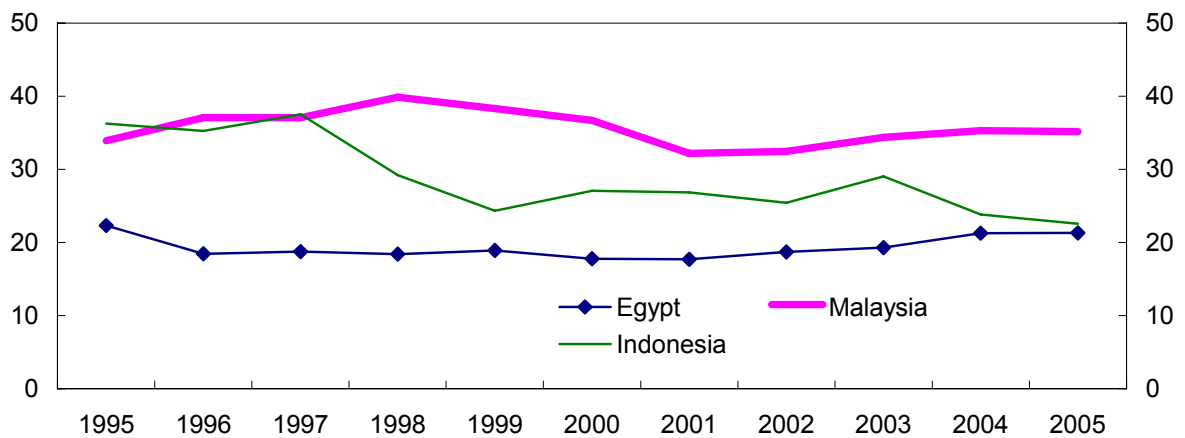
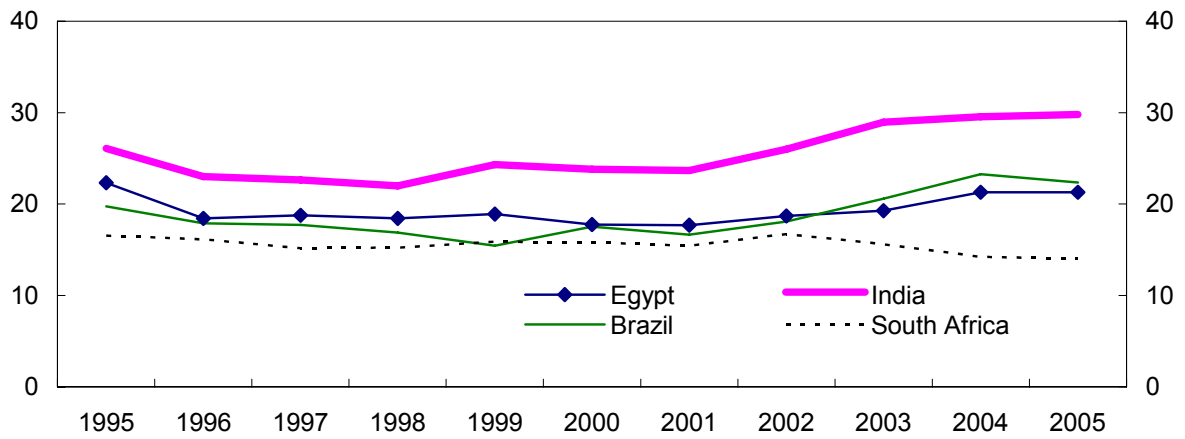
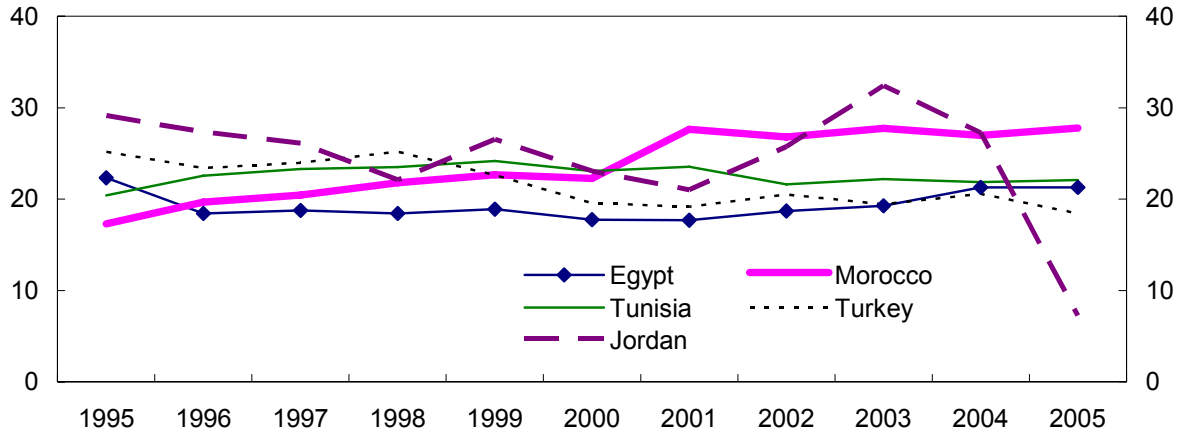
13. The prominent place of “access to finance” in surveys of business concerns could, however, also reflect an inefficiency of the financial system in allocating savings to entrepreneurs, rather than the availability of foreign or domestic savings. Dobronogov and Iqbal (2004) argue that access to finance in that sense has been the key recent constraint on growth,<sup>11</sup> citing as evidence for the banking system’s inefficiency that in 2003 only 17.4 percent of private firms had an outstanding loan from a financial institution; high and rising lending-deposit spreads; and an underdeveloped credit registry. They attribute the inefficiency to both government control over a large chunk of the banking system, and the dominant role of government securities in banks’ portfolios, both of which factors would weaken efficiency, notably by politicizing and softening budget constraints, and by reducing incentives for banks to develop the capacity to serve risky private investors.<sup>12</sup>

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<sup>11</sup> Part of their argument rests on low credit growth against the background of a high correlation between growth and private sector credit; however, this observation would also be consistent with, for example, low appropriability constraining private investment and hence demand for credit.

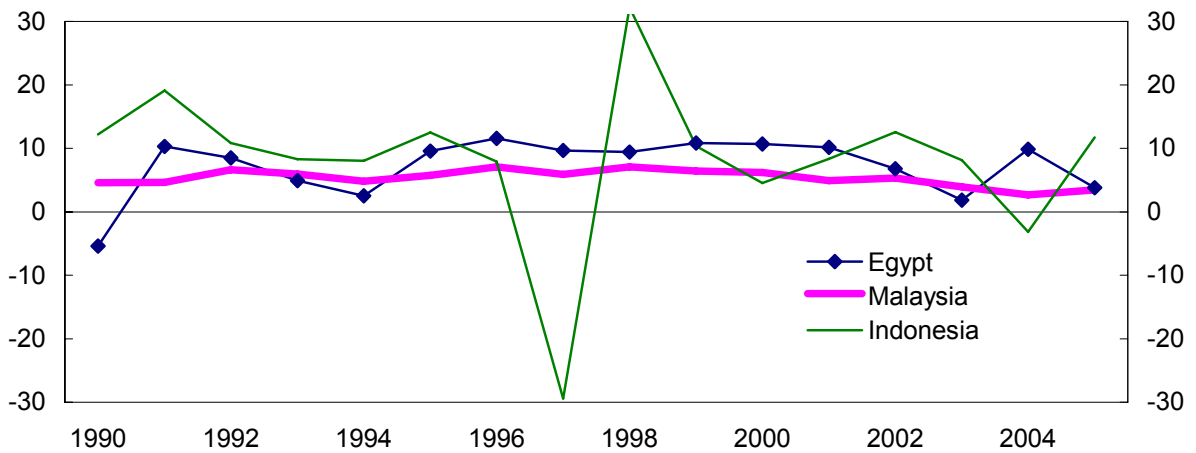
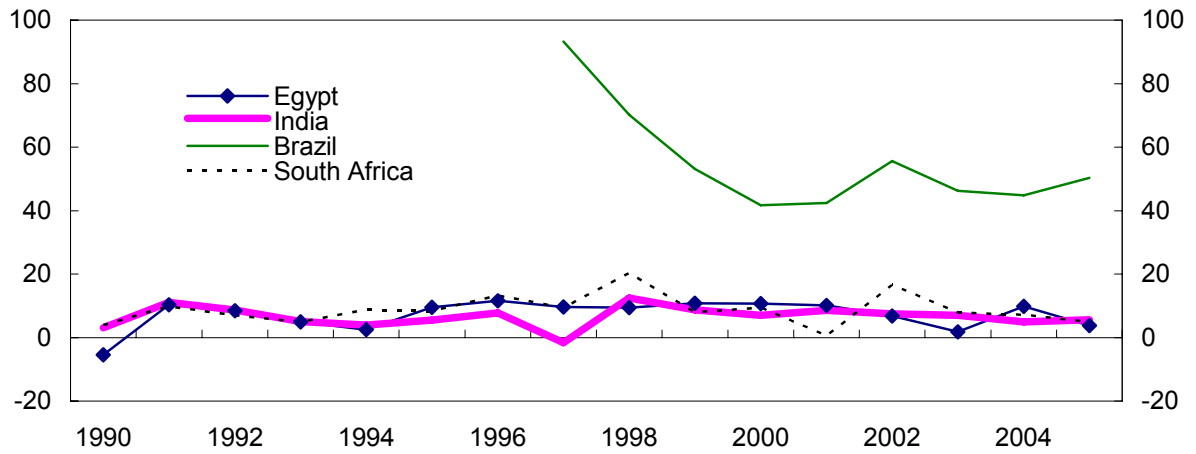
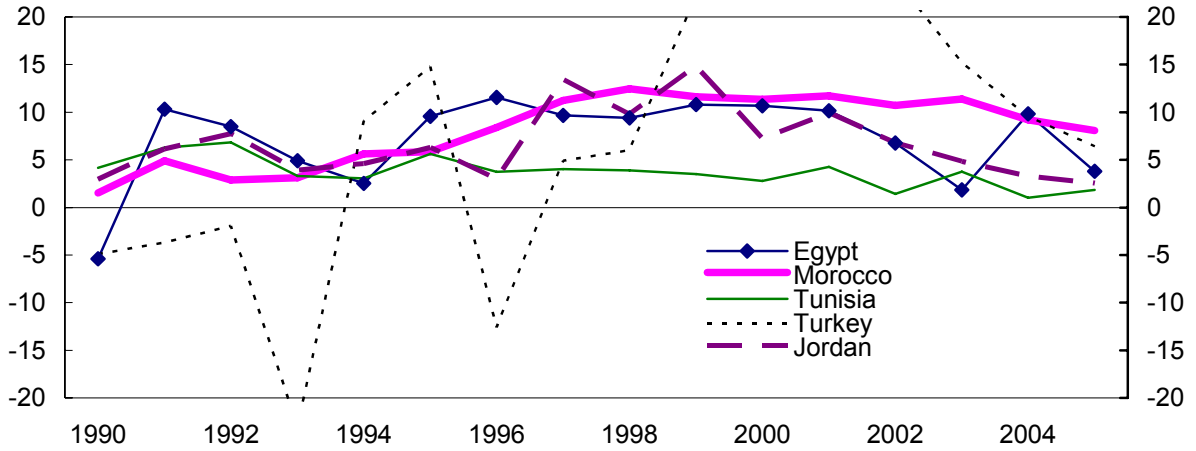
<sup>12</sup> See also Hauner (2006) for cross-country evidence of these mechanisms.

