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# Republic of Tunisia Development Policy Review

## Towards Innovation-driven Growth

January 2010

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## CURRENCY EQUIVALENTS

Local Currency Unit = Tunisian Dinar (TND)  
Exchange rate: 1.00 Tunisian Dinar = 0.6852 U.S. Dollar

## FISCAL YEAR

January 1 – December 31

## ABBREVIATIONS AND ACRONYMS

AA	Association Agreement
ALMP	Active Labor Market Policies
ANETI	Agence Nationale pour l'Emploi et le Travail Indépendant
ANME	National Agency for Energy Efficiency
API	Agency for Industrial Promotion
APIA	Agency for Agricultural Investment Promotion
CBT	Central Bank of Tunisia
CEF	Contrat Emploi-Formation
CEPEX	Centre de Promotion des Exportations Tunisiennes
CNPP	Compagnie nationale de production de pétrole / National Oil Company
CNSS	Caisse Nationale de Sécurité Sociale (Social Security Fund)
COMESA	Common Market for East and South Africa
CPS	Country Partnership Strategy
GDP	Gross Domestic Product
DPR	Development Policy Review
EU	European Union
ESCO	Energy Service Companies
ETAP	Entreprise Tunisienne d'Activités Pétrolières
FAMEX	Fonds d'Accès aux Marchés d'Exportation
FTA	Free Trade Agreement
FNME	National Fund for Energy Efficiency
FDI	Foreign Development Investments
ICT	Information & Communication Technologies
IEQ	Institut d'Etudes Quantitatives
IMF	International Monetary Fund
INS	Institut National des Statistiques / National Statistics Bureau
LMD	License (Bachelor's degree)-Masters -Doctorate
MDIC	Ministry of Development and International Cooperation
MENA	Moyen-Orient et Afrique du Nord / The Middle East and North Africa
NTB	Non-Tariff Barriers
OECD	Organization for Economic Co-operation and Development
SME	Small and Medium Enterprises
IMP	Industrial Modernization Program
PISA	Program For International Student Assessment
R & D	Research & Development
SSA	Sub Saharan Africa
SIVP	<i>Stage d'initiation à la vie professionnelle / Internship for Professional Insertion</i>
SICAR	<i>Société d'Investissement a Capital Risque</i>
STEG	<i>Société Tunisienne d'électricité et de Gaz/ National Electricity and Gas Company</i>

TFP	Total Factor Productivity
TIMSS	Trends in International Mathematics and Science Study
TND	Tunisian Dinar
TMM	<i>Taux Marché Monétaire</i> / Interbank Interest Rate
UMA	Union of Arab League
USA	United States of America
VAT	Value Added Tax
WTTC	World Trade and Tourism Council
WAEMU	West Africa Economic and Monetary Union

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## PREFACE

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i. Tunisia must move from a low value-added and low cost economy to a higher value-added, knowledge intensive economy in order to significantly reduce unemployment, its overriding challenge. This Development Policy Review (DPR) provides a discussion of the key issues and challenges that are involved in achieving this goal. Towards this end, it discusses trade integration, innovation policies and enabling environment reforms (macro stability, economic regulation and governance, financial sector and labor market reforms and capital account opening) that could facilitate the structural transformation of the economy. These focal areas of the report reflect consultations at the concept stage with the Government, the Ministry of Development and International Cooperation in particular as well as with the private sector and business associations.

ii. The schedule of this DPR is aligned with that of the revision of the 11th development plan that is to be completed in early 2010. The Tunisian authorities intend to use the DPR as an analytical input to the revision of the Plan. The report is also intended to contribute to World Bank dialogue with Tunisia on overall policy and institutional priorities for growth and job creation. It covers many key areas of the Bank-supported program in Tunisia and will be a key analytical input into the country partnership strategy (CPS) under preparation.

iii. The underlying analytical framework is an extended endogenous growth model in which innovation and the use of new technologies is highlighted in the growth process. Higher growth depends on total factor productivity growth, capital accumulation, human capital use and other factors' utilization. At the sector level, this means increasing the proportion of higher-skilled labor in the production process, through appropriate choices of product and technology. In natural resource-intensive sectors, supporting innovation and more efficient use of water, land and energy can help raise productivity and efficiency while remaining sensitive to the environment and climate change.

iv. The DPR is organized as follows: Chapter 1 reviews growth and employment outcomes and challenges; Chapter 2 discusses the rationale for increasing the pace of structural transformation of the economy in order to boost growth and reduce unemployment; Chapter 3 examines the strengths and weaknesses of Tunisia's innovation system and strategies and proposes reform options in light of the international experience; Chapter 4 discusses key aspects of Tunisia's global integration that could further contribute to innovation and productivity growth; Chapters 5 discusses the key improvement in the enabling environment needed to support innovation and productivity growth (economic regulation, education sector reforms, financial sector reforms and labor market); finally, chapter 6 discusses structural transformation issues in natural resource-intensive sectors and examine the specific sectoral reforms needed to address the trade-offs between several objectives, including growth and natural resources preservation.

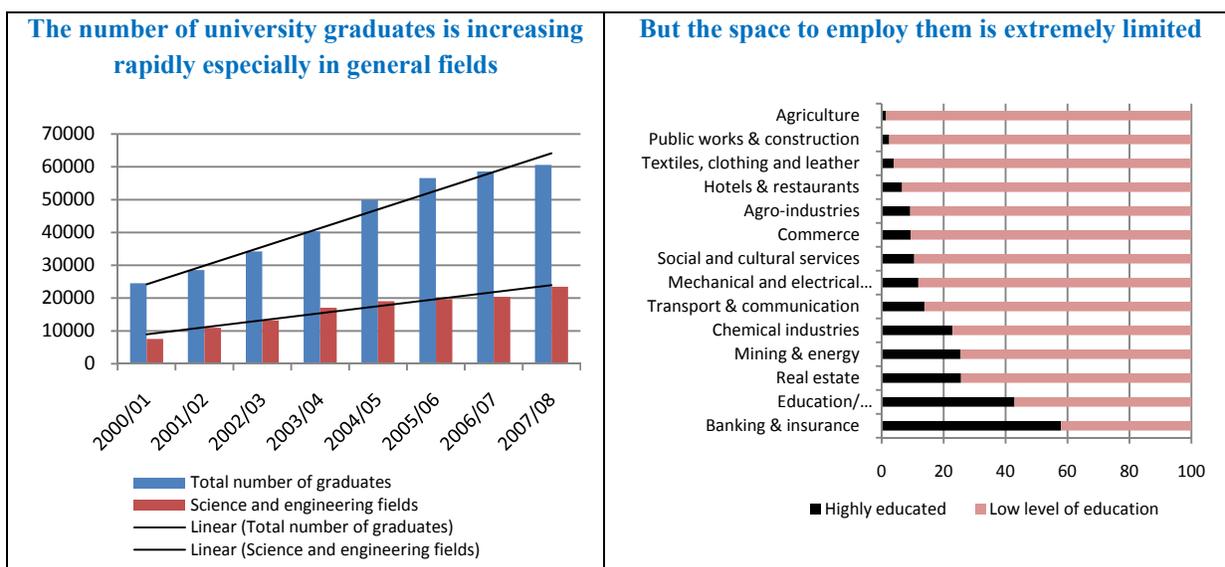
## EXECUTIVE SUMMARY

1. **Tunisia has reached a critical stage in its development process.** Since the mid-1980s, policy makers have managed to i) gradually open the economy and deepen integration with Europe; ii) maintain macro stability in the face of recurrent exogenous shocks; iii) improve the business climate and iv) diversify the education system. The country has sustained a 5 percent growth rate per annum over the last 20 years, provided near universal access to basic socio-economic services (water, electricity, sanitation, etc.) and reduced poverty incidence to the lowest in the region.

2. **These enviable achievements notwithstanding, Tunisia needs to do better in order to reduce unemployment which remains persistently high.** The unemployment of individuals with higher education degree is 20 percent and that for individuals aged 20-29 years about 27 percent, both above the national average (14 percent). More than 860,000 new jobs will need to be created in the next 10 years to avoid further deterioration of the employment situation. Reducing unemployment remains Tunisia's top priority for economic policy in the foreseeable future. This report argues that solving the employment problem depends on Tunisia's success in moving to a different growth model, driven by innovation and productivity, in the years to come.

### STORYLINE AND ANALYTIC FRAMEWORK OF THE DPR

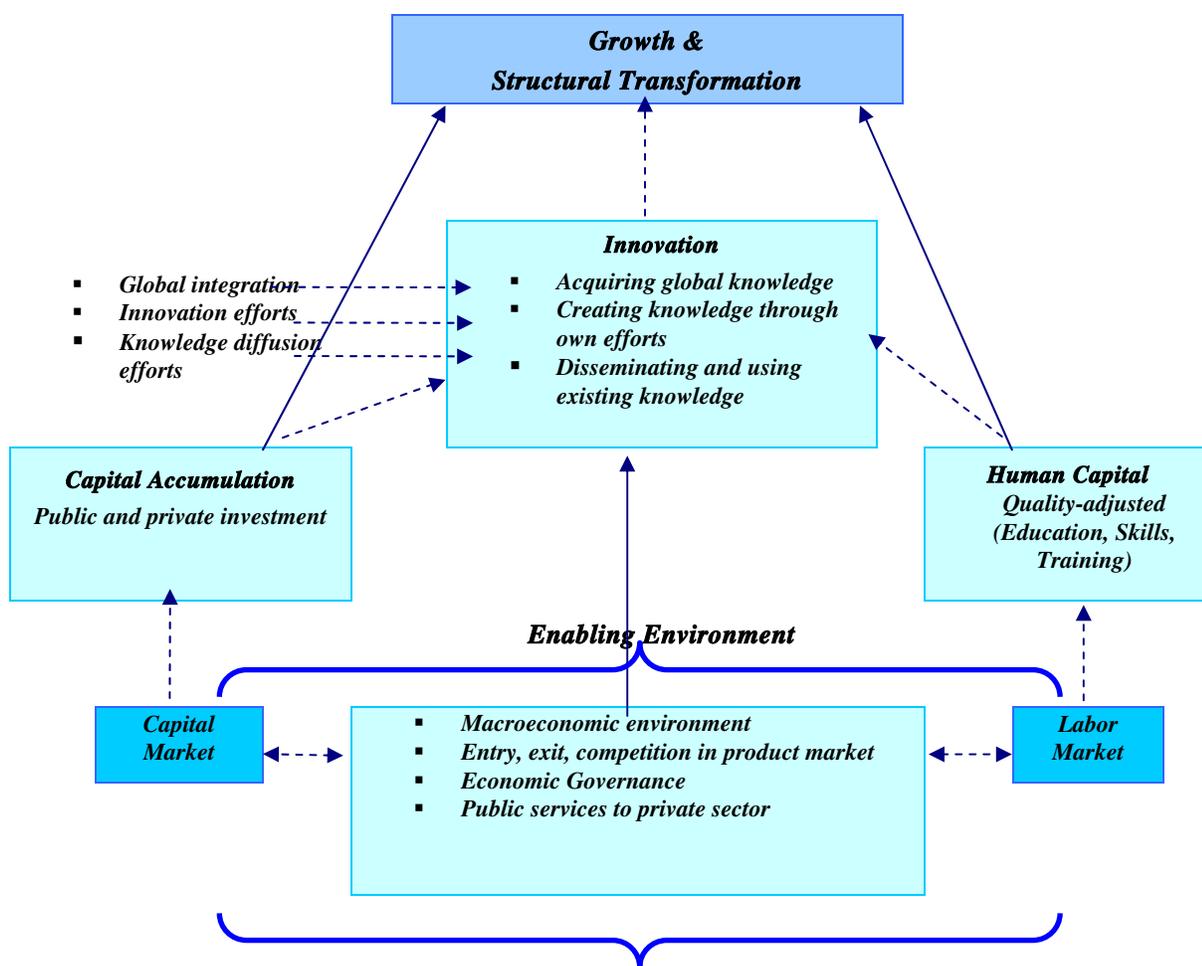
3. **Trends in the economy and the education system have created a structural employment dilemma for Tunisia.** While the education system generates a large number of higher-education graduates, the economy is dominated by sectors that employ predominantly low-skilled workers (textiles and clothing, agro-industry, electrical and electronic components assembly, agriculture, and tourism). In 2007, the education system produced 60,000 university graduates and close to 60 percent of the new entrants in the labor market that year had a university degree. In the same year, only a small fraction of the 70,000 new jobs created originated in skill-intensive sectors. Only about 15 percent of the currently employed have a post-baccalaureate diploma. The "space" for employing individuals with university diplomas is particularly limited in manufacturing sectors as shown the figure below.



4. **To reduce unemployment in Tunisia, now the quality of growth is as important as its pace.** Intense utilization of low-skilled labor and low value addition rates are the main characteristics of current production functions, especially in exporting sectors, dominated by manufacturing and tourism. While the ratio of export *value* to GDP is 47 percent, in terms of *value addition*, exporting manufacturing sectors generate less than 15 percent of GDP. When value-addition is low, it takes very high growth in the volumes of production and export to impact GDP growth significantly. Yet, insofar as international competition allows it, such growth induces greater demand for low-skilled labor, hardly touching directly job seekers with university degree and individuals looking for more sophisticated jobs. In other words, under current production modes, the elasticity of overall employment to growth is bound to be low and a high growth rate does not necessarily reduce unemployment significantly. Tunisia thus needs to move up the value chain and the technological ladder in traditional industries and promote new investments in skilled-intensive sectors to increase value addition, boost productivity and reduce unemployment.

5. **Achieving this transformation calls for an ambitious reform agenda.** The figure below summarizes the underlying analytical framework for the reforms.

### Analytical Framework for Productivity-Based Growth



Source: Bank Staff – Adapted from Rodriguez et al (eds.) 2008

6. **In this framework, innovation plays a central role alongside traditional factors, capital accumulation and human capital, which reinforce it.** The innovation-driven growth model requires a stronger innovation system at home (chapter 3) and deeper global integration to adopt and adapt new technologies created abroad (chapter 4). These reforms will, however, be effective only in a more favorable enabling environment (chapter 5). In the special case of natural resource-intensive sectors, greater investment in R&D and more efficient use of water, land and energy could help increase productivity and meet natural resource degradation/climate change challenges (chapter 6).

### STRENGTHENING THE INNOVATION SYSTEM

7. **Strengthening the innovation system is necessary if Tunisian firms are to move up the value chain and the technological ladder.** More than 95 percent of Tunisian firms are small and medium enterprises that have limited capacity to innovate on their own. These firms need a strong supporting innovation system. Critical reforms to strengthen Tunisia's innovation system include (i) adopting a balanced innovation strategy, (ii) enhancing the efficiency and effectiveness of research and development (R&D) spending, (iii) adapting the supply of adequate skills and competencies and (iv) strengthening the financing of innovation.

➤ **Adopt a balanced strategy of innovation**

8. **Innovation is not only about *creating* new technologies. *Adoption and adaptation of foreign technologies are crucial avenues for innovation too.*** Tunisia's productive sectors, as in many emerging countries, are a combination of a handful of firms operating at or near the global technology frontier and a vast majority of small family-owned firms with very limited innovation capacity. Technology adoption and adaptation is the pertinent concept for most firms operating in most sectors of the economy. *Tunisia's innovation strategy should thus emphasize not only technology creation but also technology adoption and adaptation. This strategic consideration is important because different definitions lead to different policies.* The broad concept of innovation could guide the movement up the value chain in most sectors. It does not prevent giving additional specific support to industries deemed strategic for the country.

➤ **Improve the effectiveness of R&D**

9. **The return to public R&D spending in terms of concrete innovation at the firm level is low in Tunisia because of a number of factors that hinder efficiency and effectiveness.** R&D is a public good. Its social return is greater than can be captured by individual private investors and its value to society is not reflected in market prices. Romer (1990), Grossman and Helpman (1991), Aghion and Howitt (1992) have shown the crucial role of R&D in productivity growth. R&D's positive spillovers and potential effect on productivity point to the importance of government support.

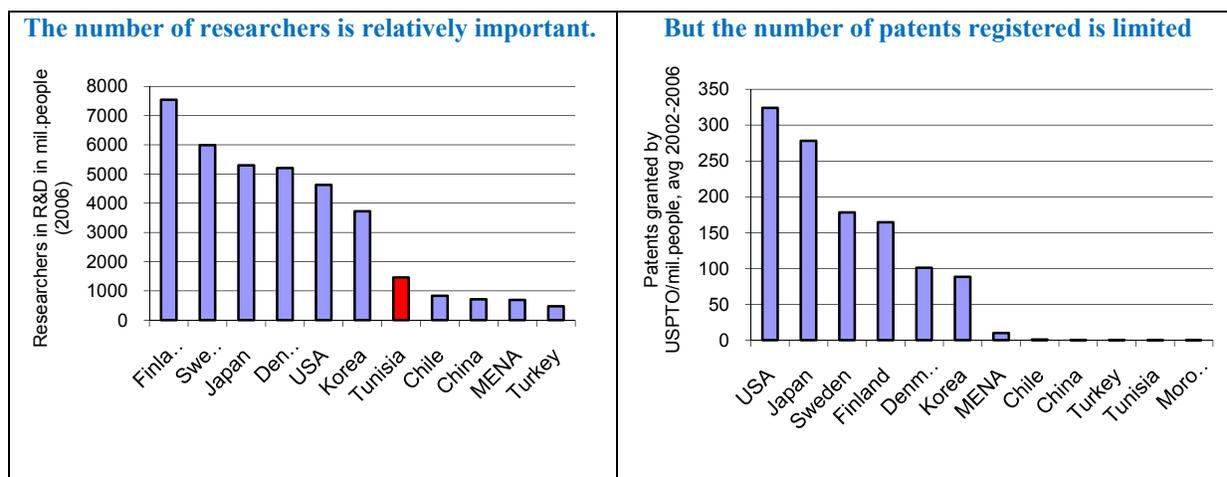
10. Tunisia spent an estimated 1.25 percent of its GDP on R&D in 2009. The number of researcher (measured in gross terms) per million people is above the regional average. Further, the country has a complex innovation infrastructure and a large number of public programs aimed at providing incentives for R&D and innovation.<sup>1</sup> Yet the result in terms of patent registration and concrete

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<sup>1</sup> Tunisia has a large number of research centers (more than 130 laboratories and more than 600 smaller units of research), 8 technical centers that provide technical assistance to firms in 8 sectors, a growing portfolio of techno parks, an institute for norms and intellectual property right protection, a national agency for the promotion of research and innovation, a large program of upgrading (*mise a niveau*) that helps firms upgrade their equipment and

utilization of the results of research by firms are limited even if some improvements are noticed in the most recent years. In 2008, the number of international patent application was 26 in total, of which 10 in the US (against 2 in 2006), 4 in France, and 4 at the European Patent Office. This result, below the regional average, reflects some key weaknesses in the R&D system.

- **The objectives of some of a large number of R&D programs overlap to the effect that some funds are under-utilized**, example the research investment fund. This creates waste and inefficiencies. *A comprehensive inventory of existing innovation-related funds is warranted to rationalize the system. Largely under-utilized funds could be merged with others or closed. Regular evaluations should take place and new funds could incorporate a monitoring and evaluation system. These reforms could make the R&D incentive system more efficient.*
- **R&D spending is scattered around a large number of themes and public institutions** (ESTIME 2007). The criteria for distributing R&D spending are unclear and no clear alignment with national priorities or any performance criteria is evident. *A revision of R&D spending criteria is called for, with more emphasis put on adequately funding priority/ strategic sectors in industries and natural resource sectors such as water, energy and the environment. Selectivity is crucial to create critical mass and a strong international reputation in selected areas;*
- **Finally, direct collaboration between researchers in public laboratories/universities and the private firms is limited and cumbersome.** Three factors play a key role in this poor outcome: (i) limited demand from the private sector due to its predominant specialization in low value-added sectors and sub-contracting; (ii) a mismatch between the nature of public research and the needs of firms and (iii) complex bureaucratic procedures. *While the limited demand from the private sector is a structural element that will change significantly only as firms innovate more, the other two shortcomings can be overcome in the short term. A better match between public research and private sector needs can be sought by improving the functioning modalities of institutions that interface between research and production: example the Conseil Supérieur de la Recherche and business associations. Bureaucratic procedures can also be further simplified by reducing superfluous steps in the approval process.*



Source: Ministry of Higher Education and Research and World Bank

improve their organization, a program of industrial modernization, and numerous public programs to subsidize investment in innovative activities (see below).

➤ **Reduce skills mismatch and enhance the flexibility of skills production and mobility**

11. **Strengthening the innovation system requires enhancing the relevance and quality of skills supplied by the education system at large.** To that effect, three challenges must be addressed. First, efforts aimed at improving quality and adjusting the content of education to the needs of firms must continue. Second, the education system must become more flexible and autonomous. Finally, a greater mobility of workers across the different sectors via more flexible labor regulation will be needed.

12. **Tunisia's education system produces graduates in massive numbers but a key issue to address is quality.** Education absorbs 20 percent of Tunisia's budget's (7 percent of GDP) and the system produces in massive numbers university graduates in general fields as well as in sciences and technologies. The government's ambition is to accelerate the rate of production of scientific and engineers in the years to come.<sup>2</sup> However, a key issue to address is quality. According to the IEQ 2008 firm survey, more than 60 percent of Tunisian firms struggle to find the right mid-level financial specialists, communication specialists, IT with specialized skills or high level technicians to accompany their development. This is consistent with Tunisia's poor ranking in international student assessments such as the PISA and TIMSS.<sup>3</sup> As the share of higher value-added, knowledge-intensive sectors increases, these skills mismatches will become an even more severe constraint to growth. *A greater professionalization of education is called for instance through greater use of practical experiments. To improve quality at the higher education level, it will also be important to improve quality upstream and enhance selectivity at entry to university.*

13. **Universities and engineering schools need more autonomy to produce the new skills that the economy will need.** Management procedures are today overly centralized, denying university managers the flexibility they need to take quick managerial decisions. The government has launched a reform to enhance the autonomy of universities and adopt the LMD system (Licence-Master-Doctorat as in the US). A new law stipulates that universities will be able to compete for private contributions, be it through contract research or fees. It is also sought to combine learning in universities and vocational training centers and in enterprises as well as increasing the time allocated to IT, entrepreneurship and English. *These reforms are sensible but effective implementation will be crucial.*

14. **A greater flexibility of the labor market is needed to enhance the mobility of talents across sectors and firms and reduce job informality.** The labor regulation stipulates that employers have total flexibility of hiring and firing up to 4 years, after which the complex and lengthy firing procedures kick in. In principle, this is a hindrance to labor mobility and productivity growth since talents can remain bottled up in stagnant sectors at the detriment of dynamic ones. However, in practice, labor market surveys suggest that the rigidity in firing laws is bypassed and has induced firms to offer precarious and short-term employment, sometimes informal jobs. *Thus a main benefit of relaxing the rigidity of firing laws would thus be to facilitate formal job creation (i.e., change the composition of the labor mix between formal and informal) and firms' restructuring. The government could consider linking this reform with the introduction of some sort of unemployment insurance to provide a minimum of safety net to those who lose their job.* Greater mobility is also sought through

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<sup>2</sup> A key issue will however be acquiring sufficient number of teachers in a timely fashion to train students. Given the time lag for training an engineer or technician in these sophisticated fields, recourse to foreign trainers may be necessary.

<sup>3</sup> PISA stands for Program for International Student Assessment; TIMSS stands for Trends in International Mathematics and Science Study.

more effective intermediation. *The Government has initiated a reform of ANETI, the public agency for placement, in order to increase its capacity to collect, treat and diffuse information on job opportunity and enhance the quality of services provided to job seekers and firms. The Government also plans to introduce new regulation that will formalize and regulate private intermediation.*

➤ **Strengthen innovation financing mechanisms**

15. **The role of the financial sector in accompanying innovation efforts is crucial.** Seed capital and capital-risk institutions play in particular a key role by providing investors and firm managers with capital to finance the development of products and processes. By assuring a better liquidity of capital-risk transactions, the stock market can play also an important role.

16. **In Tunisia, the contribution of capital-risk companies to financing innovation is limited.** The existing mechanisms, especially the SICARs (Societe d'Investissement a Capital Risque), predominantly finance firm creation and operate like classic banks by negotiating credit-like financing conditions (example, most transactions take the form of a “portage” in which the SICARs gets back its funds at a specified time with a fixed interest rate). Risk-taking is minimal in the SICAR system. The SICARs account for only 1.2 percent of total financing distributed by the financial sector. A small number of firms benefit however from international funds or lines of credit dedicated to supporting innovation (e.g., European Investment Bank line).

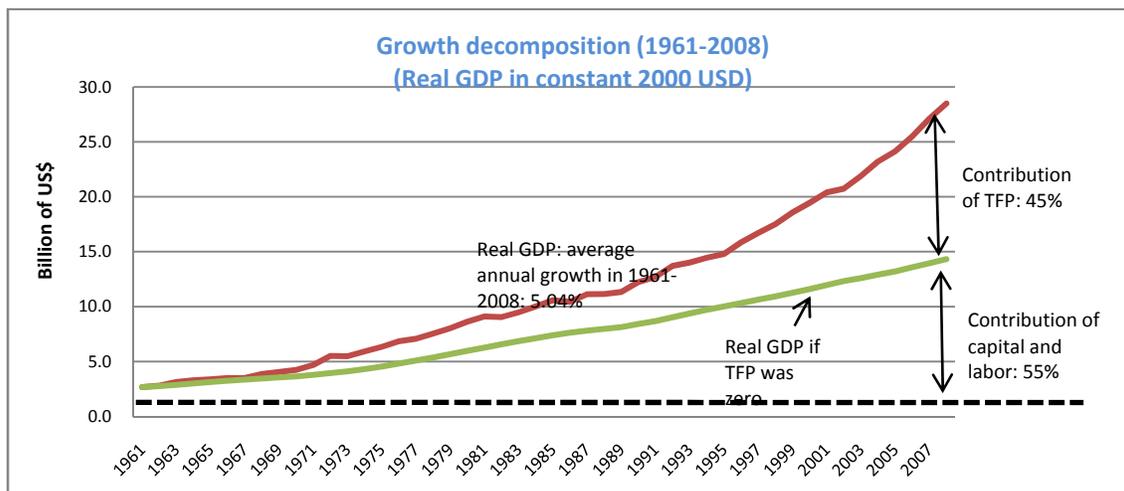
17. **To strengthen the capital-risk system, the legal framework of the SICAR was amended in 2009 in order to encourage risk-taking and investment in lagging regions (2009 Budget Law). However, additional reforms are needed:**

- *The legal framework could be further enhanced by transforming the SICARs into fund managers (Sociétés de Gestion de Fonds) under the supervision of the Conseil du Marché Financier (the stock market regulator). This reform should be accompanied by the adoption of international accounting rules in the area of capital-risk.*
- *The creation of a public fund open to private sector participation could be envisaged for activities considered high risk to stimulate the emergence of high value added or strategic sectors for which Tunisia has demonstrated a real potential;*
- *Finally, the development of capital-risk activities goes hand-in-hand with the deepening of the stock market to facilitate and diversify exit options. In the case of Tunisia, an important avenue for deepening the stock market is to channel a larger proportion of planned privatization operations through the stock market and to open partially the capital of some public enterprises to the public.*

## DEEPENING GLOBAL INTEGRATION

18. **Global integration is a crucial channel of innovation through adaptation, learning and adoption of foreign technologies.** In Tunisia, trade integration has been a key driver of technical progress and productivity growth since the mid-1990s (see World Bank 2008a). Through easier access to technology-intensive equipments and machineries, greater penetration of new markets and enhanced competitive pressure, trade integration has led to higher TFP growth, higher contribution of the latter to growth (see graph below).