Figure 2. National Savings, 1995-2005  
(In percent of GDP)



Source: IMF *World Economic Outlook* Database (September 2006).

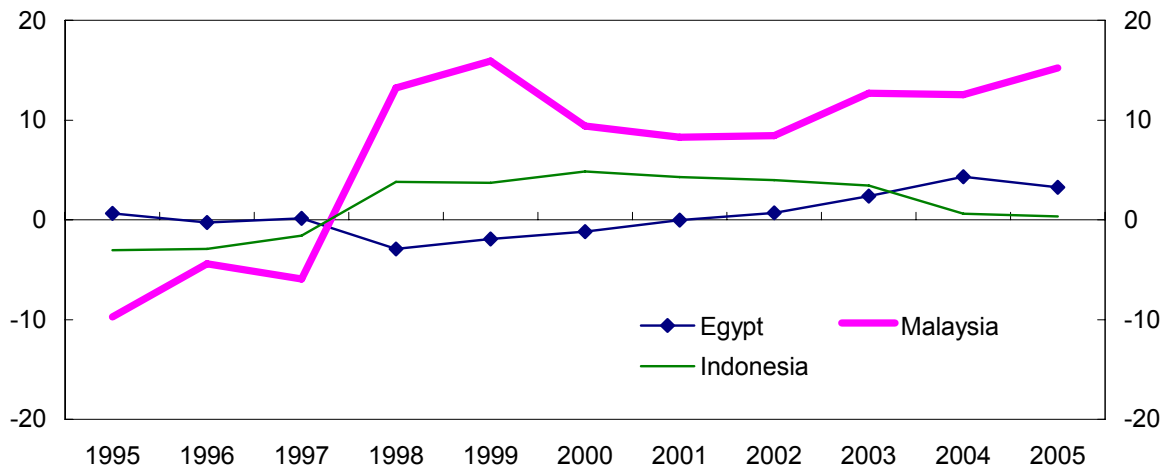
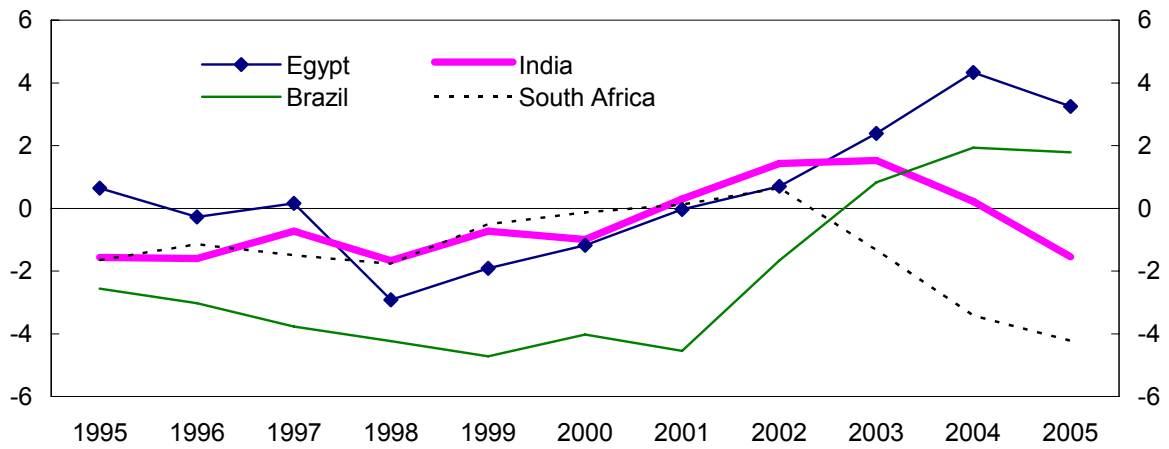
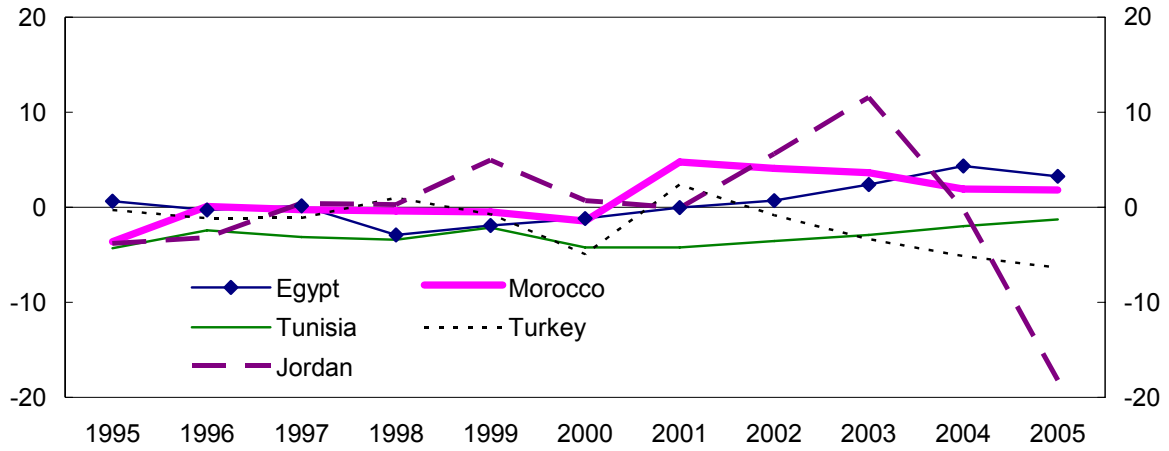
Figure 3. Real Bank Lending Rates, 1990-2005 1/  
(In percent)



Source: IMF *International Financial Statistics*.

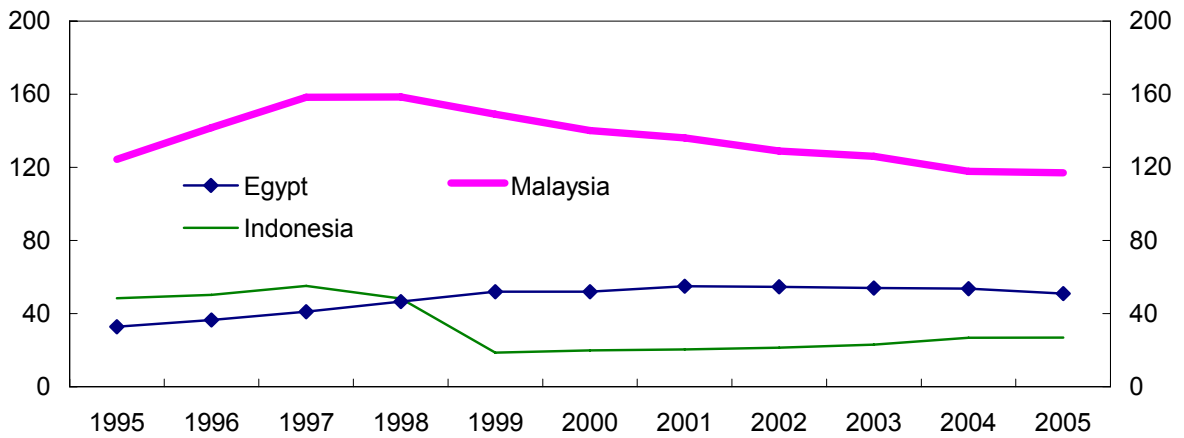
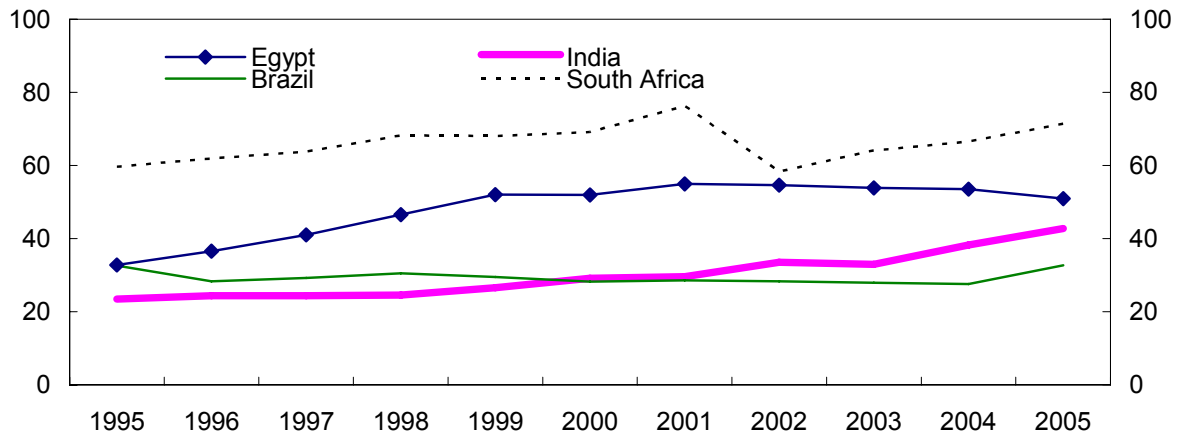
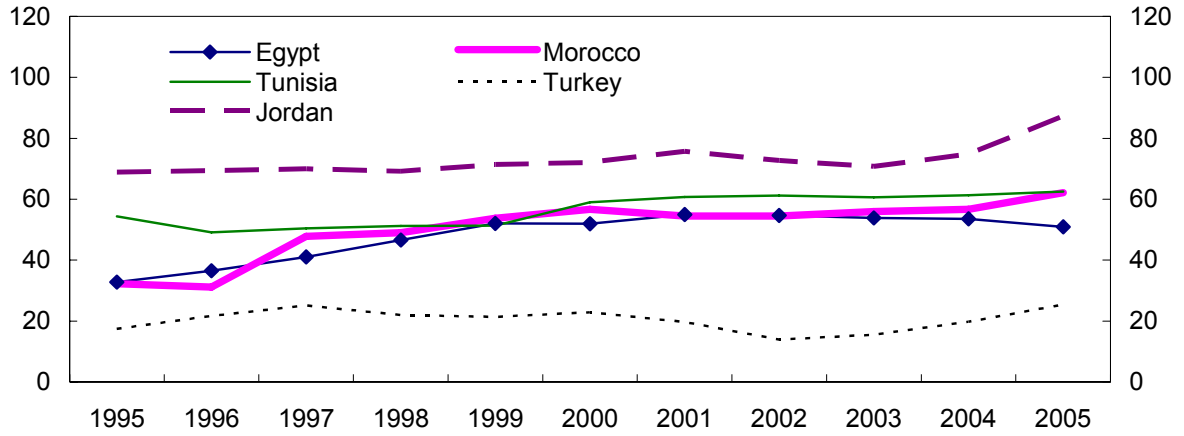
1/ End of period bank lending rate deflated by the change in the end of period CPI over the subsequent 12 months.

Figure 4. External Current Account, 1995-2005  
(In percent of GDP)



Source: IMF *World Economic Outlook* Database (September 2006).

Figure 5. Private Credit, 1995-2005  
(In percent of GDP)



Source: IMF *International Financial Statistics* and *World Economic Outlook* Database (September 2006).

14. Concerns about access to finance may however also reflect constraints on borrowers that have little to do with the financial system. In particular, for small firms, access to finance may be constrained by a limited capacity to produce the necessary documentation (business plan, license, title for collateral, etc.), in turn reflecting lack of education or inefficient government services (see below). Indeed, some of the most often mentioned obstacles to credit, the difficulties of creating, and collecting on, collateral, reflect institutional weaknesses in defining and protecting property rights, which belong to a different category of constraints to be discussed below. This view is also supported by Egypt's poor ranking under the "institutional environment" pillar of the Financial Development Index 2002/03 constructed in Creane and others (2006), in contrast to Egypt's relatively strong ranking under the six other components making up the index. Since there are some indications<sup>13</sup> that Egypt has a relatively large number of small and medium-sized enterprises compared to most peers, perhaps access to finance constraints become binding only above a certain threshold (of firm size), that is, they do not prevent the creation of small enterprises (because these require only internal or informal finance) but hinder SME growth beyond a certain size.

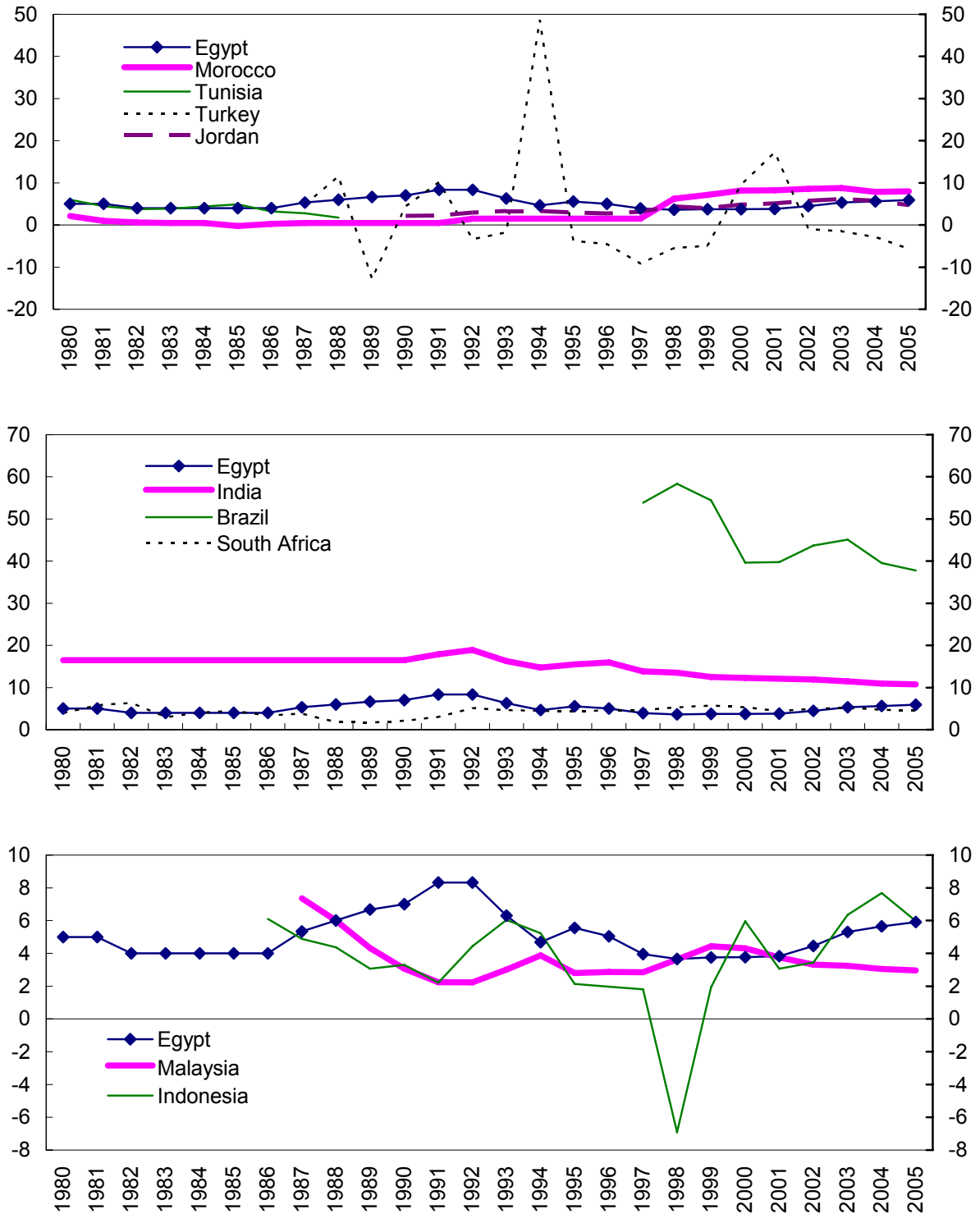
15. While the evidence strongly supports the view that financial intermediation in Egypt is weak, there is less evidence that this has recently constituted a critical constraint on growth. While growth picked up sharply during 2004–06, this seems unrelated to any efficiency improvements in the financial sector: the access to finance indicators in the World Bank's Doing Business reports—such as credit registry coverage—remained broadly unchanged; private credit (as a share of GDP) continued to stagnate; NPLs peaked in 2005; and the share of public sector debt in banks' portfolios grew further (IMF, 2006, Box 4).<sup>14</sup> Perhaps most importantly, spreads between lending and deposit rates have been steadily widening during 2000–06 pointing to continued or even rising inefficiency of financial intermediation.

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<sup>13</sup> IFC (2006). Strong caveats apply to these data, in particular to comparability across countries, as spelled out in the companion note.

<sup>14</sup> In the 2004 WEF report, Egypt's financial efficiency is ranked relatively low both compared to the peer group and compared to Egypt's global competitiveness index (GCI) ranking. In the subsequent WEF reports, a measure of financial efficiency is not reported separately anymore and becomes part of a "market efficiency" index, for which the above relatively low ranking continues to hold—another indication that access to finance obstacles have changed little over the last few years.

Figure 6. Banking Spreads (Lending Minus Deposit Rates), 1980-2005 1/  
(In percent)



Source: IMF *International Financial Statistics*.



16. Finally, if Egypt were to suffer from a dearth of capital constraining entrepreneurial activity, returns on complementary factors of production, such as land or labor, should be depressed. However, anecdotal evidence points to rapidly rising real estate prices in recent years (and share prices of listed real estate companies have been generally rising even faster than the broader market) and real wages have been rising at least modestly (on average 3.9 percent annually during 1999–2004). Returns on human capital (education) are relatively low but seem to be drifting upwards (see below). On balance, access to finance does not seem to have been a major binding constraint on growth in recent years, even though low national savings and inefficiencies of the financial sector could become constraining factors as other reforms unleash entrepreneurial spirit and thus demand for investment financing.



### B. Appropriability of Returns

17. Next, we explore factors possibly weakening the appropriability of returns, thereby discouraging investment and business activity. Suspects to be investigated include formal taxation; fear of future taxation (as would arise, for example, from debt overhang concerns); the time and money spent on red tape (cost of bureaucratic regulations); corruption (a form of informal taxation); and the cost of innovation and exploration.

18. Complaints about the level of tax rates rose from sixth place in 2004 to third in 2005 in the WEF business surveys, before dropping to tenth place in 2007 (Table 2). Similarly, in the 2004 and 2005 WEF surveys, complaints about tax regulations ranked fourth and second place, respectively, and again fourth place in 2006, before dropping to sixth place in the 2007 report.

19. Corporate and personal income taxes through 2004 were indeed quite high in Egypt (with statutory rates up to 40 percent), and following tax reforms in Jordan and India, Egypt's top corporate income tax rate had become the highest among the peer group by 1999. However, a major tax reform in 2005 halved the top income and corporate tax rates (to 20 percent) and put Egypt's rate among the lowest of the peer group.<sup>15</sup> The reforms also started to phase out a range of exemptions and involved a major overhaul of tax administration, including a move to self-assessment, preparation of a modern VAT to replace

<sup>15</sup> For details, see IMF (2006).