19. **Yet, the scope for further enhancing innovation and increasing productivity through integration is large.** For instance, productivity growth (1.40 percent per year in 2000-2006) lags behind Malaysia's (1.47 percent) and Korea's (1.90 percent). To realize the potential for further innovation and productivity growth, four reform areas are crucial: (i) attracting FDI in high value-added sectors; (ii) enhancing regional integration and penetrating new markets in Sub-Saharan Africa and MENA and (iii) opening the capital account to allow Tunisian firms to expand in neighboring and other distant markets.



Source: Bank staff calculations based on data from World Development Indicators, World Bank

➤ **Attract FDI to higher value-added sectors**

20. **FDI have the potential of boosting innovation, productivity and growth by introducing new products and/or diffusing new technologies.** However, these effects materialize only under certain conditions. Higher FDI inflows do not mean necessarily higher value added and productivity (the case of Philippines illustrates this). FDIs generate spillover effects insofar as they are allocated to higher value added sectors, they generate demand for R&D, in-country entrepreneurship is developed and absorption capacity high and linkages across sectors are strong. The development of China's electronic appliance sector is an illustration.

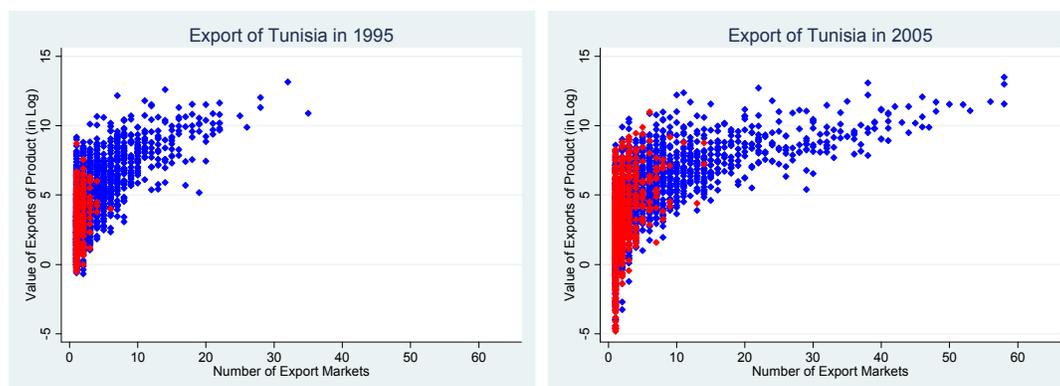
21. **Tunisia is already an attractive site for foreign investors. The objective should be to orient FDI inflows toward high value-added sectors.** Net FDI inflows reached 3 percent of GDP in the period 2000-2007, against a regional average of 2.1 percent. However, more than 50 percent of FDI inflows to Tunisia go to the energy sector while FDI inflows into manufacturing go predominantly to low value-added textile and clothing and mechanical and electrical sectors. From an innovation standpoint, Tunisia needs to attract more FDIs to the higher-value, knowledge-intensive sectors. Furthermore, FDI inflows largely go in the offshore sector which is disconnected from the rest of the economy. In these circumstances, while industrial upgrading may occur, technological spillover effects are limited. *To attract FDI to higher value added sectors, (i) the investment incentive code could be revised to better align it to the new growth strategy; (ii) the emerging foreign investment promotion strategy, portraying Tunisia as a destination attractive to innovation-driven investments should be supported and (iii) offshore and onshore sectors' regulation gap reduced (see below).*

➤ **Enhance regional integration and penetrate new markets in MENA and SSA**

22. **Durably integrating with regional and Sub-Saharan African markets will be crucial in reaping further gains from integration while forcing firms to innovate.** Indeed, integrating durably new markets would allow Tunisia to boost growth and move up the value chain, a step arguably more difficult when trading with traditional European partners specialized in the higher-value segments of the production chain. Furthermore, the penetration of any new market often requires adaptation to local tastes and processes, which force firms to innovate and diversify their production lines.

23. **Tunisian firms have dramatically increased their geographical market reach since the mid-1990s. The challenge is to penetrate new markets durably.** The structure of exports has clearly become more diverse, reflecting a very diverse economy. As the graph below shows, Tunisian firms have also been able to penetrate a large number of markets, including with new products. From a low basis (15 percent of total exports), Tunisian exports to SSA and MENA have been growing at a much faster pace than for the EU over the past 10 years. However, the survival rate of individual firms in those markets is low. To firmly diversify its markets, Tunisian firms need to establish long-term relationships with the new markets in MENA and SSA.

**Number of markets reached (including new ones in red) in 2005 versus 1995**



Source: COMTRADE data. Note: points in red capture new markets.

24. **A unilateral, bilateral and plurilateral agenda of reforms aimed at reducing the fixed costs of entering overseas markets and staying durably there are called for through:**

- *Reduce non-tariff barriers (NTBs) unilaterally and within a regional framework to enhance regional integration in MENA.* With the significant reduction in tariffs, NTBs are now the major hindrance to trade within the region. In Tunisia, some progress has been made and the NTBs were estimated to be lower than in Morocco and Egypt in 2008. However, they are much higher than in Jordan, Turkey, Romania and Bulgaria as well as in most middle-income countries in East Asia and Latin America. Because it is one of the most diversified and competitive economies in MENA, Tunisia should not only go further in reducing its own barriers but also play a lead role in reducing NTBs within the Union of Arab Maghreb (UMA) and the Arab League.
- *Negotiate an open skies agreement with the Arab League partners.* The EU has proposed an ‘open skies’ agreement with Tunisia. Such an agreement would open those bilateral routes

up to low-cost carriers, putting competitive pressure on air fares on those routes and help the tourism sector. However, as shown in World Bank (2008a), to maximize network and scale economies and sharply reduce prices, an open skies agreements with Tunisia's Arab League partners will be needed as well;

- *Negotiate free trade agreements with regional entities in SSA, starting with the West Africa Economic and Monetary Union (WEAMU) and the Common Market for East and South Africa (COMESA).* Such agreements could help reduce uncertainty for firms and investors. The WEAMU, a market of 72 million, is a customs union with a common currency and fully harmonized and stable trade-related regulations. COMESA, which includes Egypt and Libya, is a market of 350 million people in advanced process of integration. Such agreements would help stabilize commercial relationships and could help Tunisian firms penetrate durably these markets.
- *Proactively seeking an agreement with regional partners to increase maritime transport links.* The limited direct maritime links between the countries of the region (in particular Tunisia-Morocco, Tunisia-Algeria, Tunisia and SSA countries) is a serious obstacle to regional integration. Experience around the world suggests that waiting for trade to reach a high level is not a solution. Rather putting in place the transport link would widen the scope of trade. Again because of its diverse production structure, Tunisia could play a lead role in championing greater maritime links;
- *Promoting the establishment of financing mechanisms for trade and investment in MENA and Sub-Saharan Africa.* A greater presence of Tunisian banks in the countries of these regions is a first place to start. The opening of the capital account for Bank and firms wanting to open subsidiaries in these countries should also help this process.

➤ **Managing the opening of capital account to help Tunisian firms internationalize**

**25. The (prudent) opening of the capital account goes hand in hand with deeper trade liberalization.** In a growth strategy where innovation plays an important role, capital account liberalization can help increase the availability of capital to finance investment and innovation while expanding opportunities for risk sharing and consumption smoothing (Agénor 2001; Edison, Klein et al. 2004). In the particular case of Tunisia, it would allow Tunisian firms to expand by setting up subsidiaries in proximate and distant markets thereby increasing national income growth.

**26. Tunisia has been gradually liberalizing its capital account, progressively dismantling restrictions on international financial transactions using a three-phase approach.** In the first phase, which is nearly complete, (i) most restrictions were removed on inbound FDI; (ii) nonresidents can undertake limited investment in local currency government securities and in listed firms and nonfinancial institutions. Authorizations were abolished on most foreign portfolio investment in Tunisian companies and, finally (iii) borrowing abroad was fully liberalized for financial institutions and restrictions were eased for non-financial institutions. The second phase liberalizes outbound FDI and allows overseas portfolio investments by institutional investors and portfolio investments in debt instruments by nonresidents. The third phase will allow portfolio investments abroad and lending by residents to nonresidents while achieving in parallel full currency convertibility.

27. **Given risks, opening the capital account requires pursuing the strengthening of the banking system.** This in turn calls for a dramatic reduction of non-performing loans. In 2008, they stood at 15.5 percent. Furthermore, only 56.8 percent of the NPLs are provisioned on average, a low percentage by international standards. The authorities' objectives are to reduce the NPL to 15 percent and increase the ratio of provisioning to 70 percent in 2009. One instrument that can help further reduce NPLs is the restructuring of loans for debtors who could repay if interest payments were reduced. To overcome or dampen moral hazard phenomenon, partial cancellation of loan could take the form of equity swap, i.e., a conversion of loan into participation. Banks could ultimately sell their participation to capital-investment firms. This technique has been used in many emerging countries, including Poland, Korea and Mexico in the context of financial crises. Egypt built on this technique when it created at the central bank, a special unit in charge of restructuring banks' private loans.

28. **Opening the capital account also calls for a more flexible exchange rate.** The experience of the past decades has shown that with a liberalized capital account, conventional fixed exchange rate regimes become precarious. Although there are a number of measures that can be adopted to enhance the viability of these regimes, in practice capital account liberalization has often been accompanied by greater exchange rate flexibility. The key reason is that a float allows greater freedom in responding to exogenous shocks, particularly destabilizing movements in short-term private capital flows—despite the fact that large nominal exchange rate fluctuations themselves may entail some risks.

29. **Tunisia has gone some way in making the exchange rate more flexible.** Since early 2000, in the context of its strategy of increased regional and global integration, there has been a gradual move away from the crawling peg regime toward a more flexible arrangement – a managed float with no predetermined path or official fluctuation band. The outcome has been a 22 percent cumulative depreciation of the dinar in 2000-08. More recently, the central bank's interventions in the foreign exchange market have declined, though exchange rate flexibility still remains limited. The standard deviation of the effective exchange rate stood at 1.3 in 1998-2000, 4.6 in 2001-04, and 2.3 in 2005-07. To go further in making the exchange rate more flexible, *a greater familiarization by the central bank with the implications of the different exchange rate "flexibility" regimes (i.e., horizontal versus diagonal bands, symmetrical versus asymmetrical bands around the central parity, bands with steps, etc.) will be necessary. Chapter 4 of this report looks at this in detail.*

## FOSTERING AN ENABLING ENVIRONMENT FOR ACCELERATED STRUCTURAL CHANGE

30. **Productivity-driven growth requires that labor, capital, know-how and technology move easily across the sectors of the economy.** Following the signature of the Association Agreement with the EU, a large number of reforms have been implemented to enhance the investment climate (including the industrial upgrading program, trade facilitation programs and a number of reforms to facilitate firm creation and business conduct). Today, additional reforms are needed further enhance the allocation of resources across sectors and reduce barriers to entry. In particular, it will be necessary to reduce controls on business in the onshore sector, improve the quality of public services to firms, enhance market competition and improve the functioning of the labor market.

### ➤ **Reduce controls on business to enhance integration of offshore and onshore sectors**

31. **In spite of numerous measures to reduce the dichotomy in the economy, the economic structure of Tunisia is still dual:** an offshore "sector" (we use sector for simplicity but it is a "regime" since an offshore status is possible for any tradable sector), established in the early 1970s

with a liberal regime (10 years tax holiday, duty-free imports, fast trade procedures, free repatriation of profits, etc.) coexists with the local onshore economy without any significant production and trade links. Integrating the two regimes would allow greater FDI externalities, greater local value added content and enhanced cost competitiveness thanks to transport and logistics cost economies. China's economy illustrates these benefits.

**32. Integrating offshore and onshore regimes requires reducing the administrative and procedural gaps between the two sectors.** Indeed, current legislation allows offshore firms to sell up to 30 percent of their production in the domestic market (and be subjected to domestic regulation on that proportion). However, the take up of this option is quasi-inexistent. Firms operating under an offshore regime are used to operating in a liberal environment, with no tax and minimal interferences with the administration and therefore are reluctant to sell in the domestic market even when prices are higher there (as in the case of many textile and mechanical component products). The solution lies in the improvement of the interface between the administration and the private sector:

- *Reduce tax controls on firms that sell in the domestic market in order to strengthen linkages between offshore and onshore sectors;*<sup>4</sup> the pervasiveness and complexity of government's controls on transactions in the domestic market seem to be the main constraint to integrating these two sectors. Firms operating in the offshore sector value the limited intervention of the government that they enjoy and are reluctant to face pervasive and complex controls from the administration and intrusive prescriptions of the modalities of business conduct.
- *Provided that controls on business are reduced and simplified, Tunisia can consider gradually increasing the proportion of output that offshore firms can sell in the domestic market.* That would also call for considering a suspension of some taxes paid by partially exporting onshore firms (such as VAT) to allow them to compete with offshore firms under similar basis. This reform could amplify the spillovers effects of FDI throughout the economy and enhance productivity.
- *Streamline legislative and regulatory texts on economic activities that have accumulated over the years.* A plethora of legislative and regulatory texts on economic matters has accumulated over the years, with little attention to their consistency with earlier texts or to the overall coherence of the legal framework. Such state of affairs produces confusion and uncertainty among potential investors and thus missed investment opportunities. Partial simplification and codification has taken place during the past 15 years in some important areas, notably the companies code and the customs code. These initiatives have been valuable, but a systematic and more comprehensive effort in that direction is called for. *The Government should consider launching a comprehensive inventory and review, from the ground up, of all legislative and regulatory texts in the area of economic activity, with a view to abrogating obsolete ones, correcting contradictory ones, codifying certain areas as may be appropriate, and generally to achieving a major streamlining and coherence of the legal dimension of the regulatory environment for economic activity.*

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<sup>4</sup> Tax avoidance along with the weak protection of investors is Tunisia's weak points in the World Bank Doing Business ranking. Worldwide as well as relative to more developed neighboring countries Tunisia compares very well in international trade rules and ease of closing a business, and reasonably well in respect of starting a business, registering property, and contract enforcement. Rigidity of firing laws, which— in all countries-- is the result of deliberate labor-protection policy and not a symptom of regulatory weakness, is also a weak point for Tunisia in the Doing Business ranking.

➤ **Enhance market competition**

33. **Among import-competing firms there remains a widespread perception of a skewed operating environment compared to the offshore sector.** Firms that sell into the domestic market complain about anti-competitive practices and the unfair advantages of informal competitors that do not pay tax and social security contributions. In a recent survey of 851 enterprises (IEQ 2008), close to three quarters of responding firms complained about one form of anti-competitive practices – either through artificially low price fixing (60 percent of respondents), dominant power abuse (15 percent of respondents), explicit or implicit agreements (14 percent of respondents) or all of these. Firms also find it difficult to sustain competition with firms operating in the informal sector, or officially formal firms that avoid paying social security charges (35 percent of respondents) or undertaking counterfactual activities (26 percent of firms).

- It is thus crucial to raise Tunisia’s firms’ awareness of the activities of the competition council. This council has since a 2005 law the power to trigger litigation (“*auto-saisine*”) and impose market discipline. However, a recent firm survey (IEQ 2008) shows that about 50 percent of firms that complain about anti-competitive practice are not aware of the existence of a competition council. *Pro-active information campaigns are warranted;*
- *The activities of the Directorate of Competition within the Ministry of Commerce could also be examined and assessed, in view of making it more effective.*

➤ **Improve the quality of public services to firms**

34. In a global competition context, the quality of public services is important for competitiveness. To that effect, rationalizing and improving the simplicity and coherence of business-related texts is not enough. The way public servants apply the regulations and interact with the private sector is often a more serious problem (World Bank 2009). It is in particular crucial that the administrative entities enforce regulations in an even manner and adopt a client satisfaction orientation to ensure the highest quality of interaction and services possible for private sector growth.

35. Tunisia has initiated an ambitious program to improve to the quality of services to firms and citizens. The reform includes (i) simplification of procedures; (ii) reduction in the time and the number of documents required for business transactions; (iii) simplification of the cahier des charges (business regulation in certain sectors); (iv) establishment of a one-stop shop and online services for investors and (v) enhancement of the quality of public administration services through a special “quality” program. The latter is the fourth component of the Government Strategy, “An Open Administration Closer to the Citizen”. The priorities set under that component are to:

- publish a public service charter;
- develop mechanisms allowing citizens to express opinions, and improve the administration’s communication and information channels;
- ensure that citizens obtain replies to their queries in a timely and satisfactory manner;
- address the quality of reception of the public;
- reinforce regional and local decentralization to bring the administration closer to the citizens; and
- increase the number of administrative communication and information call centers.

36. The public service improvement program reflects a commendable commitment to greater participation by the public. *It is however important to indicate the desirable sequencing, which is essential since it is evident that not all seven priorities can be implemented at the same time. Furthermore, it will be important to incorporate in the reform an explicit monitoring and evaluation system.* The implementation of the public service improvement program could also be an important opportunity to debate the importance of improving the behaviors and practices (not only rules and regulations) of administrations in direct contact with the private sector. Private firms often complain about limited understanding of the spirit of some reforms at the local level as well as limited managerial autonomy of local structures.

➤ **Improve the functioning of the labor market.**

37. **Encourage labor mobility across sectors.** Tunisia's firing laws are rigid. In principle, this is a hindrance to labor mobility and productivity growth since talents can remain bottled up in stagnant sectors at the detriment of dynamic ones. However, in practice, labor market surveys suggest that the rigidity in firing laws is bypassed and has induced firms to offer precarious and short-term employment, sometimes informal jobs. This provides some flexibility but makes employment precarious for a large number of individuals. The severity of job instability seems to be compounded by the prevalence of skills mismatch which induces firms to develop low expectations regarding the qualifications of employees and to resist offering a longer-term contract or offering better wages. A key policy recommendation is thus *to make firing laws less rigid while linking it to the introduction of employment insurance. The main benefit of relaxing the rigidity of firing laws would be to facilitate formal job creation (i.e., change the composition of the labor mix between formal and informal) and firms' restructuring which is key to productivity growth. The government could consider linking this reform with the introduction of some sort of unemployment insurance to provide a minimum of safety net to those who lose their jobs.*<sup>5</sup>

38. **Further improve the efficiency and efficacy of intermediation services.** Intermediation services are provided within the framework of Tunisia's active labor market policies. These policies aim at reducing labor cost for firms to encourage labor demand, overcoming information asymmetry by offering intermediation services to job seekers and enterprises, training, apprenticeship and public workfare under various national funds. The government has recently paid due attention to improving intermediation services. A recent reform aims to (i) improve the quality of public services provided to job seekers and the interface with the latter; (ii) open the intermediation services to the private sector and association to enhance competition and efficiency; (iii) and improve employment information collecting, treatment and flows for better active labor market policy making. *Implementing these sensible reforms would go a long way in improving the efficiency and efficacy of labor matching.*

## MEETING THE CHALLENGES OF NATURAL RESOURCE CONSTRAINTS THROUGH INNOVATION

39. **Enhancing productivity in natural resource-intensive sectors is a complex task for any country.** Indeed, with an increasing concern over environment and climate change issues, there often appears tensions between the objectives of increasing productivity, enhancing income growth and

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<sup>5</sup> According to World Bank (2008b), severance pay is among the lowest in the region, and only regulated for general dismissal, with courts deciding in other cases. Only in cases of collective layoffs do people have access to a benefit as high as the minimum wage, during a maximum of six months. This benefit is paid by the *Caisse Nationale de Securite Sociale*, and funded through a 0.4% payroll contribution.

food security and that of environmental sustainability. In confronting these tradeoffs, Tunisia can make a greater use of innovation in agriculture, tourism and energy management.

40. **Tunisia has been a pioneer in promoting conservation and energy efficiency.** In general, the country has a solid record of environmental and resource management and effective use has been made of limited endowments of land, water and energy resources. However, economic development is putting the fragile natural environment under stress and some adjustment may be necessary to ensure sustainability in the medium to long term. It would thus be timely to rethink sectoral objectives and strategies which have become obsolete, ineffective or in some cases inconsistent.

41. **Water and land are Tunisia's top two resource constraints.** Agricultural subsidies have promoted food security and redistributed income to rural areas, but productivity gap in agriculture between Tunisia and countries like Spain, Italy and other emerging economies remain important. Yet, developments in the agricultural sector have already led to a degradation of rural land and water resources. Nearly a third of agricultural land is now severely degraded, while groundwater levels are dropping rapidly and salinity is increasing. With 90-95 percent of available water already being used, intensifying the effort to mobilize additional supply is unlikely to solve the problem. Rather:

- *Some combination of conservation, increased efficiency and investment in infrastructure is needed to ensure water use is sustainable.* Since agriculture is by far the largest user of water, constraining its growth at some point is inevitable, curbing production in some low value sub-sectors.
- Meanwhile, urban development and beach tourism along a relatively small stretch of the coast have stressed the coastal ecosystem – both water and land – to the point that some beaches may actually disappear within a few years. *Here the response should comprise elements of master planning, tighter environmental regulation, desalination and a decisive move to cultural tourism to better exploit Tunisia's rich cultural heritage.*

42. Energy efficiency is already one of the best in the MENA region and the 11<sup>th</sup> Development Plan aims to raise it further. To improve energy efficiency initiatives, it will be important to:

- *Strengthen some aspects of the regulatory framework to promote private investment;*
- *Increase access to financing– for instance putting more resources into the energy efficiency fund (Fonds National de Maitrise de l'Energie), and supporting the development of energy service companies (ESCOs).*

43. Finally, the pressure on natural resources constitutes an important opportunity for Tunisia to invest (including through FDI) in clean technologies and develop research and innovation in the areas of solid waste and water and management. Given that these challenges are common to most countries of the region, regional integration could provide a suitable operational platform to address them.



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## 1. GROWTH AND EMPLOYMENT OUTCOMES AND CHALLENGES

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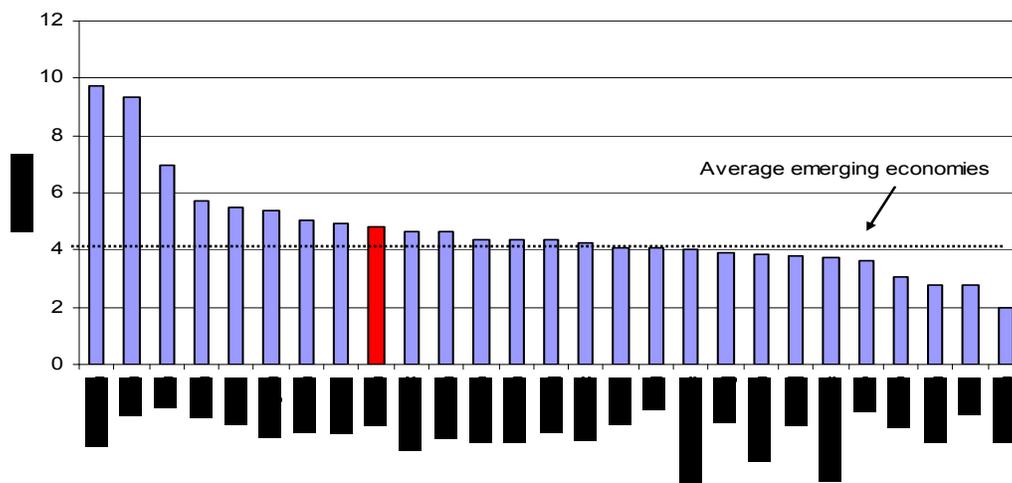
1.1. This chapter shows that through steady structural reforms and good macroeconomic management, Tunisia has been successful in sustaining growth and increasing the welfare of its population. Despite this, employment outcomes, especially for young university graduates, are poor. The national average unemployment rate stood at 14.1 percent in 2008 and as much as 30 percent for individuals aged 20-24. Unfortunately, the current global financial crisis can further worsen employment numbers in 2009 and 2010.

1.2. This chapter demonstrates that the persistently high unemployment rate reflects a rapid growth in the labor force and the large and widening gap between the profile of demand and labor supply. It concludes that the solutions to Tunisia's employment problem lie in implementing reforms which will further boost growth and move the economy toward more skill and knowledge intensive, higher value added activities (chapter 2 and 3).

### GROWTH PERFORMANCE AND DRIVERS

1.3. Tunisia enjoyed a 4.8 percent average annual growth in GDP over the last 8 years, placing the country among the leading performers in the group of emerging economies (Figure 1). In the MENA region, only Jordan did better with an average annual GDP growth of 5.5 percent. Tunisia did better than most countries in the region because it started structural reforms earlier and stayed the course in a gradual fashion. But many emerging countries, such as Malaysia and Turkey, which share similar growth model, did better than Tunisia. Benchmarking these countries with Tunisia on both productivity and private investment growth show this.