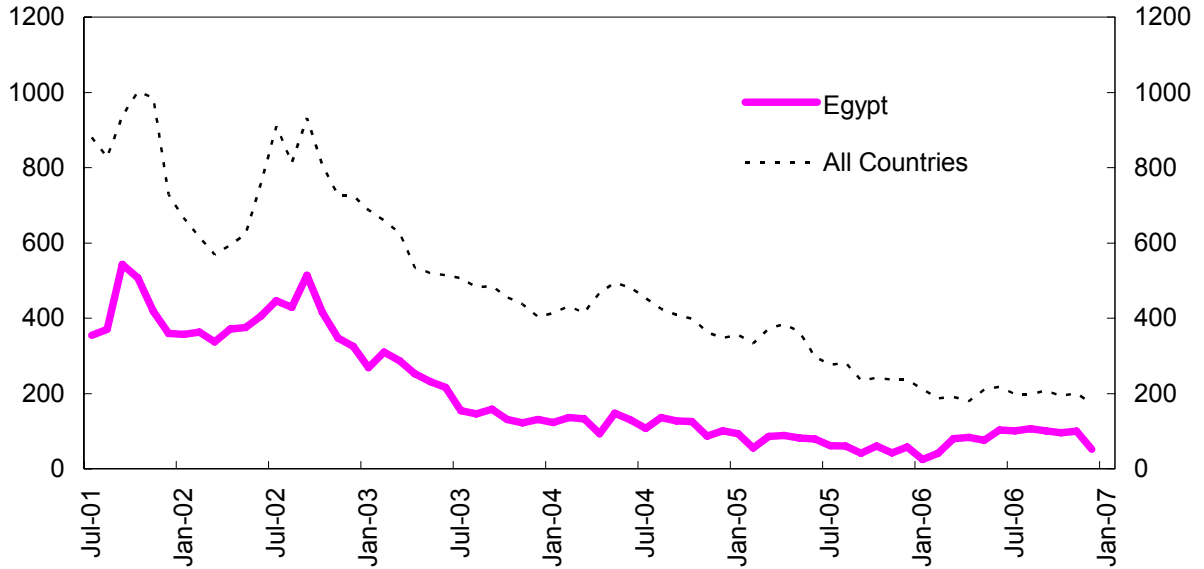
a complex sales tax, and the beginning of the integration of the income and sales tax departments. Thus, the recent tax reforms may well have started to remove a critical growth constraint, consistent with the sharp drop in the importance of tax-related concerns in the 2007 WEF survey and with the recent growth acceleration.

20. Another threat to private returns may arise from macroeconomic imbalances, which could, for example, give rise to concerns about future inflation taxes, or losses associated with a debt crisis. Egyptian businesses' concern about inflation has been low so far: it rose slightly from ninth place in the 2003/04 WEF survey, to sixth place in 2005/06, and eighth place in 2006/07. Given that the surveys reflect polls conducted around springtime (say spring 2006 for the 2006/07 report), these results would not yet register any business reaction to the sharp acceleration of inflation in the second half of 2006 (CPI inflation rose from 4 percent y/y in March 2006 to 12 percent by end-2006, partly related to temporary supply shocks and adjustment in administered prices). However, "policy uncertainty" ranks relatively high in investors' concerns, perhaps reflecting worries about the possibility of future economic policy regime changes that could lower appropriability of returns. Furthermore, in the macro-economy pillar of the WEF's global competitiveness index (GCI), Egypt dropped from rank 50 in the 2005/06 report to rank 108 in 2006/07, mostly reflecting the high fiscal deficit and rising public debt. However, while Egypt's high public debt (at end-2005/06 around 70 percent of GDP) could have weakened investment incentives through debt overhang effects (e.g., the fear of future tax or inflation increases to fund the rising debt service),<sup>16</sup> in the WEF surveys there is little trace of such concerns. Furthermore, risk premia implicit in interest rates on domestic or foreign debt appear comparatively low, and investment rates (which typically declined in the years before debt problems surfaced, as in the years preceding the 1991 debt restructuring) have been edging up in recent years. Similarly, fear of higher inflation arising from a debt overhang would typically drive up dollarization (as it did in Egypt in the years prior to the 1991 crisis), whereas dollarization has been on a declining trend since 2003/04 (although the drop in early 2005 largely reflects

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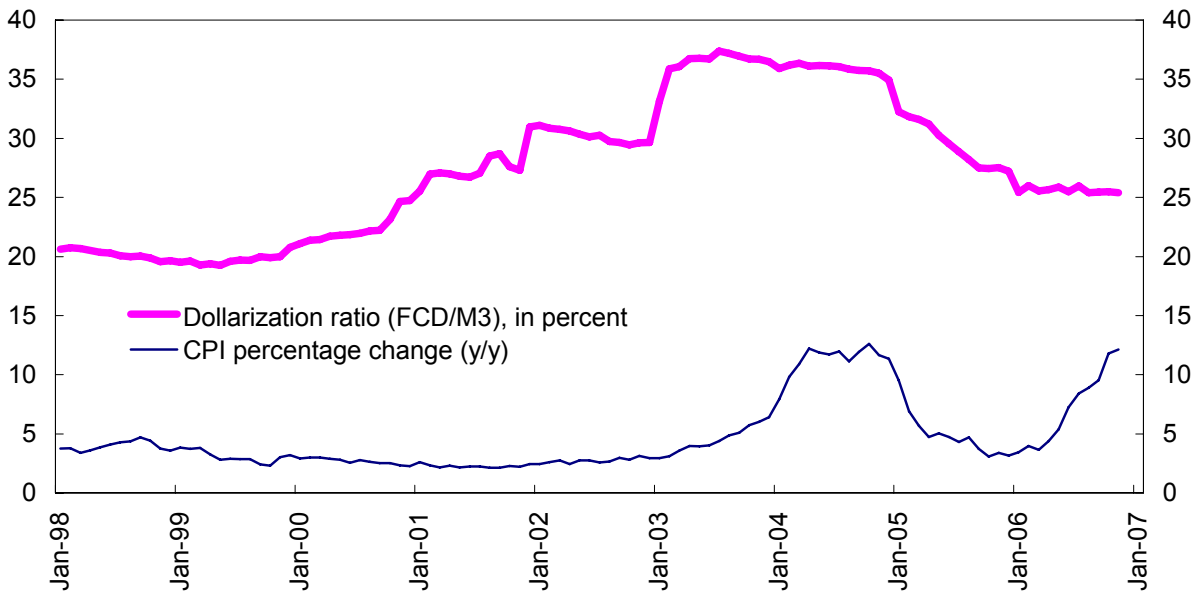
<sup>16</sup> High public debt may affect private investment through additional channels (Blavy, 2006), such as tilting investments to projects with shorter time horizons because of greater uncertainty and/or because liquidity constraints are aggravated; by reducing the scope for complementary public investments; or by reducing reform willingness as governments perceive the benefits of reforms to accrue disproportionately to creditors.

Figure 8a. Sovereign Spread  
(JP Morgan Global Emerging Market Bond Index)



Source: JP Morgan Markets; Bloomberg.

Figure 8b. Egypt: Dollarization and Inflation



Source: IMF *International Finance Statistics*.

the impact of the steep appreciation of the LE/\$ rate at that time).<sup>17</sup> Thus, there is little evidence that debt overhang concerns currently constrain investment and growth.<sup>18</sup> Even if not a particularly important factor in the recent past, with continued high fiscal deficits this concern is, however, bound to move up the ranks of potential growth hurdles and could become a binding constraint at some point.

21. Entrepreneurs in Egypt may also be faced with a host of informal “taxes” in the form of costly (notably time consuming) bureaucratic regulations (red tape), corruption, and weak enforcement of contracts and property rights. Indeed, Egypt ranks low on these scores in various international surveys. In the latest World Bank Doing Business Report (2007), Egypt is ranked very low and well below the peers in the comparator group.<sup>19</sup> The low ranking reflects high costs related to dealing with licenses, enforcing contracts, and getting credit, even though by 2005/06, Egypt had moved to the middle of its peer group in the ranking of the costs of trading across borders, paying taxes, and closing a business. In fact, the global ranking of most of the peers deteriorated

|              | 2005       | 2006 2/    | 2007       |
|--------------|------------|------------|------------|
| Malaysia     | 25         | 25         | 25         |
| South Africa | 28         | 29         | 29         |
| Jordan       | 73         | 78         | 78         |
| Tunisia      | 77         | 80         | 80         |
| Turkey       | 84         | 91         | 91         |
| Morocco      | 117        | 115        | 115        |
| Brazil       | 122        | 121        | 121        |
| India        | 138        | 134        | 134        |
| Indonesia    | 131        | 135        | 135        |
| <b>Egypt</b> | <b>164</b> | <b>165</b> | <b>165</b> |

Source: World Bank *Doing Business*, 2005-2007.  
 1/ Ranking out of 175 countries in 2005, 155 in 2006, and 175 in 2007.  
 2/ As per revised ranking published in *Doing Business* 2007.

<sup>17</sup> See Reinhart, Rogoff, and Savastano (2003) for a discussion of the link between dollarization and debt problems. That paper also documents that Egypt—while one of the countries having experienced debt problems at some point in time—never resorted to the very high inflation rates ahead of default that were typical for “serial defaulters”; indeed even in the years leading to the 1991 crisis, inflation remained fairly stable at around 20 percent and reliance on the inflation tax quickly dropped thereafter (Subramanian, 1997).

<sup>18</sup> Dobronogov and Iqbal (2004) argue that even the much greater macroeconomic imbalances in the early 1990s (with total public debt exceeding 150 percent of GDP) did not constrain growth as their resolution by the mid-1990s “did not help to increase private investment rates.” However, the sizeable increase in nongovernment investment rates (from an average of 11 percent of GDP during 1991/92–1995/96 to 14 percent for the subsequent five years), and the concomitant growth spurt provide some evidence that macroeconomic stabilization in the early 1990s did remove a then-binding growth constraint (possibly operating through debt overhang effects).

<sup>19</sup> Strong caveats apply to the Doing Business indicators as the data reflect responses from a relatively small group of correspondents, and the methodology (or its interpretation by correspondents) may not be entirely stable over time and across countries. For example, anecdotal evidence does not confirm the dramatic regulatory deterioration implied by certain reported data, such as that the time to enforce a typical contract has quintupled (from 200 days to 1,000 days) and that the number of required procedures tripled (from 19 to 55) between 2004 and 2006. The aggregation between the indicators in the various subcategories and the aggregate may also need to be taken with a grain of salt. In the 2007 report, for example, Egypt ranked much higher in all subcategories (except for dealing with licenses) than in the overall ranking.

between the 2006 and 2007 reports so that Egypt, for which the unchanged global ranking reflects an “average” pace of reforms (see below for details), slightly improved its position vis-à-vis most peers. In Transparency International’s Corruption Perception Index, during 1998–2006 Egypt’s rank held stable at place 60–70 (i.e., broadly in the middle) in the global rankings, but near the bottom of its peer group (though always ahead of India and Indonesia). A virtually identical pattern is found in Egypt’s ranking under the Heritage Foundation’s “Freedom Index.”

22. However, such rankings say little by themselves about the economic implications and whether such “costs” have been binding constraints on growth. Indeed, the WEF surveys (Table 2) indicate that businessmen attach different weights to such issues. “Inefficient bureaucracy” ranked persistently very high among the most problematic factors to doing business (even reaching first place in 2006), with corruption (seventh to tenth place through 2006, but moving to fourth place in 2007) and rigidity of labor hiring/firing regulations (eighth to ninth place) clearly being lesser concerns. Recent reforms have started to tackle many of these issues. In particular, a streamlining of customs regulations in 2004–05 moved Egypt’s ranking on the corresponding sub-index of the World Bank Doing Business report up to 70th place globally in 2005, earning Egypt a place among the top global reformers (and the top reformer in its peer group) in the 2006 report.<sup>20</sup> One-stop processes for the setting up and operation of businesses also have started to reduce red tape and the potential for corruption. Recent moves to much greater transparency on economic-financial data and policies—such as participation in an IMF/World Bank

Table 4. Corruption Perceptions Index

|              | 1998       |           | 2002       |           | 2006       |           |
|--------------|------------|-----------|------------|-----------|------------|-----------|
|              | Score 1/   | Rank 2/   | Score      | Rank      | Score      | Rank      |
| Jordan       | 4.7        | 38        | 4.5        | 40        | 5.3        | 40        |
| Malaysia     | 5.3        | 29        | 4.9        | 33        | 5.0        | 44        |
| Tunisia      | 5.0        | 33        | 4.8        | 36        | 4.6        | 51        |
| South Africa | 5.2        | 32        | 4.8        | 36        | 4.6        | 51        |
| Turkey       | 4.0        | 46        | 4.0        | 45        | 3.8        | 60        |
| Brazil       | 3.4        | 54        | 3.2        | 64        | 3.3        | 70        |
| <b>Egypt</b> | <b>2.9</b> | <b>66</b> | <b>3.4</b> | <b>62</b> | <b>3.3</b> | <b>70</b> |
| India        | 3.7        | 50        | 3.7        | 52        | 3.3        | 70        |
| Morocco      | 2.9        | 66        | 2.7        | 71        | 3.2        | 79        |
| Indonesia    | 2.0        | 80        | 1.9        | 96        | 2.4        | 130       |
| Average      | 3.9        | ...       | 3.8        | ...       | 3.9        | ...       |

Source: Transparency International.

1/ Index score ranges from 10 (no corruption perceived) to 0 (perception of pervasive corruption).

2/ Rank reflects global ranking among 85 countries in 1998, 102 in 2002, and 158 in 2005.

Table 5. Economic Freedom Index 1/

|              | 1998       |           | 2002       |            | 2006       |            |
|--------------|------------|-----------|------------|------------|------------|------------|
|              | Score      | Rank 2/   | Score      | Rank       | Score      | Rank       |
| South Africa | 2.9        | 50        | 2.8        | 53         | 2.7        | 50         |
| Jordan       | 2.9        | 59        | 2.7        | 49         | 2.8        | 57         |
| Malaysia     | 2.6        | 37        | 3.2        | 80         | 3.0        | 68         |
| Brazil       | 3.4        | 93        | 3.1        | 76         | 3.1        | 81         |
| Turkey       | 2.7        | 46        | 3.4        | 102        | 3.1        | 85         |
| Morocco      | 3.0        | 69        | 3.1        | 75         | 3.2        | 97         |
| Tunisia      | 2.9        | 53        | 2.9        | 60         | 3.2        | 99         |
| India        | 3.8        | 121       | 3.6        | 122        | 3.5        | 121        |
| <b>Egypt</b> | <b>3.3</b> | <b>84</b> | <b>3.5</b> | <b>109</b> | <b>3.6</b> | <b>128</b> |
| Indonesia    | 3.0        | 68        | 3.5        | 111        | 3.7        | 134        |
| Average      | 3.0        | ...       | 3.2        | ...        | 3.2        | ...        |

Source: Heritage Foundation.

1/ Scores rank from 1 (free) to 5 (repressed).

2/ Ranking is among 157 countries in 2006, 156 in 2002, and 156 in 1998.

<sup>20</sup> Despite being listed among the top ten reformers in the 2006 Doing Business report, Egypt’s global ranking (according to the 2007 report) rather counterintuitively did not improve.

Review of Standards and Codes (ROSC) in the area of statistics, subscription to the Special Data Dissemination Standard (SDDS), the now regular publication of key economic and public finance statistics, and publication of IMF Article IV consultation reports—may be signs of broader changes in governance that could reduce the related cost of doing business. Overall, the persistent prominent place of concerns about inefficient bureaucracy in business surveys, Egypt’s continued low ranking in global governance indicators, and the coincidence of reforms in a few governance areas (customs, taxes) with the sharp acceleration of growth is consistent with the view that regulatory red tape has been a key growth constraint and that, despite important recent reforms, much remains to be done to further relax this constraint.

23. Growth typically involves the production of new and “better” products—products that have higher value added than traditional output, or are better geared to the fastest growing markets, or are “near” other interesting products such that producing one may help develop others (a positive externality). However, the cost of developing such new products may be very high and thus constitute a critical constraint on growth. Such a cost may be related to microeconomic aspects discussed before (say bureaucratic obstacles and red tape that hinder the setting up of new businesses), but another expense may be related to the cost of discovery and adaptation of production technology (from cotton to aircraft in the earlier example). Even assuming that the technology is available from advanced countries, its absorption in domestic production processes requires exploring new combinations of local factors. Such exploration is costly and risky. Riskiness in itself will constitute an obstacle that is bigger the poorer entrepreneurs are, because failure could push them below subsistence income—and more so, the more entrepreneurs are credit constrained. To the extent that such exploration, even when failing to launch a new product, yields positive externalities (e.g., workers trained originally for a semiconductor factory might have acquired skills that would be useful for setting up a computer screen factory) reducing the private cost of exploration could have high social returns.<sup>21</sup> The relatively high return in Egypt on basic education (see below) could reflect that such skills are critical at the current stage of development, perhaps because they are key to capturing the externalities associated with exploring new production lines and adapting new technologies from advanced countries.

24. There is some evidence that Egypt finds it more difficult than some of its peers to move into more sophisticated export production, and that its revealed comparative advantage

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<sup>21</sup> There could then be a case for subsidizing such “self-discovery,” obviously with the caveat that such subsidies must be confined to innovators (who generate positive externalities) and don’t go to imitators (who don’t generate externalities). To avoid such state intervention being captured by special interests, fairly stringent budget and accountability restrictions must be in place—which in turn may require qualities of public administration that are not always available. Getting at least government-induced obstacles out of the way may then be more feasible than trying to design enlightened government intervention. However, Aghion and Howitt (2005) provide some theoretical arguments, and view the “East Asian Miracle” as well as Western Europe’s postwar growth as providing empirical evidence, that a measure of protection could support catch-up growth, and that primary and secondary (but not tertiary) education is critical for catching up.

remains “stuck” with resource-based (textile and clothing, agro processing, and petro-based) rather than skill-intensive or innovation-intensive products.<sup>22</sup> Egypt ranks relatively poorly under the “innovation” pillar in the WEF GCI, both compared to its own overall GCI ranking and relative to peers. Trade data indicate that during 1985 and 2005 the share of “high-tech” exports (products such as telecom equipment, optical instruments, or pharmaceuticals—see Appendix III for details) rose from 0.3 percent to 1.3 percent, much less than for most peers. However, gains in “medium technology” exports (automotive products, synthetics, etc.) were more substantial and comparable to peers’ gains; furthermore, the crude breakdown of trade underlying Table 6 would not capture a move towards more sophisticated products within the category of resource-based products (say from wheat to high-quality gourmet food, or from cotton to high-end textiles). In Egypt’s case, however, oil and gas constitute the bulk of the resource-based exports and such effects are therefore likely to be negligible. While the run-up in oil and gas world prices in recent years imparts a downward bias to the shares of non-resource-based exports, the story does not change much if oil and gas exports were excluded (see Appendix III for details).