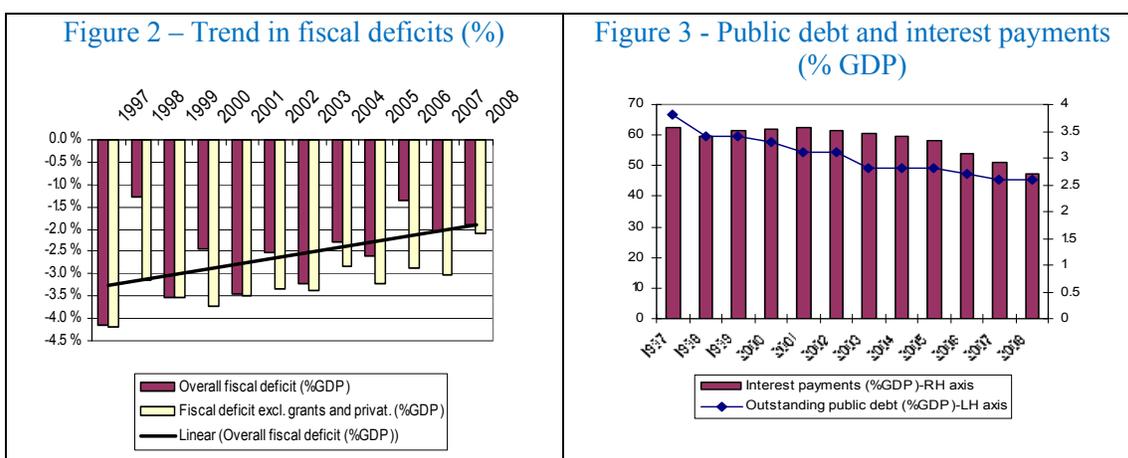
Figure 1- Tunisia and emerging countries' growth performance



Source: World Bank, World Development Indicators

1.4. Tunisia's growth performance reflects openness to FDI and trade, human capital development, steady investments in infrastructure and macroeconomic stability:

- *Openness to trade and foreign investment.* The establishment of a liberal “offshore” regime in 1972 helped Tunisia attract foreign investments to develop competitive export-oriented manufacturing industries. The offshore sector provides generous benefits that attract investors: duty-free imports of raw materials and equipments, free repatriation of profits and 10-year tax holidays. The EU-Tunisia Association Agreement signed in 1995 gradually eliminated tariff barriers with the EU and further improved export performance and enhanced productivity. Annual FDI flows averaged 2.2 percent of GDP in 1996-00, 2.6 percent of GDP in 2002-05 and 5 percent of GDP in 2006-2008. Total factor productivity growth went from -01 percent annually in the 1980s to 1.24 percent in the 1990s to 1.40 percent in 2000-2006. Today 75 percent of Tunisia's trade is with the EU.
- *Human capital development.* Tunisia is capitalizing on historical investments in education which enabled the creation of an educated workforce and a faster acquisition and diffusion of global knowledge and technologies. In 2008, 57 percent of the new entrants in the labor market held a university degree. The return on investment in human capital increased dramatically from the mid-1990s, when trade openness allowed Tunisia to more effectively use its human capital stock.
- *Prudent fiscal policies and pro-active monetary and exchange rate management* helped maintain macro stability in spite of recurrent exogenous shocks.<sup>6</sup> Fiscal deficit dropped from 4.2 percent in 1997 to 2.1 percent of GDP in 2008 (Figure 2). This, combined with intensified efforts to reduce external debt in 2005-2008, contributed to a sharp reduction of the public debt ratio, from 58 percent in 2005 to 47.5 percent in 2008 (Figure 3). Debt reduction in turn allowed a reduction in interest payments and provided some fiscal space to manage shocks, such as the global food and fuel crises in 2008 (food and fuel subsidies increased sharply by 1.3 percent of GDP to reach 3.7 percent of GDP in 2008).



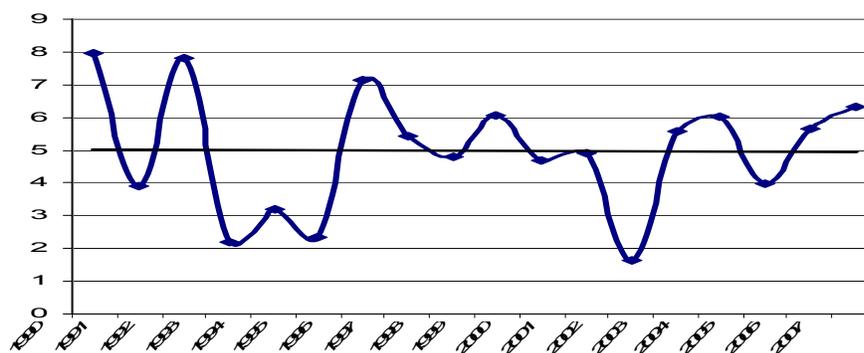
Source: Ministry of Finance, Tunis

<sup>6</sup> The level of job creation (+2.6 percent annually) could not have been sustained short of good management of shocks.

1.5. Tunisia should continue fiscal consolidation efforts because fiscal space remains limited and the country is highly exposed to exogenous shocks. In particular, Tunisia is highly vulnerable to the vagaries of growth in Europe and the variations in rainfalls:

- Indeed Tunisia’s growth cycle is strongly correlated with that of the EU. Econometric analysis shows that a 1 percent reduction in the EU growth leads on average to a 0.66 percentage point reduction in Tunisia’s growth, all else being equal. Growth in Europe has been strong in the late 1990s, weak in 2000-2005, good in 2006-2007 and in recession in 2008-2009. Figure 4 shows this has affected Tunisia’s growth even if the latter quickly adjusts to shocks and return to stability.<sup>7</sup>
- Tunisia’s growth is also very sensitive to rainfalls. Tunisia’s two largest agricultural products, cereal and olives, depend on the level and variability of rainfalls each year. The various rainfall-driven shocks to the agricultural sector (13 percent of GDP and 18 percent of employment) over the last 10 years significantly affected growth, as in 1999, 2002 and 2004.

Figure 4- Exogenous shocks and growth in Tunisia (%)



Source: World Bank, World Development Indicators

## POVERTY REDUCTION AND SOCIAL ACHIEVEMENTS

1.1. An early review of the Tunisian growth-poverty reduction experience clearly demonstrated that growth in the country has been consistently pro-poor (Ayadi, Boulila, Lahouel and Montigny 1995)<sup>8</sup>. The steady increase in per capita income has been the main engine for poverty reduction.<sup>9</sup> Using a long-term perspective, Figure 5.a and Figure 5.b compare Tunisia with that of selected comparator countries based on 2 criteria: (i) similarity in initial conditions in terms of the level of GDP per capita in the early 1960s: Morocco, Jordan, Malaysia and to a lesser degree, Egypt had similar levels of GDP per capita in 1960 (“group

<sup>7</sup> Textiles and clothing and tourism are two particularly sensitive sectors. The September 11<sup>th</sup> events in the US led to a sharp decline in tourism in 2002; the removal of the multi-fibre agreement in 2005 led to sluggish performance of textiles in the period 2000-2005.

<sup>8</sup> See Mohamed Ayadi, Ghazi Boulila, Mohamed Lahouel, and Philippe Montigny “Pro-Poor Growth in Tunisia”. In World Bank. 2005. *Pro-Poor Growth in the 1990s. Lessons and Insights from 14 Countries*.

<sup>9</sup> Per capita incomes increased steadily over time as a result of GDP growth, but also as a consequence of Tunisia’s demographic transition, which reduced the number of child per family from 7 in the late 1960s to 2 in 2008.

1” countries) and (ii) competitors in Eastern Europe with similar proximity advantage vis-à-vis the EU: Bulgaria, Romania and Turkey (“group 2” countries).

1.2. Tunisia’s GDP per capita in constant 2000 USD increased 4.2 times from \$624 in 1961 to \$2646 in 2007, implying an average annual growth rate of 3.2 percent. In comparison with “group 1” comparator countries, Tunisia’s GDP per capita (in constant USD) in 2007 was higher than that of Egypt (\$1800), Jordan (\$2248) and Morocco (\$1693), which exhibited average annual growth rates of 3.1, 2.4 and 2.1 percent, respectively. However, starting with similar initial conditions, Tunisia’s GDP per capita fell significantly short of Malaysia’s (Figure 5a). In comparison with competitors in Eastern Europe with similar proximity advantage vis-à-vis the EU, Bulgaria and Romania have GDP per capita that are below Tunisia’s - \$2401 and \$2596, respectively. Turkey, on the other hand, has a GDP per capita that is significantly higher at \$5053 (Figure 5b).

Figure 5a- GDP per Capita, 1960-2007, constant 2000 US\$; Tunisia and "Group 1" Countries/

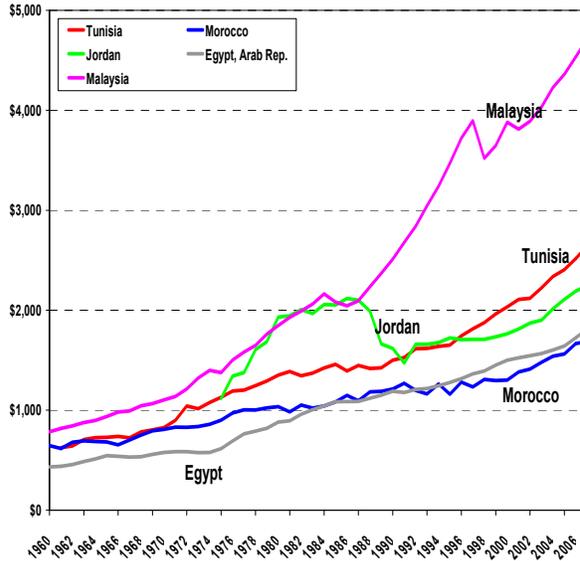
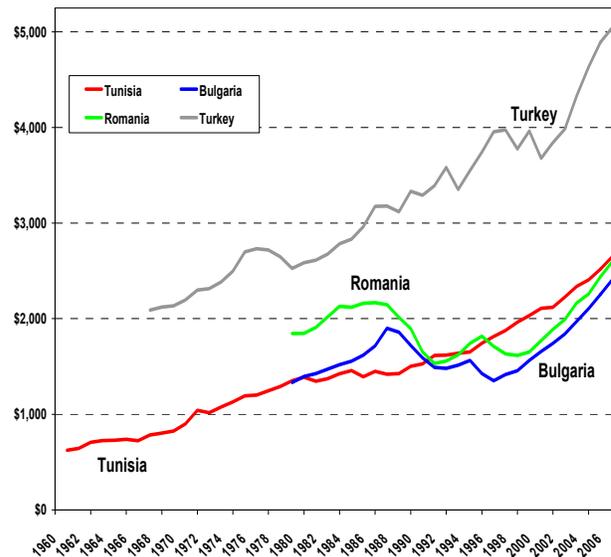


Figure 5b. GDP Per Capita, 1960-2007, constant 2000 US\$; Tunisia and "Group 2" Countries



Source: World Development Indicators

1.3. In addition to rising incomes, public investment in infrastructure and human capital have also played an important role in reducing poverty. About 60 percent of Tunisia’s budget is allocated to social sectors. Rural roads have been particularly important role in helping the rural poor connect to urban markets and to urban services. Housing programs improved the living conditions of the poor and also freed up income and saving to spend on food and non-food items with resulting positive impacts on poverty alleviation. Food subsidies, which have been targeted to the poor, although not optimally, have also helped the urban poor. Rising per capita incomes combined with steady public investment in social sectors led to remarkable socio-economic indicators (Table 1). Life expectancy at birth, a key indicator of well-being, stood for instance at 74 years in 2007.

Table 1 - Some of Tunisia's key social indicators

Year	2003	2004	2005	2006	2007
Access to electricity (% of connection to the network)	98.4	99.0	99.3	99.4	99.5
Access to potable water (% of connection to the network)	78.8	83.3	84.1	84.5	84.8
Access to sanitation in urban areas (%)	75.2	78.3	80.0	80.9	81.7
Infant mortality rate (per 1000 births)	21.1	20.7	20.3	19.1	18.7
Life expectancy at birth		73.1	73.4	73.5	74.2

Source: Institut National de la Statistique, Tunis

1.4. Have these mechanisms continued to bring about further poverty reduction in 2000s? Official poverty numbers show a further decline in poverty between 2000 and 2005: 4.2 percent in 2000 and 3.8 percent in 2005. Furthermore, data from the latest household survey conducted in 2005 show a 37.6 percent increase in average per capita income between 2000 and 2005 (Table 2). Finally, the gap between Grand Tunis, the richest region, and the northwest and center west regions, the least affluent ones, has narrowed.

Table 2 - Average per capita expenditure by region (in current TND)

Region	1990	1995	2000	2005
Grand Tunis	1007	1289	1761	2390
North East	760	958	1190	1613
North West	501	677	1103	1416
Center West	502	586	909	1138
Center East	806	1275	1594	2084
South West	521	711	1017	1466
South East	600	739	1097	1826
<b>Total</b>	<b>716</b>	<b>966</b>	<b>1329</b>	<b>1820</b>

Source: Institut National de la Statistique, Tunis

1.5. However, Tunisia's official poverty line, at 400 Tunisian dinars/year is too low and only captures the essential needs of physical survival. Using a higher poverty line, the World Bank global poverty project finds an incidence of poverty of 7 percent for Tunisia for 2005, still the lowest in the MENA region. Looking forward, it will be important for Tunisian policymakers to go beyond absolute deprivation as captured by poverty incidence to consider issues of vulnerability and exposure to risk. Indeed, 777,000 individuals earning between 400 and 585 TD (7.7 percent of population) can be considered as vulnerable, especially in light of the global financial crisis. A total of 46 percent of the population spend between 955 and 2250 TD yearly, while 7.4 percent of the population (747,000 people) undertake expenditures above 4000 TD (Table 3).<sup>10</sup>

Table 3 - Distribution of the population by expenditure category, 2005

Per capita annual expenditure brackets	Number of people (in thousands)	Distribution in percentage (%)
Lower than 400 TD	376	3.8
400 to 585 TD	777	7.7
585 to 955 TD	1956	19.5
955 to 1510 TD	2640	26.3
1510 to 2250 TD	2038	20.3
2250 to 4000 TD	1501	15
Over 4000 TD	747	7.4
<b>Total</b>	<b>10 035</b>	<b>100</b>

Source: Institut National de la Statistique, Tunis

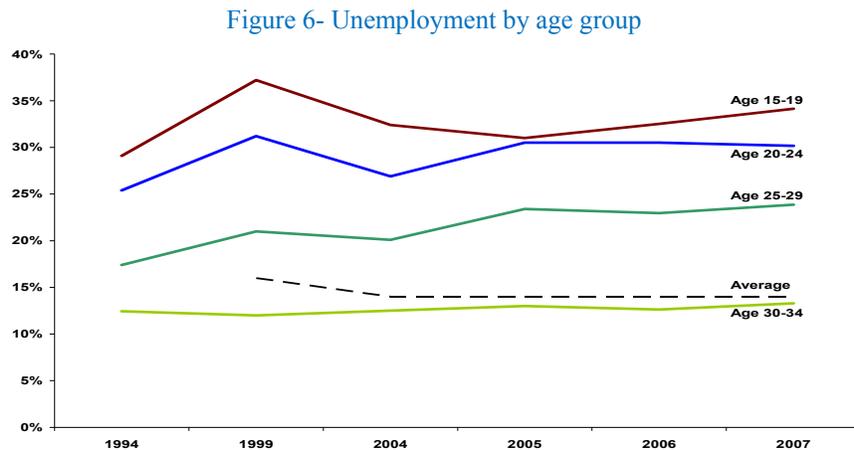
<sup>10</sup> Without going in-depth on "second generation" poverty issues (typically addressed through poverty assessments), the need for further analysis to define and monitor social exclusion is warranted.

## EMPLOYMENT OUTCOMES

### *The basic facts*

1.6. Despite its good growth performance, Tunisia continues to struggle with high levels of unemployment. Between 1999 and 2007, unemployment dropped only slightly, from 16 to 14.1 percent, much of this having occurred before 2005. Since then, annual job creation (between 70,000 and 80,000) has fallen short of covering 100 percent of the additional labor supply (about 90,000 annually), much less made inroads into the stock of unemployed – about 508,100 people.

1.7. Times series data show that unemployment varies by level of age, level of schooling and gender. The unemployment rate for individuals between 15 and 30 years of age is above the national average, but is higher for younger age groups, reaching close to 35 percent for the 15-19 age group, 29 percent for individuals aged between 20 and 24 and 25 percent for the 25-29 age group (Figure 6). Recent analysis<sup>11</sup> suggests that young graduates not only face higher rates of unemployment but also have a higher probability to remain unemployed for a long time (between 2 and 5 years).

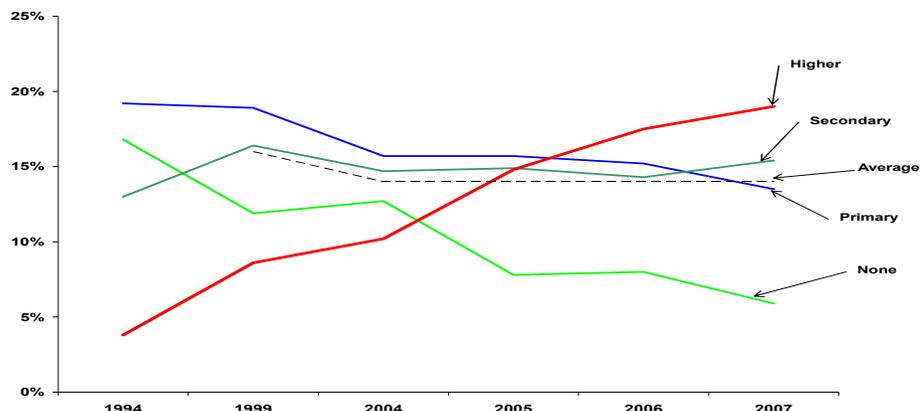


Source: Institut National des Statistiques, Tunis

1.8. With rapidly widening differences overtime, unemployment varies also by the level of schooling. It is particularly severe for first-time jobseekers with university degrees, with the rate hitting 19 percent for the highly educated in 2007. Whereas unemployment rates for individuals without education and with primary education are low and falling, those for university graduates are increasing fast. From less than 5 percent in 1994, the unemployment rate for university graduates has increased steadily to surpass those for individuals with lower levels of education. It almost tripled between 1999 and 2007, rising from 7.9 to 20 percent (Figure 7).

<sup>11</sup> “Labor Demand, Skills Supply and Employment: Towards an integrated strategy for job creation – Phase II” (World Bank 2008) and *Dynamique de l’emploi et adéquation de la formation parmi les diplômés universitaires* (World Bank 2007).

Figure 7 - Unemployment by schooling level



Source: Institut National des Statistiques, Tunis

1.9. The above trends strongly reflect differentiated dynamics of youth labor market participation, by gender and level of schooling. Table 4 shows the status in the labor market by level of education and gender for individuals aged 23 to 29 years. For this age group, average participation rate is 71 percent and average unemployment rate 26 percent. But participation and unemployment rates vary widely by gender and level of education. There is a large gender gap with a participation rate of 92 percent for men and 48 percent for women. This is due to a low participation rate of women non-graduates (43 percent) since post-university education literally erases gender gap in participation. Although it is somewhat higher than the average for the MENA region (though lower than, for instance, Morocco's) the low participation rate of women non-graduates is low by middle-income country standards.

1.10. Because of the large participation of female university graduates (almost at par with men), unemployment rate for graduates is much higher than for non-graduates within the 23-29 age group: 40 percent against 24 percent. Still, unemployment rate for women graduates remains higher for women: 46 percent against 33 percent for men. Finally, non-graduates (especially men) tend to be more entrepreneurial than graduates: 19 percent of non-graduates are self-employed versus only 4.8 percent for graduates meaning that most graduates prefer queuing for a salaried employment instead of creating a business.

Table 4 - Status in the labor market by education and by gender (individuals aged 23-29 years)

	Graduates			Non-graduates			Total		
	Male	Female	total	Male	Female	total	Male	Female	total
Active	97.6	92.3	94.7	92	43	68.5	92.5	48.4	70.7
Unemployed	32.8	46.1	39.9	23.2	26.3	24.1	24.0	29.9	26.0
Regular wage earner	58.7	48.7	53.4	44.0	56.8	48.0	45.2	55.4	48.6
Casual wage earner	1.8	2.0	1.9	10.5	3.8	8.4	9.8	3.4	7.6
Self-employed	6.6	3.2	4.8	22.4	13.1	19.5	2.1	11.3	17.8
Total	100	100	100	100	100	100	100	100	100

Source: Labor Force Survey, 2007; Note: non-graduates = secondary education or less

1.11. Unemployment in Tunisia parties in part driven by its success in putting a large number of people in school. Some 60,000 students are graduating each year from the universities. Due to the significant expansion of universities, and rapid increase in the number of secondary students obtaining a Baccalaureate, about 60 percent of new entrants to the labor force are now university

graduates. This prepares Tunisia well to changing the structure of its economy toward more skill-intensive sectors and higher productivity in the long run. In the short run however, when the number of yearly university graduates is compared with the 70,000-80,000 total jobs generated by the economy each year it is easy to see why graduate unemployment is rising rapidly. For instance, the gap between supply and demand of labor for individuals with a university diploma was estimated at nearly 30000<sup>12</sup> in 2007.

### *Job queuing and mobility*

1.12. Labor market surveys provide useful information on job queuing and mobility. The average duration of unemployment is much longer for university graduates than other job seekers: 28 months for university graduates against 19 for non-graduates (Labor Force Survey 2005 and 2006). While a proportion of university graduates now apply for lower skilled job positions (downgrading), those that can afford it seem to disdain manual work and prefer queuing for a secure, well-paid job vacancy.

1.13. Labor market surveys also reveal a high level of instability of jobs except for public administration. About half of individuals aged 23-29 working in construction, retail and hotel-restaurants were still employed in those sectors one year later. Excluding the public administration, turnover rates vary between 40 and 50 percent for the 23-29 age group. This high level of turn over seem to reflect a heavy recourse to short-term contracts, as a way of circumventing the constraint imposed by Tunisia's rigid firing laws<sup>13</sup> (see chapter 2 for a detailed discussion).

### *Impact of migration on labor supply*

1.14. In an open economy, whether Tunisian firms will be able to capture and use the best skills available depends on *migration*. Emigration has played a little role so far but can have a significant impact on future labor market outcomes. Tunisia's official emigration is small in terms of absolute numbers. Net emigration in 2007 stood at 14,350 individuals, i.e. about 0.4 percent of the active population. However, it is noticeable that a growing proportion of new entrants in the labor market emigrate. In 2007, around 13 percent of new entrants did emigrate, which is not negligible. Moreover, the profile of migrants is changing with the share of highly educated individuals increasing significantly<sup>14</sup> (20 percent of the total in 2007 compared to 14 percent in 2006). France has signed an agreement with Tunisia, as part of its new "*immigration choisie*" (immigration based on France's choices and interests) framework. That agreement stipulates that about 9,000 Tunisians could be granted a visa each year for work purposes (1500 young professionals, 1500 experienced and highly skilled professionals, 1500 salaried workers and 2500 seasonal workers).

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<sup>12</sup> The number of new jobseekers with Higher Education has risen to a total cohort of around 50,000. The absolute number of new salaried jobs for HE graduates, 20,000-30,000 a year, is insufficient to accommodate a cohort of 50,000.

<sup>13</sup> Tunisia ranks poorly in doing business on that indicator with a firing index more twice as high as for the MENA region and the OECD.

<sup>14</sup> Source: INS and ETF

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## 2. ACCELERATING STRUCTURAL TRANSFORMATION

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2.1. This chapter shows that a more robust productivity growth is needed for to grow beyond its traditional 5 percent growth. However, this may not be enough to reduce unemployment significantly. Tunisia needs a rapid transition to a higher value-added, knowledge-intensive economy in order to increase the elasticity of employment to growth. Indeed, highly educated workers form now the majority of new entrants in the labor market and raising the overall employment elasticity calls for policy and programs aimed at reducing the unemployment of that particular category of labor.

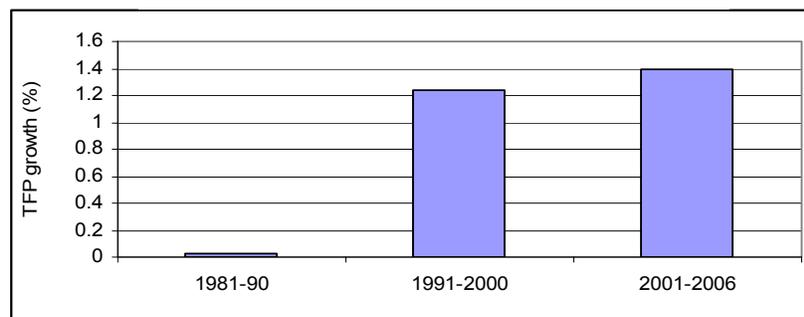
### FASTER PRODUCTIVITY GROWTH TO BOOST GDP GROWTH

2.2. The first argument for increasing the pace of structural transformation is the need to boost growth beyond 5 percent in order to further raise income and reduce unemployment. Thanks to trade openness, total factor productivity increased and the country's GDP growth averaged 5 percent from 1997 to 2007, despite several exogenous shocks. But during that period, Tunisia sustained, rather than improved, its long term economic performance. To increase growth beyond 5 percent, a faster productivity growth driven by faster structural transformation and greater private investment are necessary.

2.3. Productivity dynamics can be captured through total factor productivity (TFP). TFP is a proxy for knowledge and innovation. In a neoclassical growth accounting framework, it captures the changes in growth not driven by the growth in labor and capital inputs. There is now a consensus that differences in growth across nations is mostly explained by differences in TFP growth.

2.4. Tunisia witnessed a structural break in the evolution of its total factor productivity (TFP) in the 1990s (Figure 8).<sup>15</sup> In 1995, trade protection vis-à-vis the EU has gradually been unraveled as part of the Tunisia-EU Association Agreement (AA) and by January 2008, the free trade area with the EU was completed for industrial goods. These reforms, supported by earlier investments in human and physical capital have effectively led to a sharp increase in productivity (World Bank 2008a). Annual growth in TFP averaged 1.24 percent in the 1990s and 1.40 percent in 2000-2006. As result, TFP's contribution to GDP growth jumped to 43 percent in 2007.

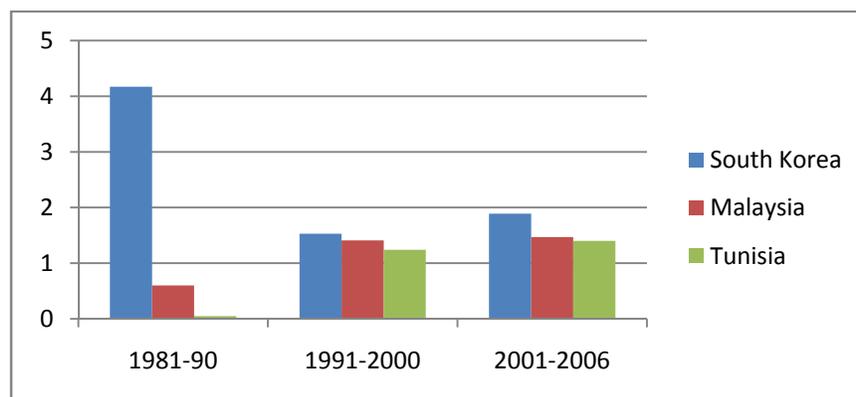
Figure 8 - Total Factor Productivity growth (%)



<sup>15</sup> TFP is a proxy for knowledge and innovation. In a neoclassical growth accounting framework, it captures the unmeasured sources of growth after taking into account the growth in labor and capital inputs. There is now a consensus that differences in growth across nations is mostly explained by differences in TFP growth.

2.5. Tunisia's TFP growth remains however way below Korea's and slightly below Malaysia's (Figure 9). South Korea witnessed significant GDP growth over the last three decades thanks to rapid TFP growth. In the 1980s, TFP growth reached a record level of 4 percent per annum! This explains why Korea outperformed most countries with which it has similar capital and labor endowments (such as Brazil).

Figure 9- Annual growth in TFP: Tunisia versus Malaysia and South Korea (in %)



2.6. Can TFP increase sustainably without boosting capital investment? Not in general because capital intensity is a critical determinant of the level of *labor* productivity.<sup>16</sup> Furthermore, investment in new machinery often triggers changes in the organization of the production process and requires skill upgrading, thus a more efficient interaction between labor and capital. In its quest for higher productivity, Tunisia must therefore seek to increase private investment as well. Table 5 shows the evolution of investment over the last 7 years. Private investment, increased from 12.3 percent of GDP in 1997 to 14.2 percent of GDP in 2007, below that attained by other successful emerging countries and, at current levels, insufficient to sustain the productivity growth that has driven recent economic expansion. The world's fastest growing economies have displayed high investment rates. China's investment rate since the early 1990s is 43 percent. India's rate is almost 37 percent. Other fast-growing economies in East Asia, such as Vietnam and Singapore have investment rates hovering in the range 29-34 percent.

2.7. The Growth Commission report (2008) indicates that fast-growing economies typically have investment rates above 25 percent. In Tunisia, the evolution of domestic investment versus FDI is quite contrasting. The former followed a declining trend since 2003.<sup>17</sup> In contrast, annual FDI flows averaged 2.2 percent of GDP in 1996-00, 2.6 percent of GDP in 2002-05 and 5 percent of GDP in 2006-2008 (Table 5).

<sup>16</sup> This can be illustrated by the identity:  $Y/L = Y/K * K/L$ , where Y is production, L is labor and K is capital. Labor productivity is the product of capital productivity, or how efficiently capital is being used within the economy, and the capital-labor ratio, or how much capital each worker has to work with.

<sup>17</sup> The sharp decline in 2006 probably reflects a statistical error.

**Table 5- Trends in investments (% GDP)**

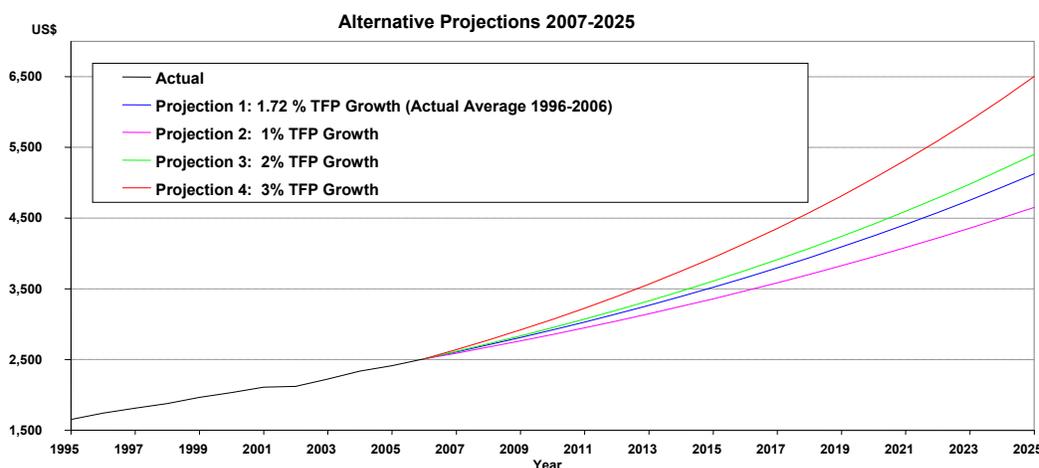
	2002	2003	2004	2005	2006	2007	2008*
Gross investment ratio	25.2	23.4	22.8	22.2	23.4	23.9	24.7
Gross private investment	14.2	13.6	13.0	12.7	13.3	14.4	15.4
Foreign direct investment	3.3	2.5	2.4	2.9	3.8	4.7	6.5
National private investment	10.2	11.1	10.6	9.8	2.3	9.6	8.9

Note: Figures for FDI in 2006 do not include the TND 2.972 billion (US\$2.35 billion) for the partial privatization of Tunisia Telecom; Figures for 2008 are preliminary and subject to possible (downward) change.

Source: INS/ MDCI

2.8. In any case, for Tunisia to succeed in converging with the lower tier of OECD economies by 2025, its productivity growth would need to catch up with the best performers in the world. Figure 10 projects real GDP per capita for Tunisia for the years 2007 to 2025 using different assumptions for the growth rate of TFP. Clearly, a TFP growth similar to that of the past 10 years (projection 1) will allow Tunisia to reach only a GDP per capita of US\$5126 in 2025. This is lower than Mexico's GDP per capita in 2007. A robust increase in per capita income will require a TFP growth close 3 percent.<sup>18</sup> Tunisia would then reach a GDP per capital of US\$6502 in 2025 (2.5 times the level of 2006). The next question is what strategy and policy option could help Tunisia realize such performance.

**Figure 10- Tunisia Real GDP Per Capita (2000US \$)**



## **FASTER STRUCTURAL TRANSFORMATION TO REDUCE UNEMPLOYMENT**

2.1. The second key argument for accelerating the structural transformation of the productive system is the need to increase the elasticity of employment to growth. Tunisia has managed to successfully break into global light manufacturing networks since the 1970s and this has allowed the country to diversify its production base (away from oil) and to create massive formal low-skilled jobs, especially for women. Today however, the majority of new entrants into the labor

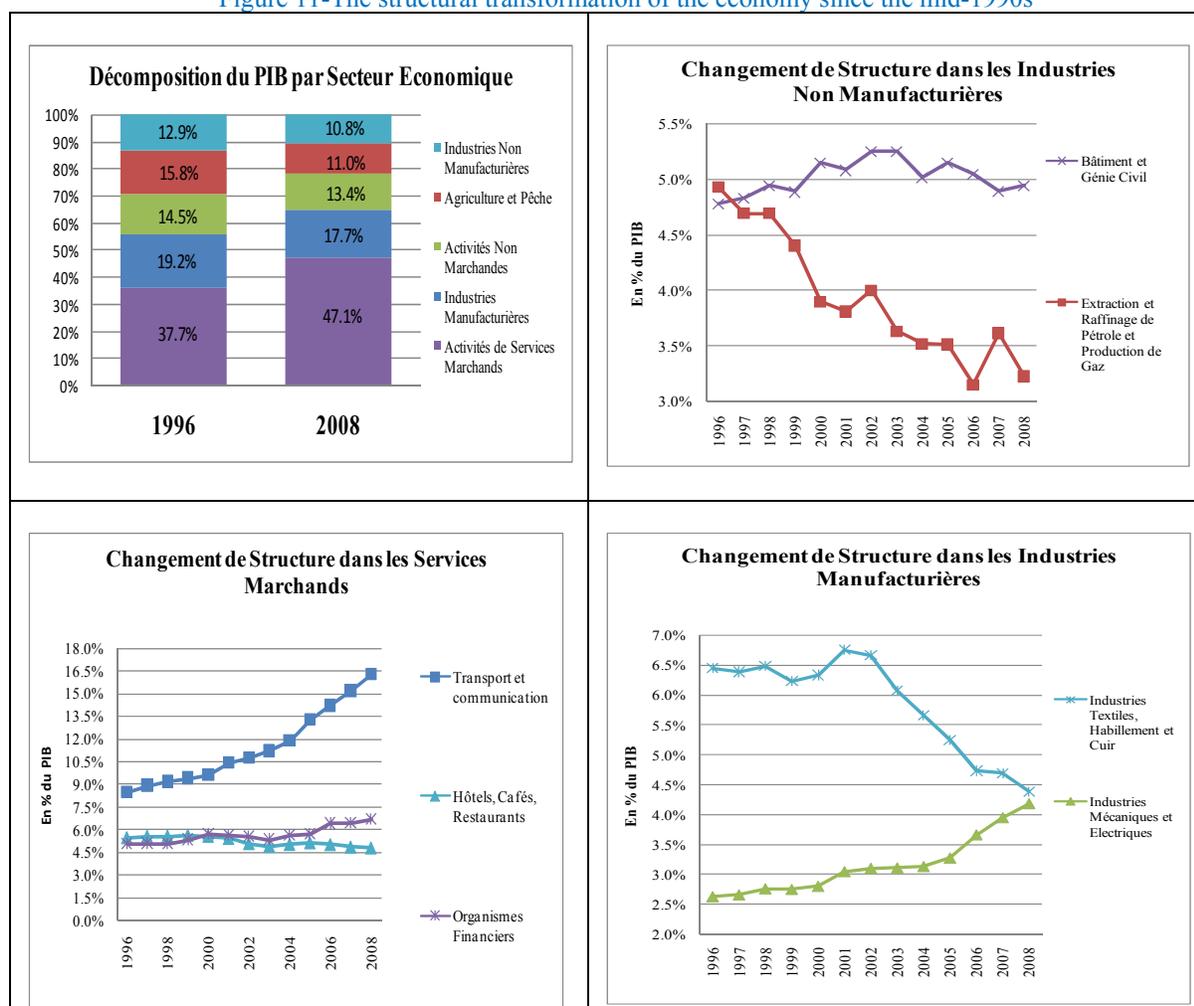
<sup>18</sup> Note that for all 4 projections, capital, labor and population were assumed to grow at their 1996-2006 average growth rates for Tunisia, which are 3.61 percent, 2.97 percent and 1.12 percent, respectively.

market have a university degree and the production structure is not suitable to absorb them. A gradual transformation of traditional sectors into higher-value-added, knowledge-intensive sectors as well as increased investments in new/emerging technology-intensive sectors will be needed to reduce unemployment.

## Current production structure

2.2. Over the last 30 years, Tunisia has witnessed two waves of economic structural changes. The first wave of transformation entailed a diversification away from oil toward light manufacturing and tourism in the 1970s and 1980s. Since the mid-1990s, major shifts occurred with the manufacturing and the services sectors (Figure 11). Within the former, the electrical and mechanical sector emerged and is set to replace textiles and clothing as Tunisia's largest exporting sector. Within the services sector, the communications and transport sector has become prominent, thanks to double digit growth in information and communication technologies (telecommunication, software and ICT-enabled services such as call centers).

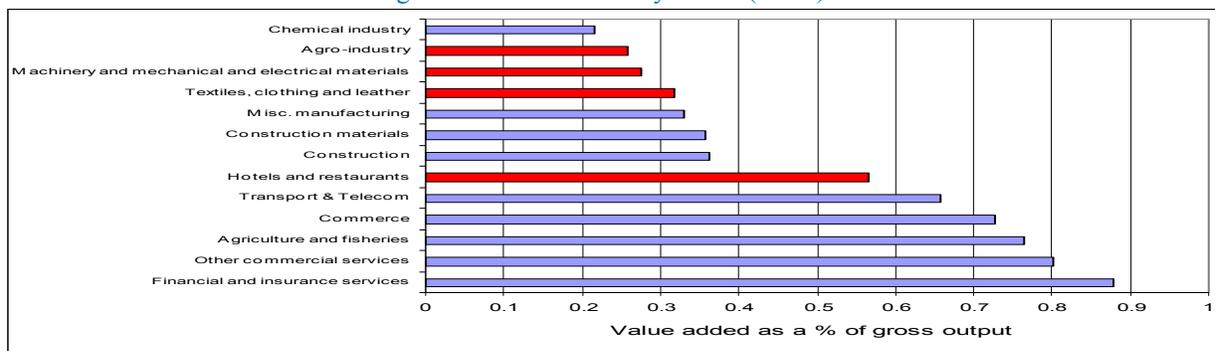
Figure 11-The structural transformation of the economy since the mid-1990s



Source: Institut National des Statistiques, Tunis

2.3. In terms of trade orientation, textiles and clothing and the mechanical and electrical engineering are Tunisia’s largest exporters, making up about 60 percent of total exports of goods. More than 90 percent of workers in these industries are sub-contractors working in vertical integration with production networks in Europe. As Figure 12 shows, exporting industries have low value-added rates and are subject to stringent competition in European markets.

Figure 12- Value Added by Sector (x 100)



Source : Institut National des Statistiques, Tunis

### Current employment structure

2.4. Table 6 shows the structure of employment in Tunisia’s economy. According to the INS, the economy employed 3,085,142 persons in 2008. Agriculture made up 18.3 percent of total employment, manufacturing 19.9 percent, commercial services 38.8 percent and public services 22.9 percent. Within manufacturing, the two largest exporting sectors, namely textiles and clothing and mechanical and electrical engineering dominate. Textiles and clothing employs about 264,000 workers, i.e. 48 percent of manufacturing jobs and 8.6 percent of total employment. Thanks to double digit growth in both production and exports since the late 1990s, the mechanical and electrical sector now employs 98,000 workers (3.2 percent of total) against less than 15,000 in 1997. It is estimated that close to 50 percent of workers in that sector are however in the electrical wiring segment, a low value-added activity.

2.5. The services sector is Tunisia’s employment reservoir however. It accounts for close to 60 percent of total employment. Within it, construction (12.3 percent of total employment) and commerce (11.5 percent) dominate, while sectors intensive in university graduates such as telecommunication and transport (5.7 percent) and banking and insurance (0.9 percent) contribute more modestly to job creation. In the public administration (706,000 employees), education and health sectors dominate.

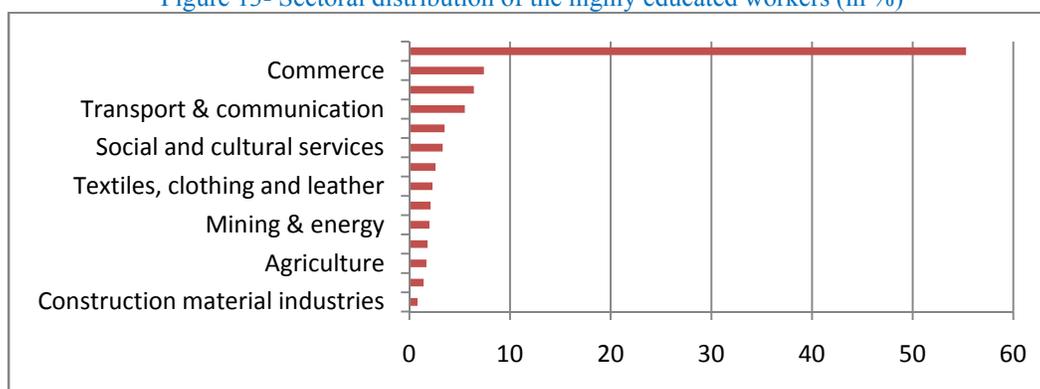
2.6. What are the sectors which currently employ the largest proportion of the pool of workers with post-baccalaureate diploma (“highly educated workers”)? Figure 13 shows that more than 55 percent of Tunisia’s highly educated workers are employed in public administration. In fact, close to 80 percent of this type of workers are employed in 5 sectors: the administration (55.3 percent of total), commerce (7.4 percent), real estate (6.4 percent), transport and communication (5.5 percent) and banking and insurance (3.5 percent). The other sectors absorb a very tiny share of the pool of highly educated workers.

**Table 6- Sectoral composition of employment**

Sector	Total	
	Number of workers	%
<b>Agriculture</b>	<b>565 872</b>	<b>18,3%</b>
<b>Manufacturing industry</b>	<b>615 448</b>	<b>19,9%</b>
<i>Agro-industry</i>	<i>66 400</i>	<i>2,2%</i>
<i>Construction materials industry</i>	<i>37 336</i>	<i>1,2%</i>
<i>Mechanical and electrical industry</i>	<i>98 495</i>	<i>3,2%</i>
<i>Chemical industry</i>	<i>26 857</i>	<i>0,9%</i>
<i>Textiles, clothing and leather</i>	<i>264 052</i>	<i>8,6%</i>
<i>Diverse industries</i>	<i>87 953</i>	<i>2,9%</i>
<i>Mining and energy</i>	<i>34 355</i>	<i>1,1%</i>
<b>Services</b>	<b>1 197 623</b>	<b>38,8%</b>
<i>Construction and civil engineering</i>	<i>378 429</i>	<i>12,3%</i>
<i>Commerce</i>	<i>353 445</i>	<i>11,5%</i>
<i>Transport / Communications</i>	<i>177 386</i>	<i>5,7%</i>
<i>Hotels &amp; Restaurants</i>	<i>121 707</i>	<i>3,9%</i>
<i>Banking &amp; insurance</i>	<i>26 478</i>	<i>0,9%</i>
<i>Real Estate (“travaux immobiliers”)</i>	<i>110 993</i>	<i>3,6%</i>
<i>« Not declared »</i>	<i>29 185</i>	<i>0,9%</i>
<b>Administrative Services</b>	<b>706 199</b>	<b>22,9%</b>
<i>Socio-cultural services</i>	<i>137 551</i>	<i>4,5%</i>
<i>Education/Health/Administration</i>	<i>568 648</i>	<i>18,4%</i>

Source : Institut National des Statistiques, Tunis

**Figure 13- Sectoral distribution of the highly educated workers (in %)**

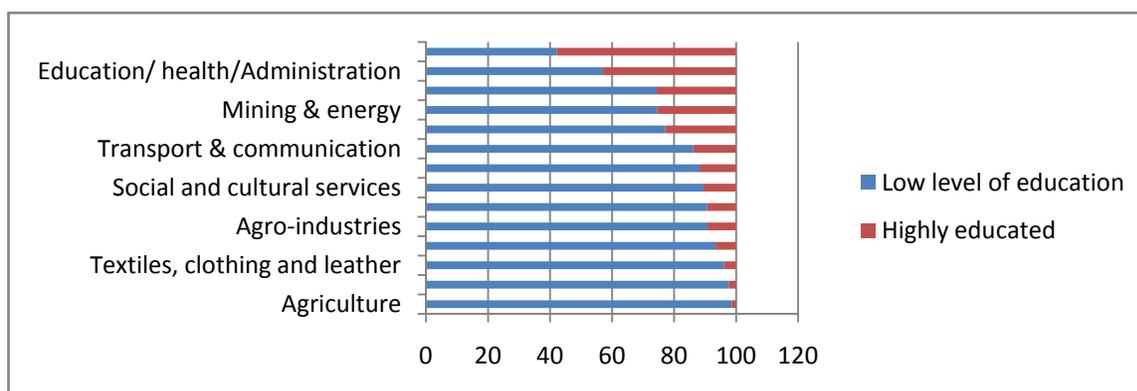


Source : Institut National des Statistiques, Tunis

2.7. To better capture the “space” available for highly educated workers in each sector, it is important to take into account the size of the sector itself. Figure 14 breaks down sectoral employment by level of education, distinguishing two levels: higher education or post-baccalaureate education (university degree or degree delivered by the science and technology institutes) and lower level of education (below baccalaureate). Clearly, banking and insurance is

the only sector where employees with post-bac degree constitute more than 50 percent of total workers. Four other sectors have a proportion of highly educated above the national average (14 percent): administration (43 percent), real estate or “travaux immobiliers” (25.6 percent), mining and energy (25.5 percent) and chemical industry (23 percent). All the other sectors, notably in manufacturing, have a proportion of highly educated lower than 14percent.

Figure 14- Level of education of workers by sector (in %)



Source : Institut National des Statistiques, Tunis

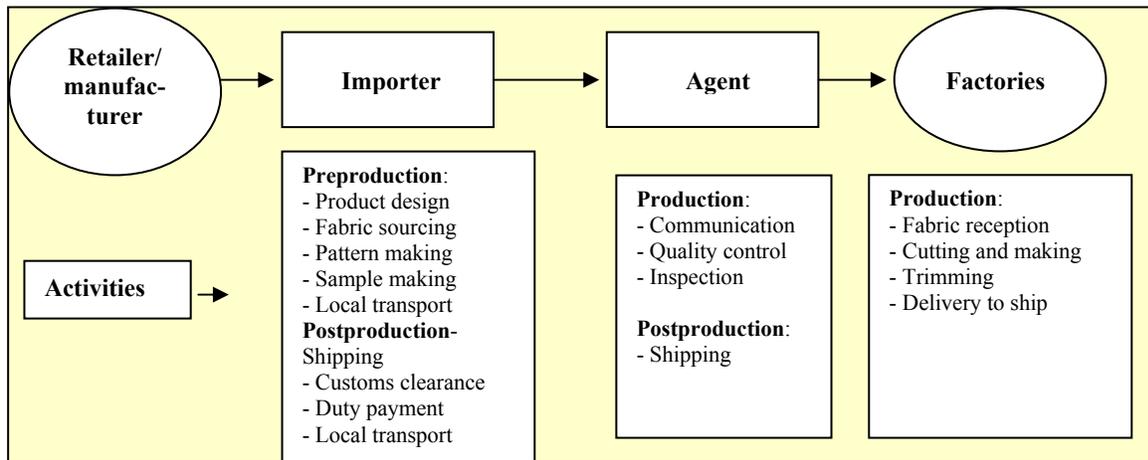
2.8. We thus observe an important mismatch between the current production structure and the profile of job seekers. The former employs only 14 percent of highly educated workers nationally. In other words, 86 percent of the 3.1 million current workers have a level of education below high school diploma. This percentage is even higher in the manufacturing sector (92.5 percent). Yet, Tunisia boasts a very large number of university graduates (55,000 in 2008) the large majority of which enter the labor market each year. Creating more space in the productive system to absorb these job seekers is the challenge for the foreseeable future.

### Creating more space in for highly educated in traditional sectors

2.9. Tunisia needs a two pronged strategy in order to reduce the unemployment of university graduates. The first component of such strategy is to promote investment in newer, knowledge-intensive sectors. The second component consists of moving up the value chain in traditional sectors. Implementing the strategy calls for further deepening integration enhancing innovation and improving the investment climate (see the rest of the report).

2.10. At the sectoral/firm level, however, a change in the business model will be needed. The textile sector illustrates this. Today, although the government is encouraging a movement up the value chain and some progress has been registered, this sector is still largely confined to simply assembling inputs received from clients in Europe. As a result, Tunisian producers capture only a very small fraction of the total value added of the garments produced. If Tunisian firms succeed in moving up the value chain in large numbers, they will provide directly to customers (retailers or manufacturers) pre-production services such as product design and pattern and sample making, and post-production activities such as shipping and local transport (Figure 15). This would increase demand for skilled labor to perform these activities and the return on specialized tertiary education in a virtuous circle.

Figure 15 - The garment supply chain



Source: World Bank Regional Textile Report, 2006

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### 3. STRENGTHENING THE INNOVATION SYSTEM

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3.1. Boosting productivity growth will require strengthening the innovation system and deepening trade integration to enhance technological creation, adoption and adaptation. This chapter examines Tunisia's innovation efforts, performance, challenges and draws lessons from international experience and proposes some strategic reform options. The next chapter looks at global integration issues that are also crucial to the country's performance in the area of innovation.

#### INNOVATION: CONCEPT AND DETERMINANTS

3.2. In practical terms, innovation can be regarded as consisting of (i) new products and services; (ii) new processes; (iii) new ways to penetrate new markets; (iv) new supply sources or distribution methods, and (v) new industries (Schumpeter 1912/1961, p.66). Defined as such, it involves two sets of activities: technology *creation* from a global perspective and technology *adoption* and *adaptation*. Technology creation is often conducted by large corporations and small, creative firms that are approaching the global technological frontier. In contrast, adoption and adaptation can be done by any enterprise, including those that are relatively far from the global technological frontier and not ready to engage in technology creation.

3.3. Innovation is thus a multifaceted phenomenon. A number of factors influence the performance of an innovation system. The latter consists of the network of institutions, rules and procedures that influences the way a country acquires, creates, disseminates and uses knowledge. The actors of the innovation system include universities, public and private research centers, enterprises, consulting firms, policy think tanks, policymakers and others. The innovation performance of a country depends on how these actors relate to each others as elements of a broader system.

3.4. A part from openness to global trade and investment, which is a universal requirement for innovating in today's world, the specific determinants of innovation vary from country to country. There are some commonalities however. These are (i) the quality and quantity of human resources devoted to science and technology; (ii) investment in research and development (R&D) by the public and private sectors; (iii) FDI under certain conditions; (iv) availability of research valorization, knowledge diffusion mechanisms (such as techno parks), (v) market competition; and (iv) property right protection.

3.5. It should be noted that the relationship between innovation and some of the factors of the above list can be complex and not systematic. This is the case of competition and FDI. As regards competition, some empirical studies found an inverted U-shaped relationship with innovation (see for instance, Aghion and Griffith 2005). The usual explanation is that at initial levels of competition, the gain from innovation is large because relatively few firms innovate. So all firms scramble to innovate. As competition intensifies and a large number of firms are already engaged in innovation activities, further competition tends to reduce the pace of innovation. At the extreme, when R&D cost is high, higher degree of competition may not lead to more innovation depending on the degree of uncertainty attached to the result of the research and the extent of property right protection.

3.6. FDI can trigger a virtuous process of structural transformation but they do so only under certain conditions. The literature shows that countries can only benefit from positive spillovers from the FDI if entrepreneurship is well developed in the host country and if the absorptive capacities of the firms in the economy are high. The development of China's electronic appliance sector is an illustration. If foreign company affiliates operate in 'enclaves', i.e. isolated segments of the economy where technologies, products, and plant sizes are different from the rest of the economy, spillover effects may be muted. In Tunisia, FDI inflows largely go in the offshore sector which is disconnected from the rest of the economy. As such, industrial upgrading may occur but no meaningful technological spillover effects can be expected.

### TUNISIA'S INNOVATION SYSTEM: STRENGTHS AND WEAKNESSES

3.7. Tunisia has an elaborate system of innovation and technical support to firms composed of 8 sectoral technical centers designed to support firms in 8 sectors, numerous research centers (130 research laboratories and 600 research units), numerous technoparks to promote innovation, industrial firm clustering and synergies between universities, research and production, an institute for standard and property right protection, an agency for the promotion of research, innovation and firm creation, an agency for industrial promotion (API) and an agency for agricultural investment promotion (APIA).