Table 6. Exports to World Trade Partners by Technology Content, 1985–2005  
(In percent of total exports)

|                 | 1985 |      |      |      | 1995 |      |      |      | 2005 |      |      |      |
|-----------------|------|------|------|------|------|------|------|------|------|------|------|------|
|                 | RB   | LT   | MT   | HT   | RB   | LT   | MT   | HT   | RB   | LT   | MT   | HT   |
| Egypt 1/        | 86.0 | 8.9  | 4.8  | 0.3  | 54.3 | 26.0 | 18.2 | 1.4  | 62.7 | 7.5  | 22.6 | 1.3  |
| South Africa 2/ | 22.8 | 2.1  | 19.2 | 1.2  | 27.9 | 5.6  | 34.7 | 3.8  | 28.9 | 4.6  | 60.1 | 5.6  |
| India           | 48.2 | 25.5 | 20.8 | 5.3  | 28.0 | 32.8 | 31.2 | 6.4  | 29.3 | 24.3 | 37.3 | 8.1  |
| Brazil          | 55.5 | 9.8  | 25.4 | 8.3  | 44.7 | 10.3 | 33.3 | 9.6  | 47.9 | 5.9  | 34.1 | 11.7 |
| Turkey          | 39.6 | 30.7 | 24.8 | 4.7  | 26.1 | 43.1 | 24.0 | 6.6  | 17.7 | 31.1 | 36.7 | 12.9 |
| Morocco         | 59.0 | 16.6 | 23.8 | 0.6  | 49.2 | 23.5 | 24.7 | 2.6  | 37.2 | 31.0 | 18.2 | 13.5 |
| Indonesia       | 91.3 | 3.6  | 4.2  | 0.7  | 58.8 | 24.7 | 8.8  | 7.7  | 54.1 | 18.3 | 13.8 | 13.6 |
| Jordan          | 50.0 | 12.0 | 28.9 | 7.9  | 44.7 | 8.4  | 33.8 | 11.9 | 27.5 | 34.2 | 23.4 | 14.7 |
| Tunisia 1/      | 56.1 | 21.2 | 19.2 | 3.3  | 23.2 | 49.0 | 19.0 | 8.9  | 25.0 | 43.6 | 15.0 | 16.2 |
| Malaysia        | 69.4 | 4.4  | 8.8  | 17.3 | 26.1 | 9.2  | 11.8 | 51.6 | 24.9 | 7.5  | 12.5 | 53.5 |

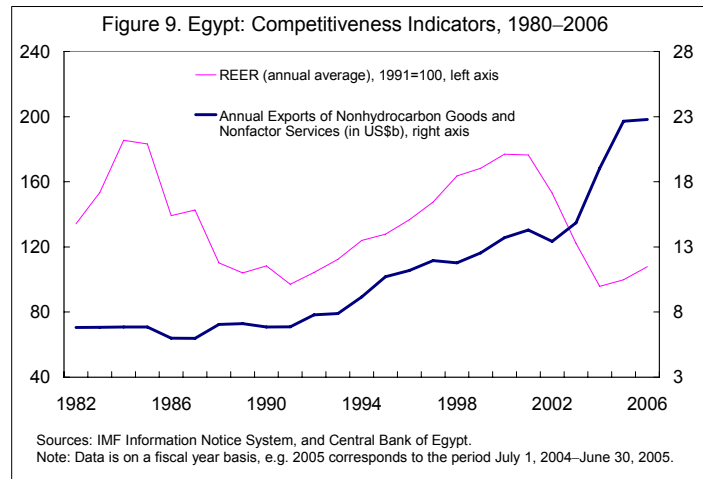
Source: UNCTAD COMTRADE (WITS Database). See Appendix II for details.

Note: RB=resource based, LT=low-tech, MT=medium-tech, HT=high-tech. See Appendix II for details.  
1/ 2005 data is for 2004.  
2/ 1985 data is for 1984.

25. Which constraints explain these difficulties to innovate? Galal and Fawzy (2001) attributed Egypt’s weak export performance in the late 1990s and early 2000s essentially to (i) the macroeconomic factors of an overvalued exchange rate, high tax rates, and high rates of protection (attracting resources into import-competing activities), and (ii) the microeconomic factors of high transaction costs dealing with customs and tax administration, and inefficient export related services (finance and insurance, handling and shipping at port, and transportation and communication). If so, the reforms implemented in 2004–05 are likely to have removed most of these constraints: as detailed above, corporate income tax rates were halved; a major tariff reform in 2004 reduced the weighted average import tariff from

<sup>22</sup> Interview with Minister of Trade and Industry, [Businesstodayegypt.com](http://Businesstodayegypt.com), Article 6759, September 2006.

14 to 9 percent (with a further reduction to 6.9 percent in early 2007), and the massive real depreciation on the order of 50 percent during 2001–02 should have addressed overvaluation concerns. According to the World Bank’s Doing Business Reports (2006 and 2007), Egypt has furthermore considerably reduced the red tape related to exports in recent years (as did most competitors, keeping Egypt’s relative ranking on that score stable). Indeed, non-oil export growth in recent years was impressive, averaging (in U.S. dollar terms) 22 percent during 2002/03–2004/05 before turning slightly negative in 2005/06. This pattern would indicate that high export growth was mostly driven by the impact of the real depreciation of 2001/02, which was tapering off after a few years and was increasingly offset by the modest real appreciation of the pound since 2003. However, consistent with the indications provided earlier that Egypt is slow in moving to more sophisticated products, export growth during 2001/02–2004/05 was driven mostly by low-tech items (aluminum articles, raw materials, cotton, textiles), although pharmaceutical exports also grew strongly.



26. Of course, the performance of aggregate exports and the development of new export products are different and could face different constraints. However, in a rapidly growing world economy with tough competition among countries, it is likely that high non-oil export growth will require new production in order to reach the fast growing segments of world demand or to escape competition from new players in established industries (consistent with the evidence in Hausmann, Hwang, and Rodrik (2005a) that development of “better” exports leads to subsequent higher growth). If the high growth of exports during 2002/03–2004/05 has in that sense “led” the acceleration of non-oil GDP growth during 2003/04–2005/06, it would seem critical for Egypt to accelerate the removal of micro-restrictions on exports; and real appreciation pressures induced by temporary capital inflows may be costly in terms of growth.

27. Discovering “better” products may be constrained not only in the export sector. For example, one factor depressing growth in Egypt appears to be the reluctance of poor farmers, especially in rural upper Egypt, to move away from traditional low-return agriculture to high-return nontraditional cash crops (World Bank, 2004a). The main reason seems to be the higher risk attached to the latter—with little access to finance to smooth consumption (in part reflecting small land-holding ill-suited to serve as collateral), farmers cannot embark on strategies that increase the expected value of income if it also increases the variance of income. This would also point to access to (micro-) finance as a critical constraint in certain



sectors, which—as discussed before—likely reflects inefficiency in financial intermediation and institutional weaknesses rather than lack of domestic or foreign saving.

### C. Lack of Complementary Factors?

28. Entrepreneurs may be deterred from investing by the insufficient supply of complementary factors of production. Data constraints preclude any attempt at a comprehensive assessment, and the following discussion will be limited to very few factors, notably infrastructure and education.<sup>23</sup>

29. In general, “inadequate infrastructure” has been ranked low as a problem in the WEF surveys (Table 2), although it moved up to seventh place in 2007. In the infrastructure component of the WEF’s GCI, Egypt’s ranking is close to its general GCI ranking; within the peer group, Egypt slightly improved its relative strength in infrastructure during 2004/05–2006/07. This may reflect that at least lower Egypt has a dense road network, including the new Cairo-Alexandria highway, major ports in Suez and Alexandria, and a new airport in Cairo. Electricity is cheap and highly subsidized, as is natural gas. Available evidence would thus not signal infrastructure as among the currently most binding constraints.

30. Is human capital undersupplied? At first glance, Egypt fares fairly well in enrollment ratios and an “inadequately educated workforce” ranked relatively low among businessmen’s concerns (eighth to seventh place) throughout the 2004–2006 WEF surveys. If human capital were a key constraint, returns on education should be high. However, consistent with the business surveys at least until recently, overall returns on education appear modest<sup>24</sup> although rising slowly between 1995/96–1999/2000 (World Bank, 2004a; more

Table 7a. Primary School Enrollment  
(Percent Gross)

|              | 1991        | 2000         | 2003         |
|--------------|-------------|--------------|--------------|
| Turkey       | 98.8        | 96.2         | 94.7         |
| Jordan       | 100.6       | 99.9         | 99.9         |
| <b>Egypt</b> | <b>91.9</b> | <b>100.5</b> | <b>100.5</b> |
| South Africa | 108.5       | 106.7        | 105.0        |
| Morocco      | 64.2        | 93.2         | 106.1        |
| India        | 98.1        | 98.8         | 107.4        |
| Tunisia      | 113.9       | 113.7        | 110.6        |
| Indonesia    | 114.2       | 110.9        | 116.2        |
| Malaysia     | 95.4        | 97.1         | ...          |
| Brazil       | 104.0       | 150.7        | ...          |

Source: World Bank, *World Development Indicators* 2006.

<sup>23</sup> The institutions that ensure contract enforcement, physical security, etc., could be similarly seen as complementary production factors, but have been considered above as elements affecting appropriability of returns.

<sup>24</sup> Psacharopoulos and Patrinos (2002) compile country studies on education returns, which indicate that, in Egypt at least through 2000, returns (5.2 percent increase in average earnings per additional school year) were among the lowest in its peer group, with the highest returns in Morocco (15.8 percent), Brazil (14.7 percent), and India (10.7 percent). However, as the studies differ by methodology and time period covered, such comparisons need to be taken with more than one grain of salt and are at best indicative of broad trends.

recent data do not seem to be available). More specifically, returns on the most basic skills—reading and writing—were high, while returns on overall primary-cum-secondary education were low, perhaps in part reflecting low quality, as comparisons with some peers would indicate. Returns on university education were relatively high again, consistent with the fact that on the “higher education” component of the WEF GCI, Egypt has been consistently ranked lower than on the overall GCI, indicating a relative weakness. Given the large number of Egyptians (of all skill levels) working abroad, notably in the booming Gulf countries, it is however difficult to disentangle the impact of domestic demand versus foreign demand on the returns for education, and the limited data on education returns provide little help in identifying growth constraints. Nonetheless, the conclusion in Dobronogov and Iqbal (2004) that there was little evidence that human capital constraints were then holding back Egypt’s growth may have to be qualified today. In the 2007 WEF survey, concern about labor skills jumped to third place, and similarly “availability of skilled labor” moved sharply up the list of obstacles to growth as ranked by businessmen in the 2006 ECES “Business Barometer.”<sup>25</sup>

There is a broad consensus that the skills produced by public education poorly match market needs, and recent growth may have brought Egypt to the point where education constraints become binding. In any case, education achievements are bound to become more critical—there is strong evidence that innovation in any country, even if it involves adapting technology from advanced countries, strongly depends on the stock of human capital, and such innovation will become more important if Egypt moves up the product ladder toward more sophisticated products.