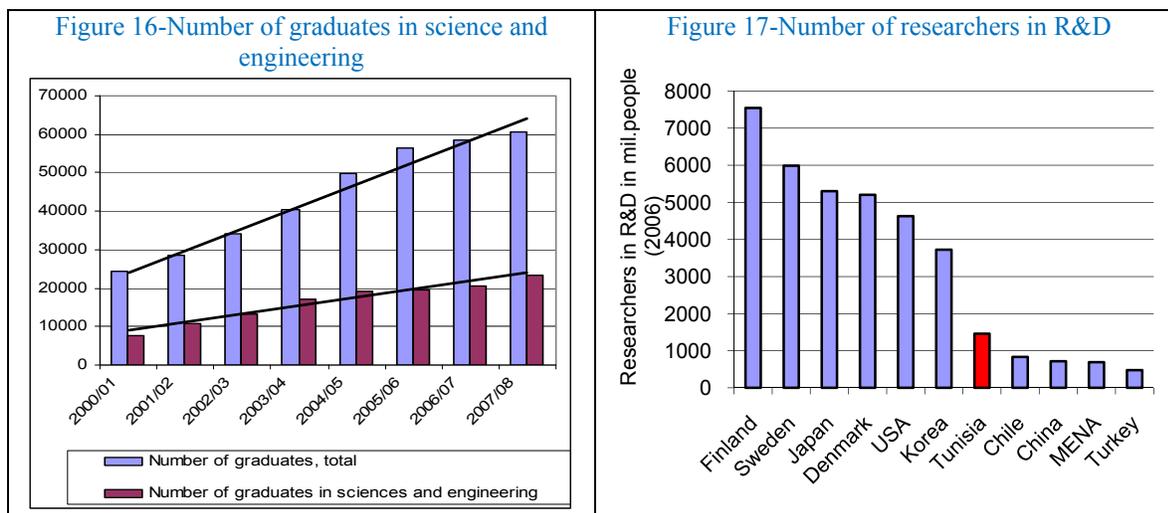
3.8. The above institutions are complemented by a number of public programs, aimed providing incentives for innovation (often among other objectives). These include the "mise a niveau" (upgrading) and industrial modernization programs that attempt to support investment in new technology and enhance organizational and managerial capacity of firms, the *Prime d'Investissement en Recherche et Développement* (research investment premium), the *Programme National de Recherche Intégrée* (a program that seek to link a research unit, a firm and a technical center around a specific project), the *Programme de Valorisation des Résultats de la Recherche* (research valorization program) and the *Régime d'Incitation dans le domaine des Technologies de l'Information* (a fund dedicated to innovative projects in the area of information technology).

3.9. One can attempt to capture Tunisia's innovation effort and performance through a few indicators/factors typically considered important for innovation in the literature (discussed above). We consider here the human resources in science and technology, R&D investment efforts, FDI inflows to industries and availability of knowledge diffusion schemes such as techno parks.

3.10. **Human capital in science and technology.** Tunisia's higher education system (universities, engineering schools, higher technician schools, etc.) produces a large number of university graduates, in all fields. In both general and science and technology fields, the number of graduates has increased rapidly over the last 8 years (Figure 16). In terms of number of researcher per million people, Tunisia lags significantly behind the world leading innovators (Finland, Sweden, Japan, Denmark, the US and Korea) but is above the regional average. Tunisia's number of researcher per million of people is also above Chile's.

3.11. Even if a large pool of researcher is an asset for any country, it is the quality of the researchers and their effective utilization in the productive system (including by the private sector) that is determinant. In this regards, Tunisia's researchers seem largely confined to the public sphere and have little linkage with the productive sector. In terms of the quality of education in science and

technology, it seems urgent to align it to the needs of emerging and strategic sectors. For instance, Tunisia's new industrial strategy calls for promoting sectors such as electronics, aeronautics and technical plastics. The education system needs to adapt and supply engineers and technicians in these new fields.



Source: Ministry of Higher Education and Research, Tunis

3.12. **Investment in R&D.** R&D is a public good. Its social return is greater than can be captured by individual private investors and its value to society is not reflected in market prices. Romer (1990), Grossman and Helpman (1991), Aghion and Howitt (1992) have shown the crucial role of R&D in productivity growth. R&D's positive spillovers and potential effect on productivity point to the importance of government support.

3.13. According to official sources, Tunisia has invested about 1.25 percent of its GDP in R&D in 2009. In 2006, spending was 1.06% of GDP and Tunisia was above Morocco, Chile and Turkey but slightly under the MENA average. One must not read too much out of these numbers however, since there is no international uniform way of classifying R&D expenditure. In any case, despite nontrivial support from the government, the result in terms of patent registration and concrete utilization of the results of research by firms are limited even if some improvements are noticed in the most recent years. In 2008, the number of international patent application was 26 in total, of which 10 in the US (against 2 in 2006), 4 in France, and 4 at the European Patent Office. This result reflects some key weaknesses in the R&D system:

- R&D spending is scattered around a large number of themes and public institutions (ESTIME 2007). The criteria for distributing R&D spending are unclear and no clear alignment with national priorities or any performance criteria is evident. It is not aligned with any apparent performance indicator either. As a result, budgets received by individual laboratories are limited, so is production. Furthermore, the incentive/reward framework for researchers is biased in favor of producing and publishing personal academic papers, not focusing on research topic directly utilizable by the private sector (Proceedings of the National Days of Scientific Research and Technological Innovation 2007).
- The objectives of some of a large number of R&D programs overlap to the effect that some funds are under-utilized, example the research investment fund. This creates waste and inefficiencies.

- There is little collaboration between research centers and the private sector. In the IEQ's latest enterprise survey, 40 percent of firms declared having invested in research but only 15 percent of those have collaborated with universities. Three factors play a key role in this poor outcome: (i) limited demand from the private sector due to its predominant specialization in low value-added sectors and sub-contracting; (ii) a mismatch between the nature of public research and the needs of firms and (iii) complex bureaucratic procedures.

Figure 18-Total R&D expenditure as a% of GDP

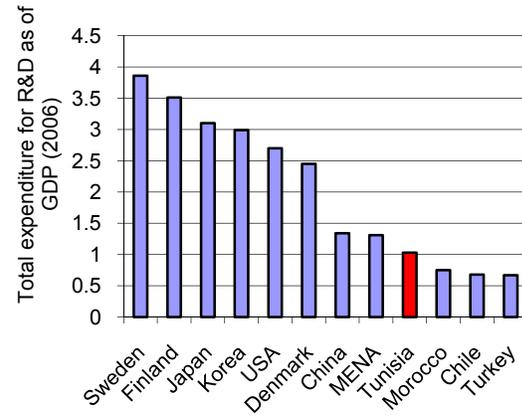
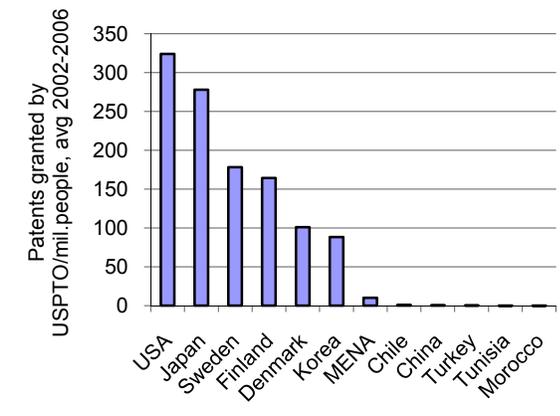


Figure 19-Patent granted by USPTO/million people



3.14. **FDI inflows.** In terms of FDI, Tunisia is one of the best performers in the MENA region. Net FDI inflows reached 3 percent of GDP in the period 2000-2007, against a regional average of 2 percent (Figure 20). However, from an innovation standpoint, the sectoral orientation/allocation of FDI is equally if not more important than the volume of inflows. In that respect, although the sectorally disparate allocation of FDI in Tunisia is a sign of general attractiveness of the country to investors, more FDI to the higher-value, technology-intensive sectors would have led to higher productivity than the status quo. Today, more than 50% of FDI inflows to Tunisia go to the energy sector and more than 50% of FDI inflows to the manufacturing sector go the low value-added textile and clothing and mechanical and electrical sectors. Tunisia's chemical industries and "diverse" industries attract relatively less FDI.

Figure 20- FDI inflows (% GDP)

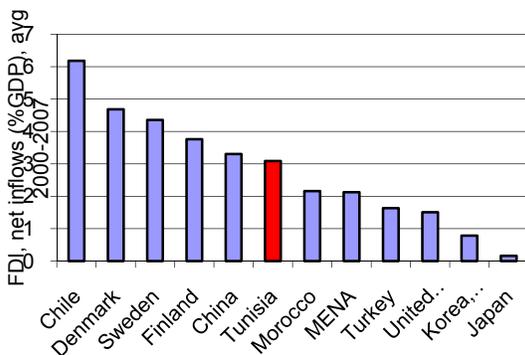
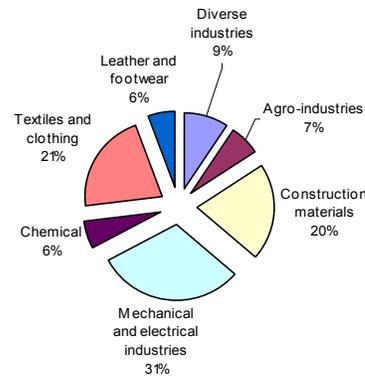


Figure 21-Sectoral allocation of FDI in manufacturing



3.15. **Techno parks.** Tunisia has been investing constantly in the area of technoparks since the late 1990s. The objective is to create jobs and foster an innovation dynamics through an integration

of research, production and human capital around a specific product/ sector in a specific geographical region. Through a direct valorization of research, the techno parks can be an important tool for incubation of innovative activities. Tunisia's techno parks focus on many areas, including textiles, agro-industry, mechanics and electronics, information technologies, sustainable development (water, energy, and environment), agriculture and health. Seven techno parks now exist. The techno park of El Ghezala, specialized in information technologies, seems to be a real success. By end of 2008, 65 companies employing 1443 people of whom 95 percent have a higher level of education were operating in the park.

3.16. Industrial clusters have helped some countries improve their innovation performance by integrating production, research and education in the same place, thus allowing a fast diffusion of new technologies and innovation (Silicon Valley). However, international experience shows that clusters are complex institutions and success is not always guaranteed. While Tunisia seems to generalize clusters to many areas and products, international experience suggests that some conditions are necessary for success. For instance, the production process should be breakable into many different interdependent segments, the product must be easily transportable, and the location of the cluster should be endowed with a dense population of skilled entrepreneurs operating in a favorable investment climate.

#### LESSONS FROM INTERNATIONAL EXPERIENCE

3.17. International experience could be useful for Tunisia. A recent World Bank report on technological development (World Bank 2008c) identifies two general lessons that can be born in mind.

- **Openness, international mobility of human capital and purchase of technologies are crucial for technological progress.** The report shows that the progress made by leading developing countries in the area of innovation reflects greater exposure to and familiarity with foreign technologies. Global imports of high tech products and FDI in high tech sectors have doubled since the beginning of the 1990s. Greater commercial contacts between business people in developed and developing countries, sometime facilitated by migrants, have been crucial in fostering technological progress in developing countries.
- **There is a large potential for technology and knowledge diffusion within developing countries.** In most developing countries, weak knowledge diffusion, often due to costly or inefficient backbone services (telecommunication, transport, etc.), leads to large gaps in technological adoption across firms/ sectors and to lagging technological development overall. Typically, a few large firms operating at the global technology frontier cohabitate with a large number of firms operating below one fifth of the optimal productivity level. For instance, India has a first-class IT sector, yet less than 10 percent of the population in rural areas had access to telephone in 2007. Huge productivity gains could be obtained by encouraging technology and knowledge diffusion within developing countries.

3.18. Another World Bank report, more specific, reviews and draws some lessons from the experience of 10 developing countries that have successfully adapted new technologies to catch up with the developed countries in a particular industry.

3.19. The case studies include: (a) India's software industry that is growing annually by more than 30 percent and now claims about 6 percent of global outsourced IT; (b) Taiwan's electronic sector which now produces about 6 percent of the world's semiconductors; (c) Malaysia's electronic industry which has become one of the world's largest exporters of semiconductor devices, electrical goods and appliances; (d) Malaysia's processed palm oil industry which has made Malaysia a global leader in processed oils and fats after 30 years of crude oil exporting; (e) Chile's salmon industry which has become the third largest in the world with a global share that grew from 1.5 percent in 1987 to more than 35 percent; (f) Chile's wine industry that is now the world's fifth-largest exporter and (g) Kenya's cut flower industry which has become the leading exporter in Europe and is the world's third-largest. Although the experience of each country is unique, we want to highlight four commonalities in the case studied:

- **Strong political commitment.** Governments resolutely valued and supported technological learning in the favored industries (for different reasons).<sup>19</sup> In some cases, the commitment took the form of a heavy involvement of the government in the management of the export industry (early exporters operated in government incubators) at the initial stage of development of the sector: Taiwan used that approach in its electronics sector. The cases of salmon in Chile and of oil palm and electronics in Malaysia are other examples where political commitment has been very strong. In the remaining cases, where the industry was not part of a national vision and a closed economic environment prevailed, politicians valued the contribution of technological learning and did where they could to facilitate it. Commitment grew with the economic visibility of the industry, or when social concerns were raised.
- **The support was directed to highly performing sectors.** Government targeted and nurtured the specific industries that they found to be growing faster than others. In Chile, the government extended general support for horticulture but targeted the dynamic wine industry for direct or indirect public assistance to adapt new technologies and achieve exportability. Generally, governments offered the same level of public support to all exporters in the preferred industry and let the discipline of the market prevail. Within an industry, governments bestowed rewards on firms that performed well and penalized poor performers by letting them fall out of export competition;
- **The private sector was the driver and government facilitated.** The government played a facilitating role, especially in promoting adaptation and the diffusion of new technologies. Even in cases where the first firms were born in government incubators, as in the case of Taiwanese electronics and Chilean salmon, they were privatized as soon as they achieved commercial viability. Government then turned its attention to facilitation, coordination, and regulation. Instead of fostering conglomerates, Taiwan's government developed clusters of new firms each time an industry transitioned to independent technological development.

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<sup>19</sup> In some cases, commitment to export-led growth in a specific nontraditional industry was the key driver: electronics, palm oil, salmon, or wine for public support. In others, the need to secure foreign exchange was the motivation for supporting technological learning in industries deemed to have strong export potential: Kenyan floriculture and Indian software exports in their early stage of development are examples. Later the government supported them because they were an important source of export growth. Yet in other cases, the objectives were multiple. For instance, in Malaysia, the government considered the palm oil sector as a key instrument to not only generate foreign exchange revenues, but also fulfill reduce poverty.

- **Property rights and the rule of law were emphasized.** Without exception, property rights were protected and they played an important role in attracting multinational companies with new technologies, as well as domestic firms that sought to adapt those technologies to produce export-quality goods.

3.20. Finally, some insights can be gained from the experience of developed countries with regards to the strategy of innovation and technological development. One key lesson is that different countries have emphasized different drivers of innovation, depending on country context and capabilities. For instance, countries operating at the global technological frontier in many industries such as Finland and Sweden have relied heavily on R&D and training. Italy and Spain converged rapidly to high income levels through FDI and technological spillovers/transfer from the EU. The system of technical centers in Spain (they also exist in Tunisia) played a key role in enhancing the capacity of SMEs through clustering, networking and cooperatives. In contrast, in Japan and Korea, export and global competition served as a device for a demand for innovation at home and R&D followed. New Zealand emphasized business mentorship, competition policy and exports.

### **STRATEGIC OPTIONS FOR TUNISIA**

#### **Adopt a realistic and balanced innovation strategy**

3.21. In many emerging countries, there is a strong temptation to equate innovation with technological creation or high-tech industries, overlooking the importance of adoption and adaptation. Tunisia's productive sector, as in many emerging countries, is a combination of a handful of firms operating at or near the global technology frontier and a vast majority of small firms with very limited innovation capacity. Technological adoption and adaptation is the pertinent concept for most firms operating in the country. Tunisia's innovation strategy should emphasize not only technology creation but also technology adoption and adaptation. This strategic consideration is important because different definitions lead to different policies. The broad concept of innovation is in any case compatible with Tunisia's new industrial development strategy that identifies a few strategic sectors to support.

3.22. In the years to come, with heightened competition in the home market as well in foreign ones, innovation will be an important strategy for remaining competitive. Tunisia's integration strategy, so far largely based on price-competitiveness, has greatly served the country by inducing the development of the offshore sector and the creation of massive low-skilled jobs in manufacturing sectors. This has in turn helped Tunisia scrap poverty significantly, to one of the lowest in the MENA region. Price-competitiveness will however be no longer enough in the future. Firms will have to become much more innovative to remain competitive.

#### **Improve the efficiency and effectiveness of the innovation system**

3.23. Tunisia's existing innovation system is an asset as Tunisia embarks in a new phase in its development. The system should however be reformed and made more efficient and effective by addressing the following shortcomings:

- The institutional framework for innovation lacks visibility for investors because of the large number of institutions with overlapping mandates. Furthermore, the existence of innovation-supporting mechanisms with similar mandates and modus operandi (such as the innovation premium and the *mise a niveau*) implies that some funds allocated are

largely under-consumed (example the innovation premium). This creates waste and inefficiencies. A rationalization of the system is warranted; *largely under-utilized funds could be merged with others or closed. Regular evaluations should take place and new funds could incorporate a monitoring and evaluation system. These reforms could make the R&D incentive system more efficient*

- The criteria for distributing R&D spending should be revised with a view of aligning funding tightly with the countries' priorities and performance criteria: the priorities emphasized in the new industrial strategy but also strategic sectoral strategies in the area of water, energy, health, the environment, etc. Sectors and areas deemed strategic should be allocated more funding for researchers in those sectors/ areas to undertake research in the most favorable conditions. *A revision of R&D spending criteria is called for, with more emphasis put on adequately funding priority/ strategic sectors in industries and natural resource sectors such as water, energy and the environment. Selectivity is crucial to create critical mass and a strong international reputation in selected areas;*
- Finally, direct collaboration between researchers in public laboratories/universities and the private firms is limited and cumbersome. Three factors play a key role in this poor outcome: (i) limited demand from the private sector due to its predominant specialization in low value-added sectors and sub-contracting; (ii) a mismatch between the nature of public research and the needs of firms and (iii) complex bureaucratic procedures. *While the limited demand from the private sector is a structural element that will change significantly only as firms innovate more, the other two shortcomings can be overcome in the short term. A better match between public research and private sector needs can be sought by improving the functioning modalities of institutions that interface between research and production: example the Conseil Supérieur de la Recherche and business associations. Bureaucratic procedures can also be further simplified by reducing superfluous steps in the approval process.*

### **Reduce skills mismatch and enhance the flexibility of skills production and mobility**

3.24. Strengthening the innovation system requires enhancing the relevance and quality of skills supplied by the education system at large. To that effect, three challenges must be addressed. First, efforts aimed at improving quality and adjusting the content of education to the needs of firms must continue. Second, the education system must become more flexible and autonomous. Finally, a greater mobility of workers across the different sectors via more flexible labor regulation will be needed.

3.25. *Tunisia's education system produces graduates in massive numbers but a key issue to address is quality.* Education absorbs 20 percent of Tunisia's budget's (7 percent of GDP) and the system produces in massive numbers university graduates in general fields as well as in sciences and technologies. The government's ambition is to accelerate the rate of production of scientific and engineers in the years to come. <sup>20</sup> However, a key issue to address is quality. According to the IEQ 2008 firm survey, more than 60 percent of Tunisian firms struggle to find the right mid-level financial specialists, communication specialists, IT with specialized skills or high level technicians to accompany their development. This is consistent with Tunisia's poor ranking in international

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<sup>20</sup> A key issue will however be acquiring sufficient number of teachers in a timely fashion to train students. Given the time lag for training an engineer or technician in these sophisticated fields, recourse to foreign trainers may be necessary.

student assessments such as the PISA and TIMSS.<sup>21</sup> As the share of higher value-added, knowledge-intensive sectors increases, these skills mismatches will become an even more severe constraint to growth. A greater professionalization of education is called for instance through greater use of practical experiments. To improve quality at the higher education level, it will also be important to improve quality upstream and enhance selectivity at entry to university.

3.26. *Universities and engineering schools need more autonomy to produce the new skills that the economy will need.* Management procedures are today overly centralized, denying university managers the flexibility they need to take quick managerial decisions. The government has launched a reform to enhance the autonomy of universities and adopt the LMD system (Licence-Master-Doctorat as in the US). A new law stipulates that universities will be able to compete for private contributions, be it through contract research or fees. It is also sought to combine learning in universities and vocational training centers and in enterprises as well as increasing the time allocated to IT, entrepreneurship and English. These reforms are sensible but effective implementation will be crucial.

3.27. *A greater flexibility of the labor market is needed to enhance the mobility of talents across sectors and firms and reduce job informality.* The labor regulation stipulates that employers have total flexibility of hiring and firing up to 4 years, after which the complex and lengthy firing procedures kick in. In principle, this is a hindrance to labor mobility and productivity growth since talents can remain bottled up in stagnant sectors at the detriment of dynamic ones. However, in practice, labor market surveys suggest that the rigidity in firing laws is bypassed and has induced firms to offer precarious and short-term employment, sometimes informal jobs. Thus a main benefit of relaxing the rigidity of firing laws would thus be to facilitate formal job creation (i.e., change the composition of the labor mix between formal and informal) and firms' restructuring. The government could consider linking this reform with the introduction of some sort of unemployment insurance to provide a minimum of safety net to those who lose their job. Greater mobility is also sought through more effective intermediation. The Government has initiated a reform of ANETI, the public agency for placement, in order to increase its capacity to collect, treat and diffuse information on job opportunity and enhance the quality of services provided to job seekers and firms. The Government also plans to introduce new regulation that will formalize and regulate private intermediation.

### **Strengthen innovation financing mechanisms**

3.28. The role of the financial sector in accompanying innovation efforts is crucial. Les fonds d'amorçage and capital-risk play in particular a key role by providing investors and firm managers with capital to finance the development of products and processes. By assuring a better liquidity of capital-risk transactions, the stock market can play also an important role.

3.29. In Tunisia, the contribution of capital-risk companies to financing innovation is limited. The existing mechanisms, especially the SICARs (Societe d'Investissement a Capital Risque), predominantly finance firm creation and operate like classic banks by negotiating credit-like financing conditions (example, most transactions take the form of a "portage" in which the SICARs gets back its funds at a specified time with a fixed interest rate). Risk-taking is minimal in the

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<sup>21</sup> PISA stands for Program for International Student Assessment; TIMSS stands for Trends in International Mathematics and Science Study.

SICAR system. The SICARs account for only 1.2 percent of total financing distributed by the financial sector. A small number of firms benefit however from international funds or lines of credit dedicated to supporting innovation (e.g., European Investment Bank line).

3.30. To strengthen the capital-risk system, the legal framework of the SICAR was amended in 2009 in order to encourage risk-taking and investment in lagging regions (2009 Budget Law). However, additional reforms are needed:

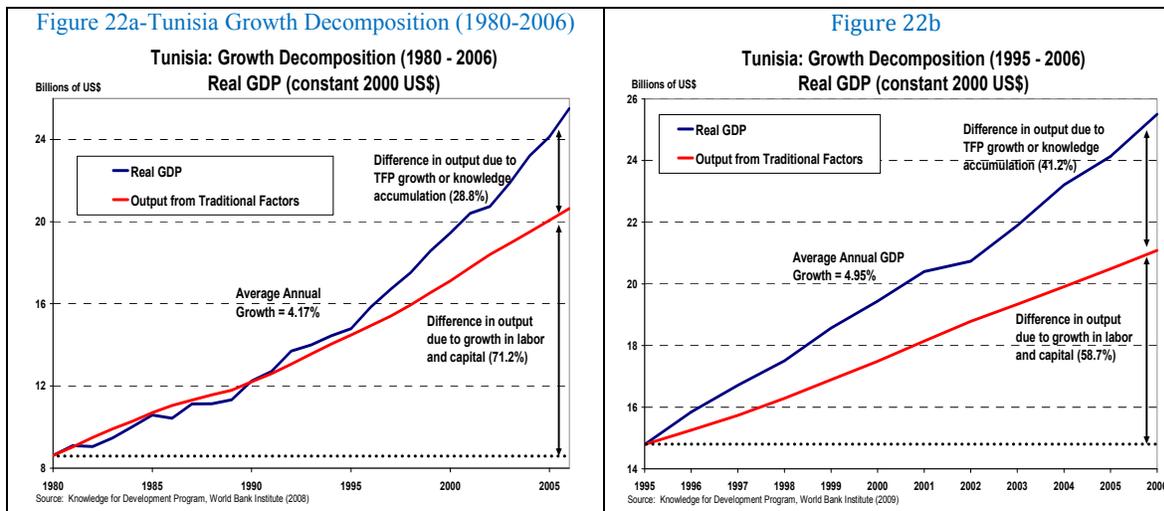
- *The legal framework could be further enhanced by transforming the SICARs into fund managers (Sociétés de Gestion de Fonds) under the supervision of the Conseil du Marché Financier (the stock market regulator). This reform should be accompanied by the adoption of international accounting rules in the area of capital-risk.*
- *The creation of a public fund open to private sector participation could be envisaged for activities considered high risk to stimulate l'amorçage in emerging high value added or strategic sectors.*

## 4. DEEPENING GLOBAL INTEGRATION

4.1. Global integration is a crucial channel of innovation through adaptation, learning and adoption of foreign technologies. In Tunisia, trade integration has been a key driver of technical progress and productivity growth since the mid-1990s (see World Bank 2008a). Through easier access to technology-intensive equipments and machineries, greater penetration of new markets and enhanced competitive pressure, trade integration has led to higher TFP growth, higher contribution of the latter to growth. Yet, the scope for further enhancing innovation and increasing productivity in Tunisia through integration is large. This chapter shows that two reform areas are crucial to realize the potential for further innovation and productivity growth: (i) enhancing regional integration and penetrating new markets in Sub-Saharan Africa and MENA and (ii) opening the capital account to allow Tunisian firms to expand in neighboring and other distant markets.

### INTEGRATION AND PRODUCTIVITY IN TUNISIA

4.2. Through various channels (easier import of technology-intensive equipments and machineries, competitive pressure at the firm level and FDI inflows), Tunisia's decisive move toward global integration since the mid-1990s has helped boost productivity and maintain growth (see World Bank 2008a). As shown in chapter 2, thanks to trade integration with the EU, a structural break occurred in the trend of Tunisia's TFP in the mid-1990s with TFP growth jumping from negative 0.1 percent in the 1980s to 1.24 percent in the 1990s and 1.40 percent per year in 2000-2006. Figures 22a and 22b show that such a rise in TFP led to a rising contribution of TFP to GDP growth. Figure 22a shows a decomposition of Tunisia's economic growth into the traditional factors of production, capital and labor, and TFP from 1980 to 2006. Figure 22b shows the same decomposition but for the period 1995-2006. Examination of these two figures clearly shows that 1995 was a breaking point, where productivity started to play a prominent role in growth in Tunisia over traditional factors. This explains why Tunisia has been able to grow in spite of sluggish private investment.