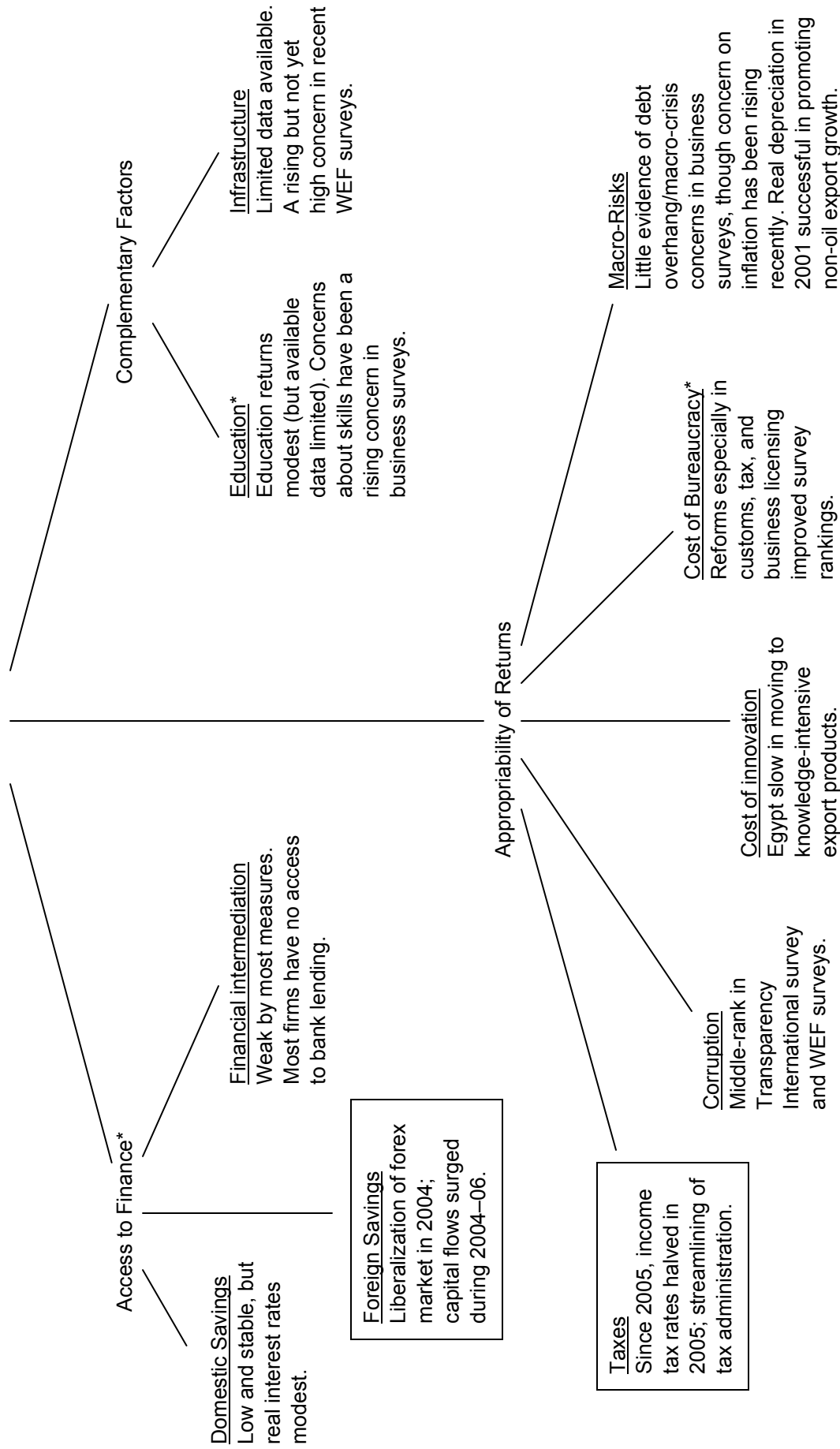
Table 7b. Secondary School Enrollment  
(Percent Gross)

|              | 1991        | 2000        | 2003        |
|--------------|-------------|-------------|-------------|
| Morocco      | 35.2        | 38.7        | 44.3        |
| India        | 44.2        | 47.9        | 52.3        |
| Indonesia    | 45.5        | 54.9        | 61.8        |
| Tunisia      | 44.6        | 75.1        | 77.0        |
| Turkey       | 48.0        | ...         | 85.3        |
| <b>Egypt</b> | <b>70.8</b> | <b>83.4</b> | <b>86.9</b> |
| Jordan       | 63.3        | 87.3        | 88.3        |
| South Africa | 69.3        | 84.9        | 90.5        |
| Malaysia     | 57.1        | 69.3        | ...         |
| Brazil       | 40.5        | 104.2       | ...         |

Source: World Bank, *World Development Indicators* 2006.

<sup>25</sup> The “Business Barometer” of the Egyptian Center for Economic studies (ECES) inter alia asks business respondents twice a year to rank the following perceived constraints: access to finance, access to imports, lack of skilled workforce, and limited demand (ECES, 2002-06).

Figure 10. Egypt—Growth Diagnostic Decision Tree



\* Ranked among top three concerns in 2006/07 WEF business survey.  Substantive change during 2004–06.

### III. CROSSING THE NILE—GROPING FOR STONES AND BEING AWARE OF CROCODILES

31. The foregoing review of the literature and relevant facts on constraints to growth in Egypt suggests a short list of prime suspects that may deserve deeper investigation (Figure 10). Access to financing, notably, does not appear to be the main recent or current obstacle to growth; real interest rates would be much higher and the external current account under greater pressure if indeed businesses were strongly competing for funding of an abundance of profitable investment ideas. At the same time, there is a question of whether the limited available data really tell the full story: business complaints about lack of access to financing may reflect some nonprice rationing of credit, especially through the state banks, and access to finance for small enterprises and farmers may constitute a binding growth constraint for that sector. The latter would reflect the inefficiency of the financial system in allocating savings to domestic investments rather than lack of domestic or foreign savings, but also capacity constraints on borrowers. The ongoing reform of the financial sector (which by late 2006 had shifted more than half of the banking sector to private ownership, along with governance reform at the remaining state banks and more generally a modernization and liberalization of financial institutions) thus tackles a constraint that would probably become binding soon. But ongoing growth and rising investments may also move the economy, in the near future, to a point where low national savings (reflecting high public dissavings) constitute a critical constraint, unless access to foreign savings (notably higher FDI dedicated to greenfield investments rather than one-off privatizations) could be durably expanded.

32. There is considerable evidence, including surveys and comparative rankings, as well as Egypt's difficulty in moving toward new higher value-added products, pointing to appropriability of returns as a critical constraint. Private returns are reduced through the high cost imposed by complex regulations and inefficient government services, but perhaps also through the high cost of experimenting and exploring new production ideas. Recent bold reforms have focused on this area, particularly in the tax system and trade regulations, and the concomitant pick-up in growth is consistent with the view that these reforms have been addressing critical constraints. By contrast, a dearth of complementary factors does not appear among the prime suspects of having held up growth—though, again, there is little doubt that over the longer run, and as sophistication in the economy increases, Egypt will need to bolster its human capital if it wants to continue growing.

33. The authorities have started to tackle the high fiscal deficit with a view to halving it to around 4 percent of GDP by 2010, and thus bringing public debt onto a declining trajectory. As indicated above, implementing this plan would help forestall potential debt overhang effects, contribute to greater efficiency of financial intermediation, and help raise national savings—all potential, if not actual, constraints on growth.

34. Overall, the Egyptian reforms launched in 2004 appear remarkably apt at focusing on the most critical constraints and thus maximizing the growth effect out of a limited set of

reforms. Since removing the most critical constraint is likely to give both the fastest and the biggest “bang for the buck,” the strategy might also have been the politically most feasible approach, maximizing the return on political capital which, for any government, is always limited. Further reforms aimed at easing the cost of regulations will likely continue to have high payoffs. Increasingly, however, reforms with different political economy characteristics, such as revamping education or reigning in the fiscal deficit, will become the critical challenge. Since these steps take more time (for design, political consensus building, implementation, and pay-off) the authorities are well advised to use the tailwinds generated by the recent reforms to start tackling these more distant constraints. This would reduce the risk that the recent growth episode will become another tale of a growth spurt that fizzled out because some deeper constraints were not addressed.

35. As the various reforms unleash entrepreneurial spirit and investment in Egypt, more attention may also have to be paid to potential pitfalls highlighted by the “Theory of Second Best.” For example, with energy highly subsidized, and energy prices in Egypt among the lowest in the world, lifting financing constraints or raising private returns on investment may trigger higher investment in energy-intensive activities that may not optimize social returns. As highlighted at the beginning, there may be no escaping the fact that, while a few simple bold measures can work wonders for a while, sustaining growth will require reforms along many dimensions and paying attention to the complex interaction among them.

## Appendix I. Key Structural Reforms, July 2004–February 2007

### Exchange rate system

- Set up interbank market allowing banks to freely trade foreign exchange (late 2004).
- Abolished surrender requirement on export proceeds (December 2004).

### Trade regime

- Cut average weighted tariff rate from 14.6 percent to 9.1 percent, reduced number of tariff bands, and eliminated import fees and surcharges (September 2004).
- Reduced average tariff rate further to 6.9 percent (February 2007).

### Public sector

- Raised prices of subsidized fuel (September 2004, July 2006) and electricity (December 2004).
- Income Tax Law modified (mid-2005), simplifying the rate structure, broadening of tax base, cutting personal and corporate income tax rates, and setting a higher minimum threshold.
- Broadened and streamlined stamp tax (August 2006).
- Ongoing public expenditure management reforms focus on upgrading budget classification; establishing a Treasury Single Account; and rationalizing financial relations between general government institutions (launched in 2004).
- Launched reform of tax administration; large taxpayer unit established (2005); and income tax and indirect tax departments merged (2006).

### Financial sector

- Strong progress on comprehensive financial sector restructuring plan (launched September 2004) comprising bank mergers, sale of stakes in joint venture banks, resolution of NPLs, privatization of a state bank, and reform of nonbank financial sector.
- Banks to meet minimum LE 500 million in paid up capital (June 2005).
- Sale of most joint-venture banks to private sector (2004-06) and sale of the Bank of Alexandria to a foreign bank (December 2006), together putting well over half of all banking assets in private ownership.
- Over half of private sector NPLs restructured by mid-2006; public sector NPLs being cleared with capital infusion by government (ongoing since 2005, financed mostly from privatization receipts).

### Privatization

- Between mid-2004 and mid-2006, privatization of public sector companies, of public stock in joint ventures, and of public land generated proceeds of about LE 16 billion; allocation of 3G mobile network to UAE-Egyptian consortium for US\$2.9 billion (late 2006).