Sources: World Development Indicators

4.3. The contribution of trade integration to productivity growth can also be shown in a more microeconomic framework. At the firm level, productivity can rise because of adoption of new technologies (technical progress) or by greater efficiency in the use of existing technologies and inputs in production (technical efficiency). Productivity growth at the firm level can be decomposed as the sum of technical progress and technical efficiency. Such decomposition applied to Tunisia's manufacturing sector in the period 2000-2005 shows the following results (see table 7): i) productivity growth was mainly driven by technical progress, i.e., a movement of firms towards the technological frontier; ii) As they moved up the technological ladder by adopting newer technologies, firms technical efficiency generally deteriorated. The contribution of the manufacturing sector to growth would have been much higher if firms managed to increase their efficiency.<sup>22</sup>

Secteur/Sous-secteur	PT**	Efficienc	PTF*
Industries alimentaires et tabac	4,6	0,0	4,6
Industrie du textile, habillement et cuir	3,0	-4,5	-1,6
Industrie chimique, caoutchouc et des plastiques	2,4	-3,2	-0,8
Produits métalliques et électriques	2,1	-0,1	1,9
Matériaux de construction	4,5	-2,6	1,8
Autre industries	4,2	-5,5	-1,5

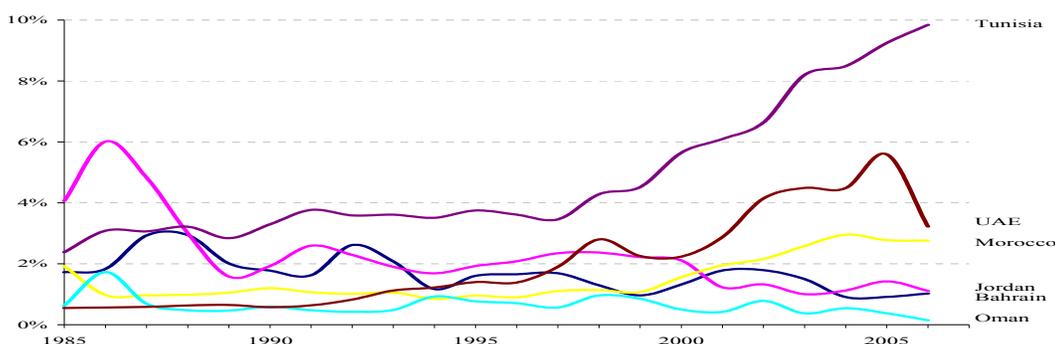
\*PTF : Productivité Totale des Facteurs

\*\*PT : Progrès Technique

Source :Bak staff calculations based on Institut National des Statistiques' data

4.4. Finally, trade integration helped significantly increase FDI inflows, from 2.2 percent of GDP in 1996-00 to 2.6 percent in 2002-2005 and to 5 percent of GDP in 2006-2008. The steady growth in FDI allocated to the mechanical and electrical engineering has made this sector the fastest growing and the most competitive sector in the economy. Tunisia is now one of the leading exporters of electrical components in Europe and is way above regional trends of exports of parts and components.

Figure 23- Share of parts and components in total exports

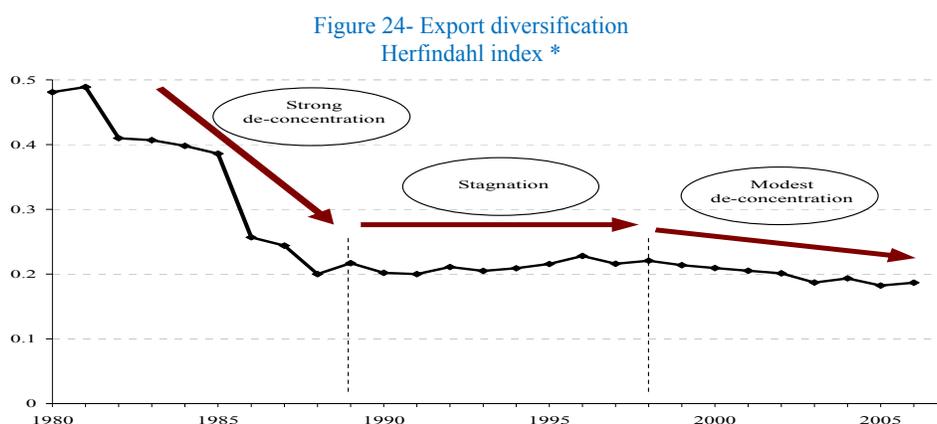


Source: World Bank (2008b).

<sup>22</sup> The *mise a niveau* program (see chapter 3), which during this period primarily focused on helping firms upgrade their equipment, seems to have helped increase technical progress. If the observation in the period 2000-2005 is valid today (data availability prevented from looking at the present period), program such as the *mise a niveau* should put much more emphasis on managerial and organizational progress than on equipment upgrading.

## ENHANCING REGIONAL INTEGRATION AND PENETRATING NEW MARKETS DURABLY

4.5. Tunisia has maintained its share in world goods markets since the mid-1990s: the apparel sector has resisted well to increasing world market competition following the phase-out of the Multi-Fibre Arrangement, and non-traditional export sectors, such as car parts and electronics, have been gaining traction. Moreover, after the push towards (product) export diversification seemed to have petered out during the 1990s, the structure of exports has gradually been becoming more diverse over the past decade, reflecting the shift into new production activities (Figure 24). However, while product diversification has occurred, Tunisia's markets are heavily concentrated. The EU accounts for 75-80 percent of Tunisia's exports. Only 8 percent of Tunisia's exports are shipped to Maghreb partners (of which 4 percent to Libya) while exports to non-Maghreb Arab partners, Sub-Saharan Africa and other countries are insignificant.



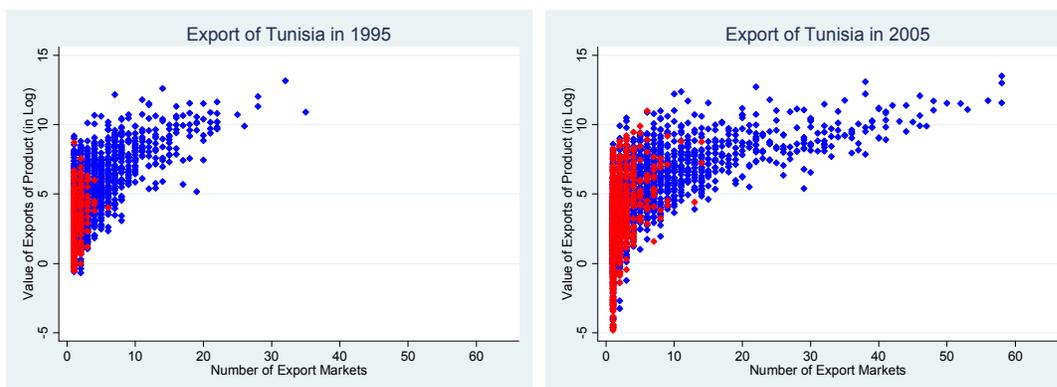
Note: \*: a higher index means more concentration.

Source: UNCTAD

4.6. Tunisian firms have dramatically increased their geographical market reach since the mid-1990s. The challenge is to penetrate new markets *durably*. Beyond reducing its vulnerability to the vagaries of demand in Europe, penetrating new market can significantly contribute to enhancing innovation and productivity: each time a firm penetrates a new market or starts new export activities competition forces it to enhance its organization, adapt to new tastes, adopt new technologies and improve product quality thereby increasing productivity.

4.7. The structure of exports has clearly become more diverse, reflecting a very diverse economy. As the graph below shows, Tunisian firms have also been able to penetrate a large number of markets, including with new products. From a low basis (15 percent of total exports), Tunisian exports to SSA and MENA have been growing at a much faster pace than for the EU over the past 10 years. However, the survival rate of individual firms in those markets is low. To firmly diversify its markets, Tunisian firms need to establish long-term relationships with the new markets in MENA and SSA.

Figure 25a and 25b - Number of markets (including new ones) exported in 1995 versus 2005

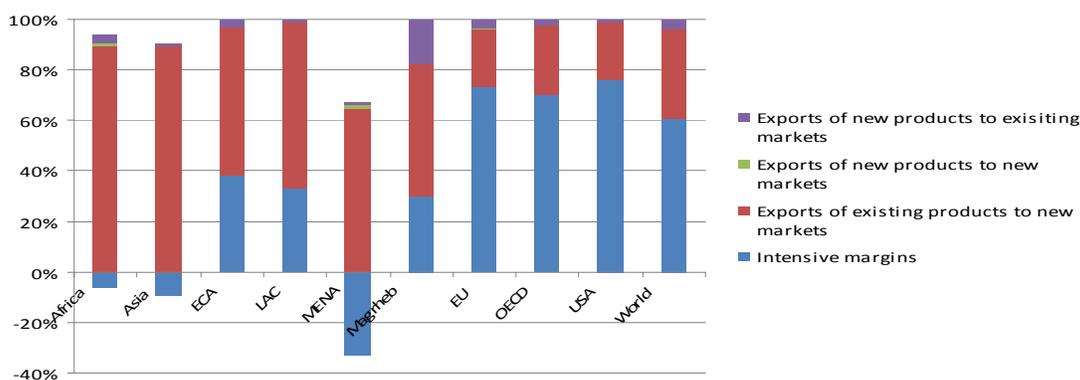


Source: COMTRADE data --- Note: The points in red capture the “new” markets.

4.8. In Figure 26, the sources of change in Tunisia’s exports to different parts of the world between 1997 and 2007 are depicted. For each export destination, four sources of changes in exports are distinguished: export of new products to existing markets, export of new products to new markets, export of existing products to new markets and export of existing products to existing markets (called intensive margin in this emerging literature).<sup>23</sup>

4.9. In the EU region, the rise in exports between 1997 and 2007 was mainly driven by increases in exports of existing products to traditional markets within the EU (France, Italy, Spain and Germany). However, over the last 10 years, large increases in export of new products to new markets occurred in SSA and the Maghreb. This suggests that these markets are considered as testing grounds for Tunisian firms, before confronting more demanding markets in Europe, the US and other regions. New market penetration in MENA was strongest for agri-business, mechanical engineering and chemicals. Exports of new products to new markets within Africa occurred only for mechanical engineering and agri-business. All exports to the USA were in the existing products category.

Figure 26 - Origin of changes in Tunisia’s exports, 1997-2007



Source: World Bank Staff based on Comtrade

<sup>23</sup> See Brenton, Pierola and Von Uexkull (2009) and Brenton and Newfarmer (2009).

4.10. It is because Tunisian firms do not stay durably in the new markets they penetrate that export market diversification is still slow. There are two main arguments advanced in the literature for explaining the limited diversification of exports from developing countries like Tunisia. First, firms in these countries tend to under-invest in discovery of new products because would-be first movers into export markets fear their initially high returns would be eroded by subsequent new entry, discouraging investment in new products (Hausman and Rodrik 2003). The policy implication of this line of argument is that governments should play a major role through industrial policies in order to stimulate discovery. For instance, Klinger and Lederman (2004) find that industrial policies that reduce the threat of imitation can be associated with increased discovery and diversification.

4.11. A different argument stems from the observation that, as seems to be the case for Tunisia, the problem is not the firms' inability to discover new products for exports, but their inability to sustain export activities durably. For instance, Brenton, Pierola and Uexkull (2009) find that lower-income developing countries do fairly well in generating new product exports, but a high proportion does not survive to maturity. Thus the question is more how to reduce extinction of export activities rather than generating new products. Thus policies that reduce the fixed costs of entering overseas markets and that reduce the variable trade costs (such as tariffs, cost of clearing customs, cost of conformity assessment to standards and norms in overseas markets and transportation costs) will thus help increase bilateral exports.

4.12. While the literature leaves a host of questions unanswered (see Brenton and Newfarmer, 2009), a unilateral, bilateral and plurilateral agenda of reforms aimed at reducing the fixed costs of entering overseas markets and staying durably there are called for through:

- *Reduce non-tariff barriers (NTBs) unilaterally and within a regional framework to enhance regional integration in MENA.* With the significant reduction in tariffs, NTBs are now the major hindrance to trade within the region. In Tunisia, some progress has been made and the NTBs were estimated to be lower than in Morocco and Egypt in 2008. However, they are much higher than in Jordan, Turkey, Romania and Bulgaria as well as in most middle-income countries in East Asia and Latin America. Because it is one of the most diversified and competitive economies in MENA, Tunisia should not only go further in reducing its own barriers but also play a lead role in reducing NTBs within the Union of Arab Maghreb (UMA) and the Arab League.
- *Negotiate an open skies agreement with the Arab League partners.* The EU has proposed an 'open skies' agreement with Tunisia. Such an agreement would open those bilateral routes up to low-cost carriers, putting competitive pressure on air fares on those routes and help the tourism sector. However, as shown in World Bank (2008a), to maximize network and scale economies and sharply reduce prices, an open skies agreements with Tunisia's Arab League partners will be needed as well;
- *Negotiate free trade agreements with regional entities in SSA, starting with the West Africa Economic and Monetary Union (WAEMU) and the Common Market for East and South Africa (COMESA).* Such agreements could help reduce uncertainty for firms and investors. The WAEMU, a market of 72 million, is a customs union with a common currency and fully harmonized and stable trade-related regulations. COMESA, which includes Egypt and Libya, is a market of 350 million people in

advanced process of integration. Such agreements would help stabilize commercial relationships and could help Tunisian firms penetrate durably these markets.

- *Proactively seeking an agreement with regional partners to increase maritime transport links.* The limited direct maritime links between the countries of the region (in particular Tunisia-Morocco, Tunisia-Algeria, Tunisia and SSA countries) is a serious obstacle to regional integration. Experience around the world suggests that waiting for trade to reach a high level is not a solution. Rather putting in place the transport link would widen the scope of trade. Again because of its diverse production structure, Tunisia could play a lead role in championing greater maritime links;
- *Promoting the establishment of financing mechanisms for trade and investment* in MENA and Sub-Saharan Africa. A greater presence of Tunisian banks in the countries of these regions is a first place to start. The opening of the capital account for Bank and firms wanting to open subsidiaries in these countries should also help this process.

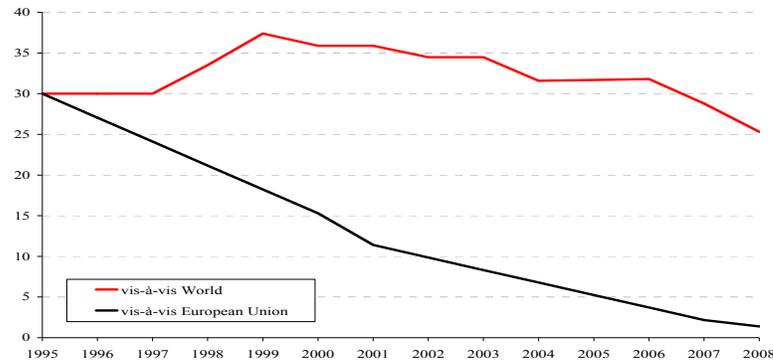
4.13. *Export promotion* too, should be enhanced. The government has created several trade-support institutions (CEPEX, FAMEX, etc., see World Bank 2008a for a comprehensive review). To fine-tune and adapt its trade support institutions to a changing world, international experience can be a useful guide. For example, Macario (2000) identified policies that determined successes and failures in Brazil, Chile, Colombia, and Mexico. On the basis of interviews with successful exporters, she sets out a set of recommendations for export promotion agencies: (i) they should be directed at firms with new products or who are entering new markets; (ii) they should emphasize cost-sharing to ensure that programs are used only by those truly dedicated to export; (iii) support should be given for a maximum of 2-3 years so that it does not turn into a permanent subsidy; (iv) programs should be submitted to external evaluation; and (v) agencies work best when they are subject to a mix of public and private management. Tunisia may gain from applying these principles to its various trade promotion instruments.

#### **FURTHER REDUCING “NON-PREFERENTIAL” TARIFF AND NON-TARIFF BARRIERS**

4.14. Border procedures and taxes are undergoing reform. Customs formalities are being comprehensively streamlined, with the objective of reducing the total holding period for merchandise from 9 days in 2006 to 3 days in 2009. The tariff regime is similarly being simplified. The number of tariff bands was reduced stepwise from 54 in 2003 to 7 in 2008. Over the same time period, the simple average of most favored nation tariff rates was cut by more than 9 percentage points. These efforts to shift towards a less complex and more open import regime are in line with developments in the region and world-wide.

4.15. Yet, Tunisia’s tariff policy remains highly distortive and has arguably become even more so with the preferential liberalization vis-à-vis the EU. The average import tariff is the highest in the Maghreb region and more than twice as high as the Mena and world averages. Moreover, the move to free trade for industrial products with the EU has introduced a substantial wedge between the duties that imports from the EU and those from third countries are subject to (Figure 27). In the extreme, imports from third countries are liable to duties of 43 percent, while the same product could enter the Tunisian market from the EU duty free.

Figure 27 - Evolution of EU-preferential and MFN tariffs (%)



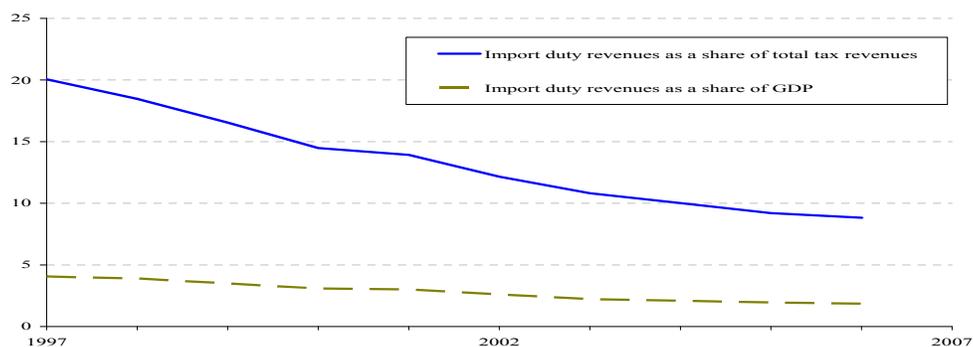
Note: Averages calculated as simple mean of tariff lines at the HS 6-digit level. Calculations include customs duties & surcharges.  
 Source: International Monetary Fund, and national authorities.

The large preferential margin granted to EU exporters provides strong incentives for trade diversion, as well as for illicit activities. With high external trade barriers, there is a risk that trade is diverted from low-cost third country producers (e.g. Indian suppliers of pharmaceutical generika) to high cost EU producers (e.g. European suppliers of branded pharmaceuticals). The tariff wedge is also susceptible to foster smuggling and fraud related to certificates of origin.

- In order to avoid or contain the ensuing fiscal and economic losses, the process of reducing MFN tariffs should continue and be re-enforced with the aim of providing economic operators with a viable choice of domestic or foreign suppliers based on product price and quality rather than on considerations of particular customs regimes.

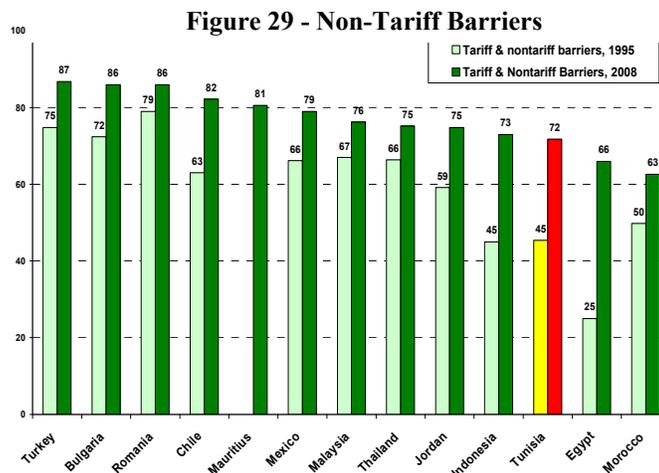
4.16. Fiscal constraints should not represent a major obstacle for further tariff reform, due to the limited importance of trade taxes for government finances. The share of import duty revenues in total tax revenues has fallen from more than 20 percent in 1997 to less than 10 percent since 2005 (Figure 28). In fact, because of preferential agreements, duty exemptions, and investment incentives, the implied average tariff from customs collections is at about 2.7 percent of import value (data for 2007) significantly below the average listed rate. Hence, the fiscal risks from further tariff reform seem manageable. Indeed, lowering MFN duties might generate additional revenues by triggering increased imports from third countries to replace duty-free shipments from the EU.

Figure 28-Tariff revenues have lost in importance (in percent)



Source: World Bank, World Development Indicators.

4.17. But as tariffs are reduced, non-tariff barriers will become more visible as a barrier to competition and efficiency in the domestic market. Figure 29 presents the extent to which tariff and non-tariff barriers are absent in Tunisia and the other 12 comparator countries for 1995 and 2008. Even though there has been much improvement since 1995 and Tunisia's index is not far from the best performer in the sample (Turkey), Tunisia ranks somewhat unfavorably among the comparator countries on average. While it scores better than Egypt and Morocco, it trails Jordan, Turkey, Romania and Bulgaria and other emerging countries in LAC and Asia implying that they are relatively free from these trade barriers.



### PURSUING CAPITAL ACCOUNT OPENING TO EASE THE INTERNATIONALIZATION OF TUNISIAN FIRMS

4.18. The (prudent) opening of the capital account goes hand in hand with deeper trade liberalization. In a growth strategy where innovation plays an important role, capital account liberalization can help increase the availability of capital to finance investment and innovation while expanding opportunities for risk sharing and consumption smoothing (Agénor 2001; Edison, Klein et al. 2004). In the particular case of Tunisia, it would allow Tunisian firms to expand by setting up subsidiaries in proximate and distant markets thereby increasing national income growth.

4.19. Tunisia has been gradually liberalizing its capital account, progressively dismantling restrictions on international financial transactions using a three-phase approach. In the first phase, which is nearly complete, (i) most restrictions were removed on inbound FDI; (ii) nonresidents can undertake limited investment in local currency government securities and in listed firms and nonfinancial institutions. Authorizations were abolished on most foreign portfolio investment in Tunisian companies and, finally (iii) borrowing abroad was fully liberalized for financial institutions and restrictions were eased for non-financial institutions. The second phase liberalizes outbound FDI and allows overseas portfolio investments by institutional investors and portfolio investments in debt instruments by nonresidents. The third phase will allow portfolio investments abroad and lending by residents to nonresidents while achieving in parallel full currency convertibility.

4.20. The reform entails some risks however especially in the context of the current global economic environment. Therefore, Tunisia will need to first further modernize and strengthen its banking system and the buildup of strong foreign reserves. Moving to a more flexible exchange rate regime requires a greater familiarization by the central bank of the implications of the different exchange rate band regimes.

## Strengthening the financial sector

4.21. The government of Tunisia has been attempting for several years to modernize the banking sector. Recent reforms of the banking system include: (i) privatizations; (ii) new laws to enhance the operational autonomy of the banking sector; (iii) modernization of money market and liquidity management instruments and payment systems; (iv) the 2005 law on financial security that aims at improving the quality of information from firms; (v) improvements in asset recovery procedures.

4.22. Further reforms of the banking system are however needed

- *Efforts to further reduce non-performing loans (NPL) should be intensified.* The authorities target an NPL ratio of 15 percent and provisioning ratio of 70 percent by 2009. Attaining this and going beyond will be important to further strengthen the banking system's capacity to absorb potential shocks. Today, a large share of Bank's fund is allocated to covering non-provisioned risks associated with unrecoverable loans. Reducing NPLs would allow banks to dedicated more funds to covering risks on new flows of credits, thereby supporting the productive sector. A key instrument that can reduce NPLs (and the provisioning need) is the restructuring of loans for debtors who could repay if interest payments are reduced. To overcome or dampen moral hazard phenomenon, partial cancellation of loan should take the form of equity swap, i.e., a conversion of loan into participation. Banks could ultimately sell their participation to capital-investment firms. This technique has been used in many emerging countries, including Poland, Korea and Mexico in the context of financial crises. Egypt built on this technique when it created at the central bank, a special unit in charge of restructuring banks' private loans.
- *Bank's management of credit could be enhanced* through an amendment of the circulaire on internal control (2006-19). Today, credit is instructed and granted based on information regarding the balance sheet, business plan, liquidity and wealth of the applicant. However, the quality of such information is often subject to doubt, and banks typically reject applications to protect themselves in case of incomplete or inconsistent information. One way to overcome this problem is to authenticate financial statements by the commerce tribunal. That would allow banks to at least receive the same information provided to the tax authorities.
- *The quality of audit could be improved by an effective application of the October 18 law on financial relations security.* This legal text makes certification of SMEs' accounts mandatory and requests that firms subjected to account consolidation to have these audited by 2 auditors ("commissariats aux comptes"). An independent agency could be created and given the responsibility of ensuring the credibility of audits and the effective application of the ethical code of the profession. This reform should be accompanied by a modernization and upgrading of quality control functions.
- Finally, in the area of guarantees which constitute an acute constraint to access to finance, *the Tunisian legislation regarding movable collateral needs to be modernized and harmonized with international standards*

## Moving to a more flexible exchange rate

4.23. As Tunisia moves to the last phase of its capital account liberalization process, serious consideration should be given to making the exchange rate more flexible. The experience of the past decades has shown that with a liberalized capital account, conventional fixed exchange rate regimes become precarious. Although there are a number of measures that can be adopted to enhance the viability of these regimes, in practice capital, account liberalization has often been accompanied by greater exchange rate flexibility. The key reason is that a float allows greater freedom in responding to exogenous shocks, particularly destabilizing movements in short-term private capital flows—despite the fact that large nominal exchange rate fluctuations themselves may entail some risks (see Box 1).

### **Box 1. Fixed and Flexible Exchange Rate Regimes: Benefits and Costs**

The choice between fixed and flexible exchange rate regimes entails a trade-off between a number of conflicting goals. Both types of regimes have strengths and weaknesses, and while attempts to follow “in between” solutions such as bands can in theory provide a middle ground, in practice they often turn out to be merely temporary solutions.

Conventional arguments in favor of a fixed exchange rate, for instance, are that it provides a nominal anchor to prices, it may help to bring down inflation, and that it may promote fiscal discipline (or contribute to maintaining it once achieved). Pegging to a low-inflation currency may also lead to improved credibility (in the form of lower expectations of inflation and devaluation) and lower inflation—despite the fact that policymakers retain the ability to devalue unexpectedly—because it helps to signal the government's commitment to price stability. One reason for that is the fact that the exchange rate is a highly visible price, which can be monitored more easily than other nominal anchors.

However, some of these benefits have proved to be elusive. In developing countries, the credibility gain associated with pegging to a low-inflation country may be quite limited; building credibility and establishing a firm commitment to price stability has instead often required significant institutional reforms, such as granting independence to the central bank and forbidding automatic financing of fiscal deficits. The evidence on the disciplinary effect of a fixed exchange rate on fiscal policy appears either weak or in-existent (see Duttagupta and Tolosa (2006)).

Moreover, while nominal exchange-rate stability is important, some degree of exchange-rate flexibility is also necessary to avoid excessive real appreciation and offset the impact of destabilizing shocks. Pegging may in fact prevent real exchange-rate adjustment in response to domestic and external shocks, as documented by Hoffman (2007), and this may explain why some studies suggest that in developing countries less flexible exchange-rate regimes are associated with greater output volatility. Overall, there is also consistent evidence that less flexible exchange-rate regimes are associated with slower growth.

By contrast, a flexible exchange rate gives national monetary authorities greater independence in choosing their inflation objective, and provides a (partial) solution to the moral hazard problems created by a fixed exchange rate. A float allows greater freedom in responding to exogenous shocks, and so greater stability of output (and inflation) than under pegged rates, at the expense of higher mean inflation. By purposely leaving some scope for unexpected exchange-rate movements and avoiding implicit exchange-rate guarantees, policymakers can induce domestic borrowers to internalize (at least some of) the costs of failing to hedge appropriately their foreign-currency liabilities.

In the case of Chile for instance, Cowan et al. (2005) found that the switch to a floating exchange-rate regime in late 1999 was indeed accompanied by reduced currency exposure. By eliminating implicit exchange-rate insurance, in a sense, the switch forced firms to internalize exchange-rate risk—thereby reducing vulnerability of corporate balance sheets to exchange-rate fluctuations. In the same vein, using a broad sample of eighty seven countries (both industrial and developing) from 1970 to 1997, and after accounting for various sources of bias, Tenreyro (2007) found that exchange-rate variability had no significant impact on trade. This finding suggests that the availability of forward contracts, currency options, and other alternatives for risk diversification and management may provide sufficient hedging to reduce the potential drawbacks of exchange-rate variability on trade.

Nevertheless, a flexible exchange-rate regime is not a panacea. It may not prevent a real exchange-rate appreciation (in periods of surges in capital inflows in particular) and it may be characterized by excessive

volatility (possibly exacerbated by a high degree of dollarization) with possibly adverse effects on trade flows. In contrast to Chile, and as documented by Parsley and Popper (2006), Asia-Pacific firms remain significantly exposed to fluctuations in one or more of the four major currencies (the U.S. dollar, the euro, the yen, and the British pound). Moreover, the degree of foreign exchange exposure has not diminished over time—suggesting that hedging options remain limited. Large (unhedged) foreign-currency liabilities by domestic firms, as well as significant contractionary effects of exchange-rate changes on output, would both militate against a high degree of exchange-rate flexibility—key reasons perhaps for the common practice of heavy management of currencies in developing countries. Indeed, if corporate debts are denominated in foreign currency whereas the value of corporate assets depends on local currency (or, more generally, if corporate revenues increase with the relative price of goods produced domestically), sharp and unexpected currency movements may lead to financial instability, implying that while flexible exchange rates are destabilizing, a fixed exchange rate can enhance welfare by stabilizing banks' balance sheets.

Thus, because considerations regarding the choice of an exchange-rate regime are likely to change over time, policymakers should adopt a flexible view of what is the appropriate exchange-rate regime for their country. In practice, unfortunately, this principle has proved difficult to implement; too often countries have failed to adapt or change their exchange-rate regime in a timely manner—and have done so only upon being forced by markets to adjust abruptly and in some cases at a very high cost. Using a sample of fifty five exits, involving both developed and developing countries, Asici et al. (2005) found indeed that countries tend to wait too long to leave a pegged exchange-rate regime. In the same vein, Aizenman and Glick (2008a) found that exits from pegged exchange-rate regimes during the past two decades have often been accompanied by crises, and that the cost of a regime change (as measured by output losses) increases with the duration of the peg before the crisis.

4.24. During the 1990s, Tunisian policy aimed broadly to stabilize the real exchange rate through regular adjustments to the nominal rate (Fanizza, Laframboise et al. 2002). Since early 2000, in the context of its strategy of increased regional and global integration, there has been a gradual move away from the crawling peg regime toward a more flexible arrangement – a managed float with no predetermined path or official fluctuation band. The outcome has been a 22 percent cumulative depreciation of the dinar in 2000-08. More recently, the central bank's interventions in the foreign exchange market have declined, though exchange rate flexibility still remains limited. The standard deviation of the effective exchange rate stood at 1.3 in 1998-2000, 4.6 in 2001-04, and 2.3 in 2005-07.

4.25. Throughout this period, exchange rate policy has generally been supportive of macroeconomic stability, as measured by moderate inflation and balance of payments sustainability. Nevertheless, experience provides a clear warning that with open capital accounts conventional fixed exchange rate regimes become precarious: a fixed rate which is inconsistent with underlying fundamentals offers a low-risk, one-way gamble against the authorities and invites costly and destabilizing speculations. Besides, greater exchange rate flexibility mitigates not only the volatility of capital flows, but more generally the impacts of any external shocks. A substantial body of empirical evidence finds that the costs of adjustment to terms-of-trade shocks are significantly higher under a pegged exchange rate (or a heavily managed float) than under a floating rate. In the former case, adjustment to a negative trade shock would typically take the form of a gradual and modest real depreciation and a sizable contraction in output; by contrast, the latter would result in an immediate and sustained real depreciation accompanied by a smaller output loss<sup>24</sup>.

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<sup>24</sup> See Broda (2001, 2004) and Perry and Servén (2003). In another study, based on panel data regressions for 157 countries covering the period 1970-2001, Edwards (2004) found that countries with more flexible exchange rate regimes were able to accommodate better shocks stemming from a current account reversal (defined as a reduction in the current account deficit of at least 4 percent of GDP in one year) than countries with more rigid exchange rate regimes.

4.26. Of course, fixed exchange rates have attractive features for policy makers, too. A fixed rate helps to control inflation by providing a nominal anchor to prices. It may also promote fiscal discipline through an implicit commitment by the monetary authorities to support the exchange rate by raising interest rates and financing deficits through borrowing rather than money creation. A fully floating rate also entails a risk of large nominal exchange rate fluctuations. In practice, though, institutional reforms – guaranteeing central bank independence or forbidding automatic financing of fiscal deficits – are more effective in building credibility than pegging the currency to a low-inflation country. Moreover, the evidence on the disciplinary effect of a fixed exchange rate on fiscal policy is weak or nonexistent (Dutttagupta and Tolosa 2006).

4.27. In parallel with the gradual liberalization of the capital account, the transition toward greater exchange rate flexibility (in both directions) must therefore continue, possibly in the context of an implicit band regime with no central parity (that is, with no declared margins), as discussed in Box 2 and illustrated in Figure 30. Careful thinking must of course go into these alternative options; for instance, adopting an asymmetric diagonal band with a constant floor has the advantage of “signaling” the authorities’ intention to maintain competitiveness; but at the same time, it distorts the signal of a “two-sided bet” that must be conveyed to investors.

4.28. Regardless of the particular choice made, however, the fortunate news is that this transition is already taking place in a favorable context where official reserves have increased to about five months of imports of goods and services. This buildup must continue, because during the transition, market volatility may increase, and there may be a need to intervene to prevent destabilizing movements in the exchange rate.<sup>25</sup> Preparations for full convertibility and flexibility of the dinar will require measures to allow exchange rates to better reflect market conditions and deepen the market for foreign exchange. In that regard, a useful step is the elimination of delay in the quotation of the daily exchange rate.

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<sup>25</sup>Over time, increased exchange rate flexibility will itself foster market liquidity, which in turn will help reduce market volatility. However, risks emanating from capital account liberalization will continue to require an adequate reserve position to allow for central bank intervention.

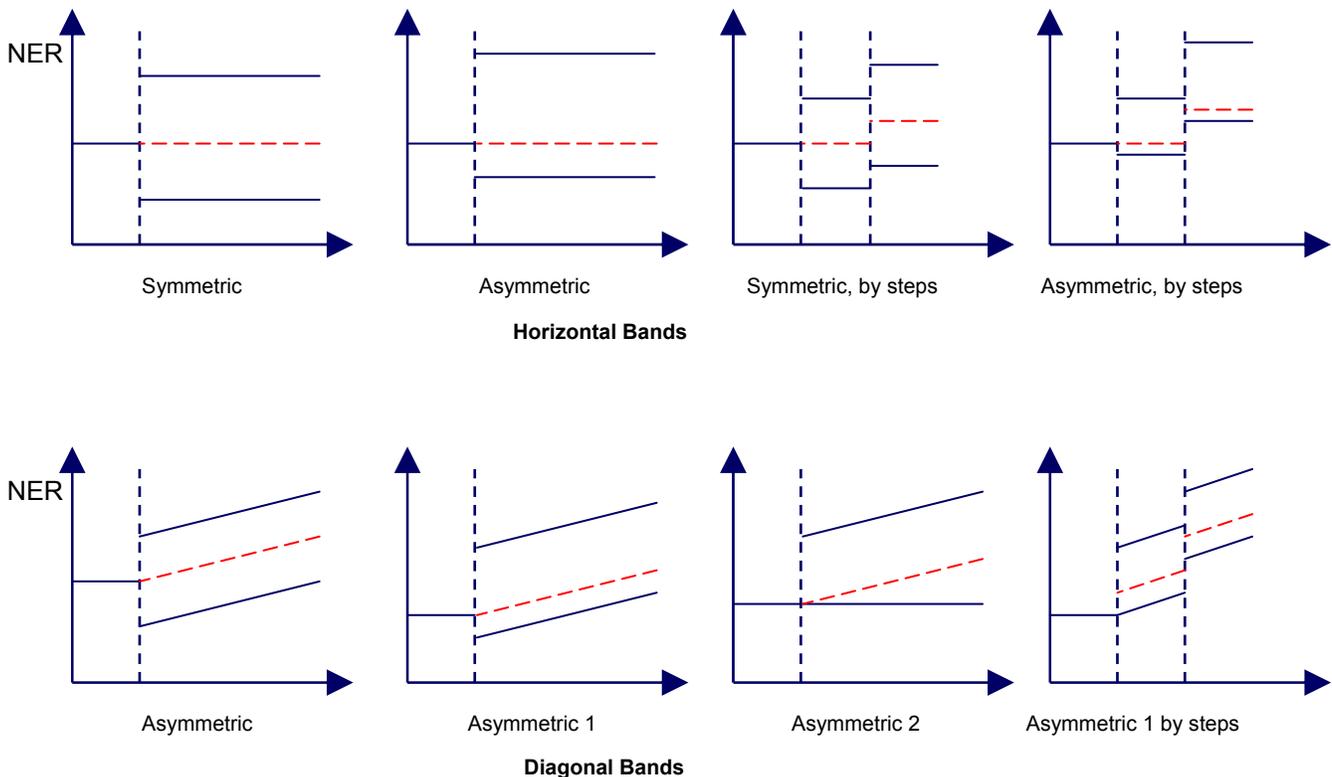
### Box 2. Gradual Exits through Band Regimes

Conditions for a successful exit depend in general on a number of factors, including the initial level of official reserves and intervention rules during the transition; the ability to adopt in a timely manner an alternative anchor to expectations; the capacity to implement an independent monetary policy under a more flexible exchange rate regime; and the degree to which transparency is maintained during the exit process. These factors also affect the choice of the pace of exit from a fixed or quasi-fixed exchange rate, that is, whether it is optimal to move overnight to a float or on the contrary use an interim band regime whose width is gradually increased before adopting a free float.

In practice, orderly exits from an adjustable peg (or a narrow band regime) have taken the form of either a direct switch to a floating rate regime or the adoption of a band regime, with implicit or explicit margins, where the exchange rate is allowed to float within certain limits. As illustrated in Figure 30, the band itself can be either horizontal or diagonal, with or without a central parity, symmetric or asymmetric, with smooth or discrete widening margins over time, and may be characterized by a progressive reduction in the frequency of central bank intervention to limit exchange rate fluctuations.<sup>26</sup>

Band regimes with sufficiently wide margins have proved successful in a variety of cases, in the sense of providing some anchor for inflationary expectations, as well as some scope for the real exchange rate to depreciate and sufficient nominal flexibility to restore a two-way bet for speculators. In other cases, however, the switch to a band regime proved to be no more than a palliative, and was eventually followed by a disorderly exit to a float. In some of these cases, the inability to maintain the bands even as a transitional device often resulted from sustained fiscal imbalances, which led at first to high domestic interest rates and short-term capital inflows. As a result of a sudden change in market sentiment, these inflows eventually turned into unsustainable outflows, forcing the central bank to abandon the upper intervention rate and let the exchange rate float.

Figure 30. Different Types of Band regimes



NER: Nominal exchange rate. - - -: Central parity.

<sup>26</sup>In principle, the choice of the band width should be dictated by the need to balance credibility and flexibility.

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## 5. FOSTERING AN ENABLING ENVIRONMENT FOR STRUCTURAL CHANGE

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5.1. This chapter argues that as the government puts in place policies to increase the pace of structural transformation through strengthening the innovation system and deepening integration, equal attention should be given to the environment within which economic agents operate. In addition to maintaining macro stability, economic regulations and governance will need to be adapted and the functioning of the financial and labor market significantly improved.

5.2. Maintaining macro stability requires the continuation of the government's pro-active approach to macro management and further fiscal consolidation to increase fiscal space. Enhancing economic regulations and governance calls for eliminating obsolete regulations and complex bureaucratic procedures, reducing controls on business, encouraging stronger market competition and improving the quality of public services. As regards the financial sector, the key is to continue ongoing banking reforms and to implement newer reforms aimed at strengthening non-banking finance. Finally, reducing the rigidity of firing laws (coupled with the introduction of some sort of employment insurance) can go a long way in improving the functioning of the labor market.

### MAINTAINING MACRO STABILITY

5.3. Macro stability shapes the general environment within which firms make their decisions to invest, hire labor and produce. Decisions affecting capital and labor allocations are particularly affected by macro uncertainty and the perception of investors' about the government's ability to cope with uncertainty. Because Tunisia is highly exposed to shocks, pro-active macro policies are important to restore stability, maintain investors' confidence, enable countercyclical policies to maintain or increase GDP and employment growth.

5.4. The current recession in Europe illustrates the continued vulnerability of Tunisia to external shocks and its needs to maintain pro-active macro policies. Real GDP slowed down towards the end of 2008 as a consequence of the recession in Europe. The main channel of transmission is trade. Trade intensity explains about 80 percent of business cycle correlation, between Tunisia and its five main partners in Europe: France, Italy, Germany, Spain and Belgium.<sup>27</sup> Volumes of exports of clothing and automobile components plummeted in the last quarter of 2008 and led to an overall export growth of 1 percent for 2008, against 12 percent in 2007. In 2009, they dropped by 20 percent. The sharp increase in FDI in 2008 (+40 percent) to 4.2 percent of GDP, eased significantly the financing needs emanating from the sharp increase in the current account deficit (-4.6 percent of GDP) but could not prevent a slowdown in growth in Tunisia. Government responded with a series of measures in December 2008.

5.5. The government reacted swiftly to the global financial crisis (see box 3). This pro-active stance is crucial in light of the volatility of the international environment. For instance, while the main preoccupation of policymakers in 2008 was to increase food and energy subsidies in order to "contain" the food and oil crisis, in 2009, Tunisia had to implement a fiscal stimulus package in order to offset the dramatic decline in external demand. Fortunately, Tunisia is well prepared to

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<sup>27</sup> See Diop and Abdallah (2009). "Can Fiscal Policy Help Short-Term Growth? The Dynamic Effects of Fiscal Shocks on Output in Tunisia", *World Bank Policy Research Working Paper 5087*, The World Bank.

shrug this shock off. The macro-economy remains sound. The fiscal deficit is modest (-2.1 percent in 2008), inflation is low (3 percent) and reserves are healthy (5 months of imports).<sup>28</sup> External public debt dropped significantly from 58 percent of GDP in 2005 to 47.5 percent in 2008. Overall, prudent macroeconomic policies helped Tunisia improve its access to international financial markets, allowing the country to borrow at long maturities and under relatively favorable conditions.

5.6. In the medium-term, Tunisia will remain vulnerable to shocks on growth and employment emanating from its strong trade ties with the EU. Its growth cycle is strongly correlated with that of the EU, even if not one-to-one. A 1 percent reduction in the EU growth leads on average to a 0.66 percentage point reduction in Tunisia's growth, all else being equal<sup>29</sup>. Fiscal consolidation must therefore continue to secure the fiscal space to respond to shocks on the economy and the budget. In 2008, salaries and wages, transfers and subsidies and interest payments accounted for 45, 21.5 and 8.8 percent of public expenditures respectively, leaving little room for managing important shocks and increasing public spending as a countercyclical tool.

- Medium term fiscal stability will require continuing reform of the subsidies system, especially fuel. The Authorities plan to phase out petroleum subsidies by 2011. Current levels are not sustainable given Tunisia's limited hydrocarbon reserves and the likely medium term persistence of high fuel prices.
- Higher GDP growth will help reduce the weight of salaries in GDP. However, if GDP growth remains around 5 percent, the structural expenditure rigidities will constrain the government's fiscal space. For example, the public wage bill fell only slightly from 12.1 percent of GDP in 2001 to 11.8 percent in 2008. A period when GDP growth was 5 percent. Short of robust GDP growth, Tunisia should increase the productivity of public servants to reduce the relative weight of the salary bill. See below.
- Looking forward, the government is committed to open the capital account. As will be discussed in chapter 4, this implies that Tunisia will need to move to a more flexible exchange rate regime and a market-based monetary policy framework, posing specific challenges.

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<sup>28</sup> The sharp rise of inflation in 2008 (5.6 percent in June on a year-by-year basis) was largely driven by the dramatic increase in world cereal and oil prices.

<sup>29</sup> For more details, see Diop and Abdallah (2009). "Can Fiscal Policy Help Short-Term Growth? The Dynamic Effects of Fiscal Shocks on Output in Tunisia", mimeo.

### **Box 3. Government's policy response to the global financial and economic crises**

The Government's response to the global financial crisis is a testimony of pro-active macroeconomic management. The Tunisian economy was not directly affected by the initial spread of financial turmoil emanating from the US and Europe in September 2008. This was due to several factors including: (i) local banks have little foreign exposure; (ii) real estate loans represent only 10 percent of GDP (compared with close to 90 percent in the US); (iii) the money market was highly liquid. At the beginning of October the central bank had US\$1.2bn available to inject into the market if needed; (iv) foreign participation in the stock market is "relatively low", at some 28 percent; and (v) the *dinar* is non-convertible for most capital-account transactions.

With export growth dropping significantly from 12% in 2007 to 1% in 2008, it became evident that the real economy cannot escape the consequences of the global financial crisis. The government reacted by initiating many measures in December 2008 to support the real economy in response to the emerging slowdown. These included measures to: (i) increase public investment by 20 percent in the 2009 Budget Law; (ii) assist exporting firms through subsidies on social security and export insurance costs of exporting firms. Specifically, the measures include a subsidy of 50 and 100 percent of the employer's cost of social security for firms witnessing a dramatic fall in exports to Europe and firms that have to stop production and run down stocks, respectively. The emergency measures also include a subsidy of 50 percent of the cost of export insurance; and (iii) selected reforms to enhance integration and improve the business climate and strengthen the financial sector within the framework of the Integration and Competitiveness Development Policy Loan supported by the World Bank, the EU and the African Development Bank. These include reducing the number of tariff bands from 9 to 6, converging product quality and safety norms to international standards, preparing a strategy for regulatory reforms in the services sector, improving the business registry to make it accessible and up-to-date, reducing the delays in access to industrial land (amendment of the urban code) and reforming venture capital and mutual funds to make them more effective.

By the end of June 2009, it became evident that the recession in Europe is deeper than anticipated. Export growth in the first semester of 2009 dropped by 19 percent. The government extended the December measures both temporally (to end of December 2009) and sectorally (include partially exporting firms). Furthermore, a fiscal stimulus package of TND 700 million (2.3% of total spending) additional spending on infrastructure was adopted in early July. It is anticipated that this additional spending will lead to an overall fiscal deficit of 4.2% in 2009.

## **ADAPTING ECONOMIC REGULATION AND GOVERNANCE**

5.7. A first wave of reforms in economic regulation occurred following the signature of the AA with the EU. These reforms contributed to the good performance of Tunisia over the last 10 years. Now, more is needed. To accompany trade and innovation policies aimed at increasing the pace of structural transformation, reforming economic regulations and governance will be crucial. Enhancing economic regulations and governance calls for eliminating obsolete regulations and complex bureaucratic procedures, reducing controls on business, encouraging stronger market competition and improving the quality of public services.

### **The first wave of reform in economic regulations**

5.8. The signature of the AA with the EU in 1995 triggered a gradual shift in the incentive regime for trade and investment. As tariffs vis-à-vis the EU were being eliminated, the government has played a useful role in helping the private sector cope with increased import competition from European supplier.

- It has accompanied the opening of the industrial sector with the implementation of a “*mise-à-niveau*” upgrading program, aimed at enhancing the organizational, technological, and marketing capabilities of firms that were being gradually exposed to competition from EU-based producers;
- In parallel, efforts were made to promote trade development through electronic documentation processing (Tunisia Trade Net), as well as streamlined technical controls, improved customs procedures, and increased access to information on standards and technical regulations;
- To reduce the dichotomy between the offshore and onshore sectors, firms in the offshore sector were allowed to sell up to 30 percent of their production in the domestic market when complying with the onshore fiscal regime on that proportion; At the same time, the onshore corporate tax was reduced from 35 to 30 percent, the top-VAT rate was suppressed and the remaining rates re-aligned, and VAT reimbursement rates were increased to 100 percent;
- Finally, the recent law on economic initiative, promulgated in December 2007, is intended to foster a more investment-friendly business environment by simplifying administrative procedures, facilitating financing, and reducing the tax burden. These measures complement initiatives in tax administration aimed at improving the quality of services for taxpayers.

5.9. As a result of trade accompanying reforms, Tunisia transition to an open trade vis-à-vis the EU with limited adjustment cost (World Bank 2008a). The reforms were successful in creating an environment that is attractive for export-oriented foreign investors. As seen above, inflows of FDI have continued to be strong: 2.2 percent of GDP in 1996-00, 2.6 percent of GDP in 2002-05 and 5 percent of GDP in 2006-2008.

5.10. While these achievements are undeniable, the incentive framework for trade and investment can be further improved. Indeed, as seen above, national private investment remain low. Attracting more FDI into higher value-added production still remains a challenge. Further improvement in economic regulation and governance is needed.

### **Further reduce state intervention**

5.11. The hand of the state has been heavy and pervasive in Tunisia, even though a major shift away from dirigisme policies has taken place in the last 20 years. An argument can be made that, in the past, such an extensive role of the state has been necessitated by the need to provide order and stability. In turn, such stability—combined with the competence and integrity of the administrative apparatus—has been a major contributor to the country’s steady economic growth and social progress.

5.12. Looking to the future, however, an equally strong argument can be made that, with globalization constraining the ability of all national governments to act independently and, with the need to accelerate the structural transformation of the economy, the role of the state as regulator should become both more selective and much lighter. Structural transformation is not consistent with an excessive reach of state intervention. Selective streamlining of regulations is necessary. But

such a piecemeal approach should also be accompanied by a more systematic review and consolidation of the legal framework of economic activity.

- the Government could consider launching a comprehensive inventory and review, from the ground up, of all legislative and regulatory texts in the area of economic activity, with a view to abrogating obsolete ones, correcting contradictory ones, codifying certain areas as may be appropriate, and generally to achieving a major streamlining and coherence of the legal dimension of the regulatory environment for economic activity.

### **Reduce controls on business and enhance regulation in the onshore sector.**

5.13. In spite of numerous measures to reduce the dichotomy in the economy, the economic structure of Tunisia is still dual: an offshore “sector” (we use sector for simplicity but it is a “regime” since an offshore status is possible for any tradable sector), established in the early 1970s with a liberal regime (10 years tax holiday, duty-free imports, fast trade procedures, free repatriation of profits, etc.) coexists with the local onshore economy without any significant production and trade links. Integrating the two regimes would allow greater FDI externalities, greater local value added content and enhanced cost competitiveness thanks to transport and logistics cost economies. China’s economy illustrates these benefits.

5.14. Integrating offshore and onshore regimes requires reducing the administrative and procedural gaps between the two sectors. Indeed, current legislation allows offshore firms to sell up to 30 percent of their production in the domestic market (and be subjected to domestic regulation on that proportion). However, the take up of this option is quasi-inexistent. Firms operating under an offshore regime are used to operating in a liberal environment, with no tax and minimal interferences with the administration and therefore are reluctant to sell in the domestic market even when prices are higher there (as in the case of many textile and mechanical component products). The solution lies in the improvement of the interface between the administration and the private sector:

- *Reduce tax controls on firms that sell in the domestic market in order to strengthen linkages between offshore and onshore sectors;*<sup>30</sup> the pervasiveness and complexity of government’s controls on transactions in the domestic market seem to be the main constraint to integrating these two sectors. Firms operating in the offshore sector value the limited intervention of the government that they enjoy and are reluctant to face pervasive and complex controls from the administration and intrusive prescriptions of the modalities of business conduct.
- *Provided that controls on business are reduced and simplified, Tunisia can consider gradually increasing the proportion of output that offshore firms can sell in the domestic market.* That would also call for considering a suspension of some taxes paid by partially exporting onshore firms (such as VAT) to allow them to compete with offshore firms under

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<sup>30</sup> Tax avoidance along with the weak protection of investors is Tunisia’s weak points in the World Bank Doing Business ranking. Worldwide as well as relative to more developed neighboring countries Tunisia compares very well in international trade rules and ease of closing a business, and reasonably well in respect of starting a business, registering property, and contract enforcement. Rigidity of firing laws, which— in all countries-- is the result of deliberate labor-protection policy and not a symptom of regulatory weakness, is also a weak point for Tunisia in the Doing Business ranking.

similar basis. This reform could amplify the spillovers effects of FDI throughout the economy and enhance productivity.