### Transparency

- Subscription to SDDS (January 2005).
- Publication of 2005 and 2006 Article IV Staff Reports.
- Publication of monetary policy statement and of communiqués following monetary policy meetings (since 2005).

## Appendix II. Growth Constraints and Second-Best Theory

To illustrate the issue of second best, assume that growth is “produced” with the help of factors  $x_i$ , i.e. growth =  $F(x_1, \dots, x_n)$  with  $F$  having the standard properties of production functions, notably positive but diminishing marginal product ( $\partial F/\partial x_i > 0$  and  $\partial^2 F/\partial x_i^2 < 0$ ) in the relevant range. Factors  $x_i$  may include labor, energy, capital, the quality of institutions, macroeconomic stability, quality of financial systems, and other factors. Supply of each factor  $x_i$  is limited by  $\bar{x}_i > 0$ . Assume policymakers want to maximize growth:

$$\max F(x_1, \dots, x_n)!, \quad 0 \leq x_i \leq \bar{x}_i \quad (1a)$$

Forming the Lagrangian  $L = F(x_1, \dots, x_n) - \sum_i \lambda_i (x_i - \bar{x}_i)$ , a solution to (1a) is a point  $x = (x_1, \dots, x_n)$  solving the Kuhn-Tucker conditions:

$$\begin{aligned} x_i \partial F / \partial x_i - \lambda_i x_i &= 0, & \partial F / \partial x_i - \lambda_i &\leq 0 \\ -\lambda_i (x_i - \bar{x}_i) &= 0, & x_i - \bar{x}_i &\leq 0 \end{aligned} \quad (1b)$$

Obviously  $x = \bar{x}$  is the only solution ( $x_i < \bar{x}_i$  for any  $i$  would imply  $\lambda_i = 0$  and then  $\partial F/\partial x_i \leq 0$ , contradicting  $\partial F/\partial x_i > 0$  in the relevant region), i.e., all factors are fully used. The limited supply of each factor thus constitutes a growth constraint. If the availability  $\bar{x}_i$  of the  $i$ -th factor (say, quality of institutions) could be increased, growth would increase. There is no “second-best” problem: lifting any one constraint does not worsen any other constraint, and has an unambiguously positive impact. Of course, raising the quality of institutions may require scarce administrative and political capital and policymakers will have an interest in identifying which constraint  $\bar{x}_i$  has the greatest impact relative to cost, i.e., for which the payoff  $\partial F / \partial x_i(\bar{x})$  (the Lagrangian multiplier) is highest relative to the administrative and political costs of reform.

For second-best problems to arise, constraints need to take a different form, typically distortion of relative prices. To illustrate, assume in the above example that the political process imposes as an additional constraint fixed remunerations (“fair prices”)  $w_i > 0$  (here shares in growth) for each factor  $i$ , with total growth to be distributed across factors. Now the optimization problem becomes:

$$\max F(x_1, \dots, x_n)!, \quad 0 \leq x_i \leq \bar{x}_i, \quad \sum_i w_i x_i = F(x_1, \dots, x_n) \quad (2a)$$

Assume for simplicity that  $F(\dots)$  exhibits constant returns to scale, thus

$$F(x_1 \dots x_n) = \sum_i x_i \partial F / \partial x_i$$

Assuming the political process has wisely set the remuneration rate  $w_i$  equal to marginal productivity at the original solution of (1a), i.e.  $w_i = \partial F / \partial x_i(\bar{x})$ , as would occur under laissez faire and competitive markets, then  $\bar{x}$  remains feasible and therefore the solution to (2a) is again  $x = \bar{x}$ . This is true even if the political process did not get it quite right, as long as the various distortions offset each other in the sense that  $\sum_i w_i \bar{x}_i = F(\bar{x})$ . In that case, for some factors remuneration is below the market rate, for others above; say energy (factor 2), is “underpriced” ( $w_2 < \partial F / \partial x_2(\bar{x})$ ) and labor (factor 1) is “overpriced” ( $w_1 > \partial F / \partial x_1(\bar{x})$ ). Then  $\bar{x}$  is still a feasible point for (2a), and hence again a solution. However, second-best problems now emerge. Assume, for example, that in such a situation a political reform liberalizes the labor market so that competition now ensures  $w'_1 = \partial F / \partial x_1(x')$  for the new solution  $x'$ .

Now  $\bar{x}$  is not feasible anymore, since at  $\bar{x}$  the market wage for labor would be  $\bar{w}'_1 = \partial F / \partial x_1(\bar{x}) < w_1$ , thus  $\bar{w}'_1 \bar{x}_1 + w_2 \bar{x}_2 + \dots + w_n \bar{x}_n < \sum_i w_i \bar{x}_i = F(\bar{x})$ . Hence  $\bar{x} \neq x'$  and the removal of the labor market distortion will now reduce output, because the impact of remaining distortions worsens! Note, however, that whatever the new solution  $x'$ , expanding any of the “resource constraints”  $x_i \leq \bar{x}_i$  unambiguously expands the set of feasible points, and hence will never worsen the outcome (though it may make no difference if relative price distortions are binding).

In conclusion, the simple examples indicate that growth constraints can be thought of as various types. Reformers addressing “resource constraints” (the  $\bar{x}_i$  above) need not fear second-best effects. In the examples above, improving macro-stability, the quality of institutions, or the available supply of labor, address constraints that would appear to be in the nature of such “resource constraints” and therefore such reforms should not weaken growth (though they need not necessarily improve it). Addressing relative price distortions is different: allowing market forces in one market but not others may make growth outcomes worse.



### **Appendix III. The Technological Classification of Products**

The export data (in current U.S. dollars) underlying Table 6 are based on the SITC2 classification and are grouped as follows:

Resource-based (RB) exports include primary exports (raw materials without any value-added processing operations) such as crude petroleum and natural gas, agricultural products (vegetables and fruits), farm products (live cattle, fresh meat, dairy, and eggs), and minerals. They also include processed agricultural and farm products (frozen and prepared vegetables and fruits, meat and dairy products, confectionary), wood manufactures, refined petroleum and rubber products, ore and metal concentrates, cement, cut gems, glass, mineral manufactures, and iron and steel scrap.

Low-tech (LT) exports include textiles, apparel and footwear, furniture, jewelry, toys, plastic products, iron and steel products, paper products, tools and wires, office supplies, and musical instruments.

Medium-tech (MT) exports comprise the bulk of skill- and scale-intensive technologies in the production of capital goods and intermediate products. They include motor vehicles, trucks and automotive components (such as engines and motors), process industry products (synthetic fibers, chemicals and paints, cosmetics, fertilizers, and plastics), high-end iron and steel products, engineering equipment, industrial machinery, manufacturing machinery, ships and boats, and radio and sound equipment.

High-tech (HT) exports include industrial products that are innovation-driven and where research and development activities are key inputs in the process. These include office and telecommunications equipment, optical instruments, precision instruments, pharmaceuticals, power-generation machinery, electric machinery, and aircraft.

The recent run-up in world prices for hydrocarbon exports imparts a downward bias to Egypt's share of higher-technology-content exports in recent years, given the relative importance of Egypt's hydrocarbon exports compared to peers. To quantify the bias, in the table below the export shares in Table 6 are recalculated by excluding oil and gas exports from the total (and resource-based exports) for all countries. It indicates an even stronger success of Egypt's economy in moving toward medium-tech exports, but still little progress in moving into high-tech items.

**Non-Hydrocarbon Exports to World Trade Partners by Technology Content, 1985-2005**  
(SITC 2; in percent of total non-hydrocarbon exports)

|                 | 1985 |      |      |      | 1995 |      |      |      | 2005 |      |      |      |
|-----------------|------|------|------|------|------|------|------|------|------|------|------|------|
|                 | RB   | LT   | MT   | HT   | RB   | LT   | MT   | HT   | RB   | LT   | MT   | HT   |
| Egypt 1/        | 56.1 | 28.0 | 14.9 | 1.0  | 28.8 | 40.7 | 28.3 | 2.2  | 36.1 | 22.8 | 38.9 | 2.2  |
| South Africa 2/ | 22.7 | 56.9 | 19.2 | 1.2  | 25.5 | 34.0 | 36.6 | 3.9  | 26.4 | 4.8  | 62.9 | 5.8  |
| India           | 44.9 | 27.3 | 22.2 | 5.6  | 26.8 | 34.9 | 31.7 | 6.6  | 20.1 | 28.6 | 42.1 | 9.2  |
| Brazil          | 52.4 | 11.6 | 27.1 | 8.8  | 44.2 | 11.7 | 34.4 | 9.7  | 44.5 | 6.3  | 36.7 | 12.5 |
| Turkey          | 36.6 | 32.2 | 26.2 | 5.0  | 25.1 | 43.7 | 24.4 | 6.7  | 14.7 | 33.6 | 38.3 | 13.3 |
| Morocco         | 57.5 | 17.2 | 24.7 | 0.6  | 48.1 | 24.0 | 25.2 | 2.7  | 33.7 | 32.7 | 19.4 | 14.2 |
| Indonesia       | 72.5 | 12.0 | 13.4 | 2.2  | 46.5 | 32.1 | 11.5 | 10.0 | 40.7 | 23.7 | 18.1 | 17.5 |
| Jordan          | 50.0 | 12.0 | 30.1 | 7.9  | 44.7 | 9.6  | 33.8 | 11.9 | 27.3 | 34.5 | 23.5 | 14.7 |
| Tunisia         | 24.0 | 37.1 | 33.2 | 5.6  | 16.0 | 53.6 | 20.7 | 9.7  | 16.9 | 44.7 | 19.0 | 19.4 |
| Malaysia        | 55.3 | 6.6  | 12.9 | 25.2 | 20.5 | 11.2 | 12.8 | 55.5 | 13.4 | 10.3 | 14.7 | 61.7 |

Source: UNCTAD COMTRADE (WITS Database).

Note: RB=resource based, LT=low-tech, MT=medium-tech, HT=high-tech;  
Hydrocarbon exports are petroleum, petroleum products and natural and manufactured gas.  
1/ 2005 data is for 2004.  
2/ 1985 data is for 1984.

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