- *Streamline legislative and regulatory texts on economic activities that have accumulated over the years.* A plethora of legislative and regulatory texts on economic matters has accumulated over the years, with little attention to their consistency with earlier texts or to the overall coherence of the legal framework. Such state of affairs produces confusion and uncertainty among potential investors and thus missed investment opportunities. Partial simplification and codification has taken place during the past 15 years in some important areas, notably the companies code and the customs code. These initiatives have been valuable, but a systematic and more comprehensive effort in that direction is called for. *The Government should consider launching a comprehensive inventory and review, from the ground up, of all legislative and regulatory texts in the area of economic activity, with a view to abrogating obsolete ones, correcting contradictory ones, codifying certain areas as may be appropriate, and generally to achieving a major streamlining and coherence of the legal dimension of the regulatory environment for economic activity.*

### Further improving doing business in the onshore sector

5.15. The Government is explicit about the need for regulatory reform to improve the investment climate of the onshore sector. According to the World Bank's Doing Business indicators, Tunisia's overall ranking was near the midpoint of the 180 countries sampled in 2008, up five places from the year before (Table 8). Neighboring Egypt and Morocco were around 40 positions worse, though Turkey and Western European countries were substantially better. Tunisia fared best in international trade rules and ease of closing a business, and reasonably well in starting a business, registering property and contract enforcement. The main areas of regulatory concern are tax avoidance and investor protection in spite of recent reforms on the latter.

**Table 8- Doing Business ranking  
Tunisia and selected neighboring countries, 2008**

Indicator	Tunisia	Egypt	Morocco	Turkey	France	Greece	Italy	Spain
Starting a business	68	55	51	57	12	152	65	118
Dealing with licenses	96	163	88	43	17	42	78	46
Employing workers	113	108	165	128	144	142	56	154
Registering property	66	101	102	136	159	93	49	42
Getting credit	97	115	135	31	36	84	68	13
Protecting investors	147	83	158	68	64	158	51	83
Paying taxes	148	150	132	64	82	86	122	93
Cross-border trading	28	26	67	54	25	65	62	47
Enforcing contracts	80	145	114	56	14	87	155	55
Closing a business	30	125	60	34	32	38	25	17
<b>OVERALL</b>	<b>88</b>	<b>126</b>	<b>129</b>	<b>57</b>	<b>31</b>	<b>100</b>	<b>53</b>	<b>38</b>
Change, 2007-08 <sup>1/</sup>	+5	+26	-8	+8	+1	-5	-3	0

*Source:* World Bank, *Doing Business in 2008*. Rank out of about 180 countries, with results for 2007 adjusted to reflect changes in methodology and the addition of three new countries in 2008. *Note:* <sup>1/</sup> A positive sign indicates an improvement in ranking, though caution is appropriate in interpreting the results, especially where the differences are small.

### Enhance market competition

5.16. Among import-competing firms there remains a widespread perception of a skewed operating environment compared to the offshore sector. Firms that sell into the domestic market

complain about anti-competitive practices and the unfair advantages of informal competitors that do not pay tax and social security contributions. In a recent survey of 851 enterprises (IEQ 2008), close to three quarters of responding firms complained about one form of anti-competitive practices – either through artificially low price fixing (60 percent of respondents), dominant power abuse (15 percent of respondents), explicit or implicit agreements (14 percent of respondents) or all of these. Firms also find it difficult to sustain competition with firms operating in the informal sector, or officially formal firms that avoid paying social security charges (35 percent of respondents) or undertaking counterfactual activities (26 percent of firms).

- It is thus crucial to raise Tunisia’s firms’ awareness of the activities of the competition council. This council has since a 2005 law the power to trigger litigation (“auto-saisine”) and impose market discipline. However, a recent firm survey (IEQ 2008) shows that about 50 percent of firms that complain about anti-competitive practice are not aware of the existence of a competition council. Pro-active information campaigns are warranted;
- The activities of the Directorate of Competition within the Ministry of Commerce could also be examined and assessed, in view of making it more effective.

### **Improve the quality of public services.**

5.17. In a global competition context, the quality of public services is important for competitiveness. To that effect, rationalizing and improving the simplicity and coherence of business-related texts is not enough. The way public servants apply the regulations and interact with the private sector is often a more serious problem (World Bank 2009). It is in particular crucial that the administrative entities enforce regulations in an even manner and adopt a client satisfaction orientation to ensure the highest quality of interaction and services possible for private sector growth.

5.18. Tunisia has initiated an ambitious program to improve the quality of services to firms and citizens. The reform includes (i) simplification of procedures; (ii) reduction in the time and the number of documents required for business transactions; (iii) simplification of the cahier des charges (business regulation in certain sectors); (iv) establishment of a one-stop shop and online services for investors and (v) enhancement of the quality of public administration services through a special “quality” program. The latter is the fourth component of the Government Strategy, “An Open Administration Closer to the Citizen”. The priorities set under that component are to:

- publish a public service charter;
- develop mechanisms allowing citizens to express opinions, and improve the administration’s communication and information channels;
- ensure that citizens obtain replies to their queries in a timely and satisfactory manner;
- address the quality of reception of the public;
- reinforce regional and local decentralization to bring the administration closer to the citizens; and
- increase the number of administrative communication and information call centers.

5.19. The public service improvement program reflects a commendable commitment to greater participation by the public. *It is however important to indicate the desirable sequencing, which is essential since it is evident that not all seven priorities can be implemented at the same time.*

Furthermore, it will be important to incorporate in the reform an explicit monitoring and evaluation system. The implementation of the public service improvement program could also be an important opportunity to debate the importance of improving the behaviors and practices (not only rules and regulations) of administrations in direct contact with the private sector. Private firms often complain about limited understanding of the spirit of some reforms at the local level as well as limited managerial autonomy of local structures.

## PURSUING FINANCIAL SECTOR REFORMS

5.20. A dynamic financial sector is a key ingredient in accompanying reforms aimed at accelerating structural transformation of an economy. Tunisia's large firms cannot fully tap into the global financial market for investment and innovation because the opening of the capital account is not yet effective. As for the SMEs, they remain constrained by difficult access to credit as evidenced by enterprise surveys.

5.21. In addition to the need to enhance intermediation, there is a strong pressure to enhance the performance of the sector because the Government has decided to gradually open the capital account. Owing to the gradual approach taken (see chapter 4) but also to strict application of prudential rules, there was no credit boom as experienced by numerous other emerging markets over the last few years. The banks are now benefiting from the fact that the credit growth prior the global financial crisis was financed by domestic deposits, so they do not necessarily depend on foreign creditors.

5.22. Tunisia's banking system accounts for about 70 percent of the assets of the financial system. With 20 commercial banks, the banking sector is quite fragmented. The small size of banks impedes realization of economies of scale. The four largest banks represent about 55 percent of both deposits and credits. Three of the four largest banks are state-owned. State-run banks have a joint market share of 40 percent.

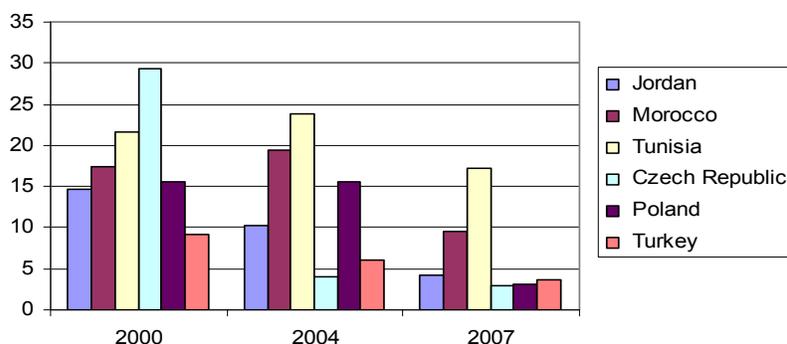
**Table 9- Commercial Banks Soundness Indicators**

	2003	2004	2005	2006	2007
Capital adequacy ratio	9.3	11.6	12.4	11.3	11.0
Private banks	8.4	12.4	13.5	12.1	11.5
Public banks	10.8	10.1	10.0	9.3	10.0
NPLs (percent of gross assets)	24.0	23.7	20.9	19.0	17.3
Private banks	21.6	20.4	20.0	19.7	17.3
Public banks	26.7	27.4	22.1	19.7	17.3
Provisions (percent of NPLs)	43.1	45.8	47.4	49.2	53.8
Private banks	39.9	43.5	45.9	48.4	51.0
Public banks	46.2	47.6	49.1	50.2	56.9
Return on assets	0.6	0.4	0.5	0.7	0.9
Return on equity	7.6	5.1	6.5	7.7	9.0

Source: Tunisian authorities.

5.23. Non-performing loan ratios have improved significantly in the past few years, declining from 24 percent of total loans in 2003 to about 17.3 percent at end-December 2007 (Table 9). However, this ratio remains quite high. To further strengthen the banking system, the authorities have recently announced their intention to reduce by end-2009 the NPLs ratio to 15 percent, and to increase the provisions-to-NPLs ratio to 70 percent (from 43.1 percent in 2003 and 53.8 percent in 2007), independently of the collateral value.<sup>31</sup> Although overall capital adequacy ratios remain relatively good, an injection of new capital in public banks may also be needed to achieve the targeted provisioning ratio.

**Figure 31- Non-Performing Loans (% of gross credits)**



Source: World Development Indicators

5.24. The structural weaknesses of the banking system translate into poor access to credit by Tunisian small and medium enterprises even though the latter's own weaknesses also play a role. The majority of loan applications by SMEs are rejected, suggesting that a significant number of bankable projects are denied access to financing. According to IEQ's most recent firm survey, 36 percent of firms rate access to credit as a major constraint and 53 percent consider the cost of credit too high. From the Banks' perspective, access to information on borrowers is a constraint that they compensate through over-collateralization<sup>32</sup>. The amount of collateral requested by banks is as high as 174 percent of the value of credits requested by firms on average and 203 percent for small firms.

5.25. The GoT has been committed for several years to liberalize and modernize its banking sector. The share of the public sector in the banking sector, representing a dominant share of the financial sector, has been notably decreased. Recent reforms of the banking system include: (i) privatizations; (ii) new laws to enhance the operational autonomy of the banking sector; (iii) modernization of money market and liquidity management instruments and payment systems; (iv) the 2005 law on financial security that aims at improving the quality of information from firms; (v) improvements in asset recovery procedures.

<sup>31</sup>The distribution of dividends by banks that are inadequately provisioned has also been prohibited since 2004.

<sup>32</sup> There are no private credit registries while the public credit bureau (*Centrale des Risques*), supervised by the Central Bank, is more geared towards avoiding systemic risks. Indeed, loans below 13,605USD are not recorded and access to credit history is limited to the creditors' own customers. It is thus difficult to assign a credit rating to a SME and finance new entrants in the credit market.

5.26. Further reforms of the banking system are however needed.

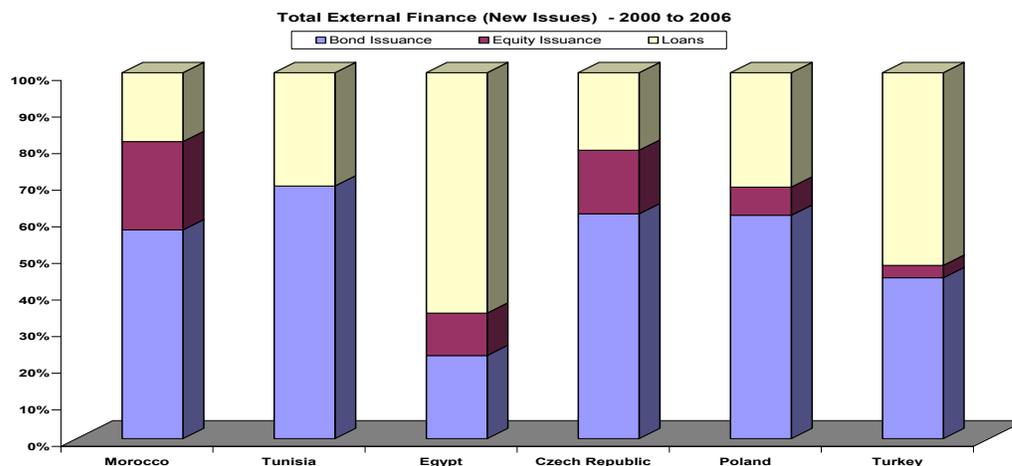
- *Efforts to further reduce NPLs should be intensified.* The authorities target an NPL ratio of 15% and provisioning of 70 percent by 2009. Attaining this will be important to further strengthen the banking system's capacity to absorb potential shocks. Today, a large share of Bank's fund is allocated to covering non-provisioned risks associated with unrecoverable loans. Reducing NPLs would allow banks to dedicated more funds to covering risks on new flows of credits, thereby supporting the productive sector. A key instrument that can reduce NPLs (and the provisioning need) is the restructuring of loans for debtors who could repay if interest payments are reduced. To overcome or dampen moral hazard phenomenon, partial cancellation of loan should take the form of equity swap, i.e., a conversion of loan into participation. Banks could ultimately sell their participation to capital-investment firms. This technique has been used in many emerging countries, including Poland, Korea and Mexico in the context of financial crises. Egypt built on this technique when it created at the central bank, a special unit in charge of restructuring banks' private loans.
- *Bank's management of credit could be enhanced* through an amendment of the *circulaire* on internal control (2006-19). Today, credit is instructed and granted based on information regarding the balance sheet, business plan, liquidity and wealth of the applicant. However, the quality of such information is often subject to doubt, and banks typically reject applications to protect themselves in case of incomplete or inconsistent information. One way to overcome this problem is to authenticate financial statements by the commerce tribunal. That would allow banks to at least receive the same information provided to the tax authorities.
- *The quality of audit could be improved by an effective application of the October 18 law on financial relations security.* This legal text makes certification of SMEs' accounts mandatory and requests that firms subjected to account consolidation to have these audited by 2 auditors ("commissariats aux comptes"). An independent agency could be created and given the responsibility of ensuring the credibility of audits and the effective application of the ethical code of the profession. This reform should be accompanied by a modernization and upgrading of quality control functions.
- Finally, in the area of guarantees which constitute an acute constraint to access to finance, *the Tunisian legislation regarding movable collateral needs to be modernized and harmonized with international standards.*

5.27. Unfortunately, the capital markets play only a subordinate role with a stock market capitalization of 15 percent of GDP, 70 percent of which are financial sector stocks. Given its small size and lack of liquidity, the stock market contributed only 8 percent in financing gross capital formation in 2007. Bond markets, however, are relatively well developed as the government relies on bond issuance to fund its fiscal deficit. External finance by economic agents in Tunisia are mainly from the banking system and treasury bonds (Figure 32).

5.28. The development of the securities market has been hindered by excessive reliance on easy bank financing for large companies, and by weaknesses in Tunisia's SMEs. Other factors that have impeded the development of securities and venture capital markets are the limited scope of the privatization program so far, which has not privileged public offerings and remains timid in terms

of opening the capital of public enterprises, and the limited role played by contractual savings and collective investment schemes. *The single most important reform that would increase the liquidity and depth of the capital market would be channeling more privatization to the stock market.* The government intends to go this route.

**Figure 32- Source of external finance for economic agents**



Source: World Development Indicators

## ENHANCING SKILLS AND IMPROVING THE FUNCTIONING OF LABOUR MARKET

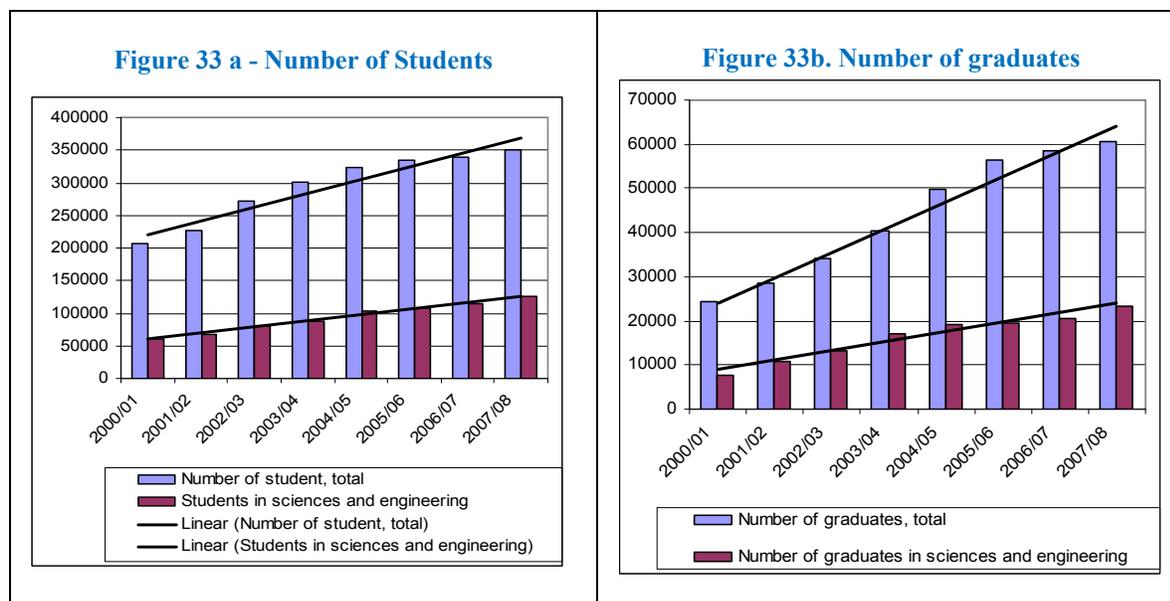
### *Enhancing skills*

5.29. Structural transformation in a productivity-driven growth framework requires adequate supply of skills needed by emerging sectors as well as traditional sector moving up the value chain. For Tunisia, the challenge is double. It needs to reduce skills mismatch in the short run while making its universities and engineering schools flexible enough to accompany the supply new skills as the need arises.

5.30. **Reduce skills mismatch.** Tunisia’s education system produces in massive numbers university graduates. In general fields as well as in sciences and engineering, the number is growing fast (Figures 33a and 33b). Yet, according to firm surveys, Tunisian firms often struggle to find the right mid-level financial specialists, communication specialists, IT with specialized skills or high level technicians to accompany their development. The IEQ’s 2007 enterprise survey finds that “over 60 percent of firms claim that they are constrained in their expansion because the engineering, technician or skilled worker profiles they need are not available. Over 50 percent of firms are constrained because managerial or skilled worker education is inadequate for their needs. Over 70 percent of manufacturing employers report shortages of “skilled workers” (*“ouvriers qualifiés”*), and nearly 60 percent of high level technicians (*“techniciens supérieurs”*). *In addition to giving public schools more autonomy (see below), promoting stronger private involvement in education could significantly contribute to matching supply and demand.*

5.31. *It is important to continue education policy reforms to improve the responsiveness of the system and the mix of skills produced.* Today, the universities’ hands are bound because, for example, procedures for selecting students or permanent staff and the management of budgets are

centralized and overly bureaucratic. The government has launched a reform to enhance the autonomy of universities and adopt the LMD system (Licence-Master-Doctorat as in the US). The new law also stipulates that universities will be able to compete for private contributions, be it through contract research or fees. It is also sought to combine learning in universities and vocational training centers and in enterprises as well as increasing the time allocated to IT, entrepreneurship and English. *These reforms are too recent for an evaluation but effective implementation will be crucial. Furthermore, it will be important to introduce similar reforms upstream since the transitioning nature of the economy requires in addition to specific technical skills, thinking and behavioral skills often secured prior to entering university.*



Source: Ministry of Higher Education, Research and Technologies

### Reducing the rigidity of firing laws

5.32. One of the characteristics of the labor market is the rigidity of firing laws.<sup>33</sup> Tunisia ranks poorly in doing business on that indicator with a firing index more twice as high as for the MENA region and the OECD (Figure 34). The labor regulation stipulates that employers have total flexibility of hiring and firing up to 4 years, after which the complex and lengthy firing procedures kick in. In principle, this is a hindrance to labor mobility and productivity growth since talents can remain bottled up in stagnant sectors at the detriment of dynamic ones.

5.33. However, in practice, labor market surveys suggest that the rigidity in firing laws is bypassed and has induced firms to offer precarious and short-term employment, sometimes informal jobs. Labor market surveys reveal a high level of instability of jobs except for public administration. About half of individuals aged 23-29 working in construction, retail and hotel-restaurants were still employed in those sectors one year later. Excluding the public administration, turnover rates vary between 40 and 50 percent for the 23-29 age group. This provides some flexibility but makes employment precarious for a large number of individuals. The severity of job

<sup>33</sup> Tunisia's labor market has been analyzed extensively in a number of recent contributions (World Bank 2008b, World Bank 2004, Nabli 2007).

instability seems to be compounded by the prevalence of skills mismatch which induces firms to develop low expectations regarding the qualifications of employees and to resist offering a longer-term contract or offering better wages.

5.34. The bypassing of firing laws is very consistent with the fact that only a small percentage of firm managers denounce the latter in enterprise surveys. According to the IEQ's latest enterprise survey (IEQ 2008), only 20 percent of responding firms consider the rigidity of labor regulation as a major constraint. The only sectors for which the percentage was high are private higher education and architecture. Conceivably, it is more difficult to go around the labor code in these sectors employing highly skilled people who negotiate a formal contract.

5.35. There are alternative explanations as well. Stampini and Chouchane (2008) link the high turnover rates to skills mismatch and contradictory expectations regarding qualification and wage. They argue that firm managers are unwilling to pay high wages because of low qualification and work relationships are quickly terminated as the poor match becomes evident. This argument is also consistent with the results of firm surveys. In the IEQ's latest enterprise survey, one-fifth of responding firms consider skills mismatch as a major constraint. This is particularly severe in the textiles and clothing sector where half of responding firms declare having difficulties finding the right skills needed, but also the mechanical engineering sector (37 percent), the IT sector (45 percent) and the health sector (38 percent). In any case, the high turnover rates strongly defeat the purpose of making firing laws rigid (labor protection).

5.36. ***Make firing laws less rigid while linking it to the introduction of employment insurance.*** The rigidity of the firing law is largely bypassed through informal arrangements between workers and employers in many sectors. The absence of this factor in the top list of firms' complaints in enterprise surveys illustrates this. *Thus the main benefit of relaxing the rigidity of firing laws would thus be to facilitate formal job creation (i.e., change the composition of the labor mix between formal and informal) and firms' restructuring. The government could consider linking this reform with the introduction of some sort of unemployment insurance to provide a minimum of safety net to those who lose their jobs*<sup>34</sup>

#### *Improve the efficiency and effectiveness of intermediation services*

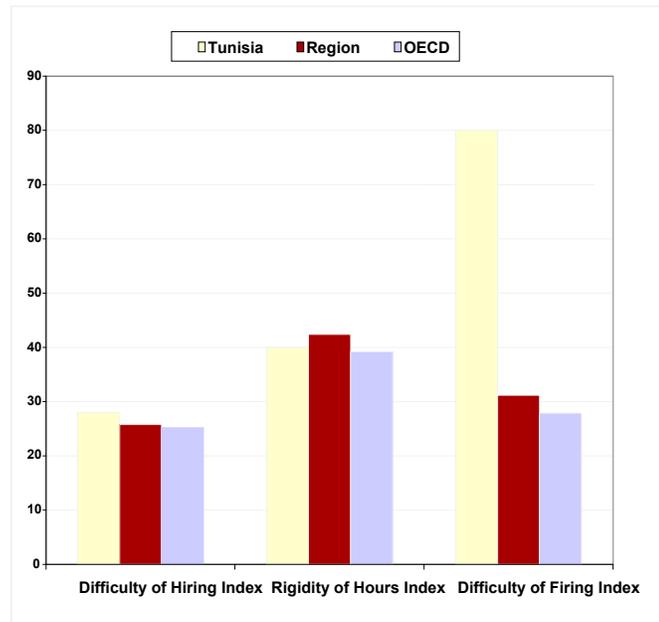
5.37. Intermediation services are provided within the framework of Tunisia's active labor market policies. These policies aim at reducing labor cost for firms to encourage labor demand, overcoming information asymmetry by offering intermediation services to job seekers and enterprises, training, apprenticeship and public workfare under various national funds. For instance, the "stage d'initiation à la vie professionnelle (SIVP)" offers a wage subsidy for a limited time-frame to encouraging professional insertion of university graduates; the "contrat emploi-formation (CEF)" encourage firms to employ job seekers with lower secondary qualification. Tunisia spends around 1.5 percent of GDP on ALMPs.<sup>35</sup>

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<sup>34</sup> According to World Bank (2008b), severance pay is among the lowest in the region, and only regulated for general dismissal, with courts deciding in other cases. Only in cases of collective layoffs do people have access to a benefit as high as the minimum wage, during a maximum of six months. This benefit is paid by the *Caisse Nationale de Securite Sociale*, and funded through a 0.4 percent payroll contribution.

<sup>35</sup> Until 2008, a total of 54 overlapping ALMP instruments existed. A reform announced in January 2009 significantly streamlined them, cutting the number of instruments down to six, simplifying the number of steps and procedures and improving targeting. For a detailed analysis of ALMP, please refer to World Bank 2007 and World Bank 2008b

Figure 34- Rigidity of Labor Regulations



Source: World Bank: "Doing Business"

5.1. The government has recently paid due attention to improving intermediation services. A recent reform aims to (i) improve the quality of public services provided to job seekers and the interface with the latter; (ii) open the intermediation services to the private sector and association to enhance competition and efficiency; (iii) and improve employment information collecting, treatment and flows for better active labor market policy making. *Implementing these sensible reforms would go a long way in improving the efficiency and efficacy of labor matching.*

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## 6. MEETING THE CHALLENGES OF NATURAL RESOURCE CONSTRAINTS THROUGH INNOVATION

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6.1. Tunisia's record of environmental and natural resources management is good, even exemplary. Since the 1980s, Tunisia has been a pioneer among developing countries in emphasizing conservation, rationalizing energy use and promoting renewable, which has contributed to an energy intensity of 0.08 ktoe per US\$1000 of GDP, well below the MENA average of 0.18 and even below the world average of 0.13. Though per capita renewable water resources are less than half the MENA average, urban water is supplied 24 hours a day and coverage is universal, while water saving technology in the agriculture sector has increased water use efficiency to the second highest in the region<sup>36</sup>. Population density is relatively high, especially in some parts of the coast, yet the cost of air pollution was the lowest of 8 MENA countries covered in a World Bank study (Sarraf 2004).

6.2. Nevertheless, Tunisia has a fragile natural environment with limited natural resources and development over the past 20 years has been based on resource intensive agriculture, manufacturing and tourism. Significant land and water degradation offer clear evidence of the resulting stress on the environment. Thus, policy makers need to confront tradeoffs squarely and ensure development is sustainable in the long run. For instance, 1,000 hectares of gravity irrigation consumes on peak days the equivalent of a city of 1 million people (MAHR 2006), which suggests the opportunity cost of allocating water to relatively low value crops grown on marginal land is high. Elsewhere, even with prices well below recent peaks, a growing dependence on imported hydrocarbons exposes domestic markets and/or the public accounts to volatility from international energy markets. Though energy efficiency is already high, World Bank 2009 estimates that a further 10 percent gain would raise GDP by 0.4 percent, suggesting that many investments would be cost effective.

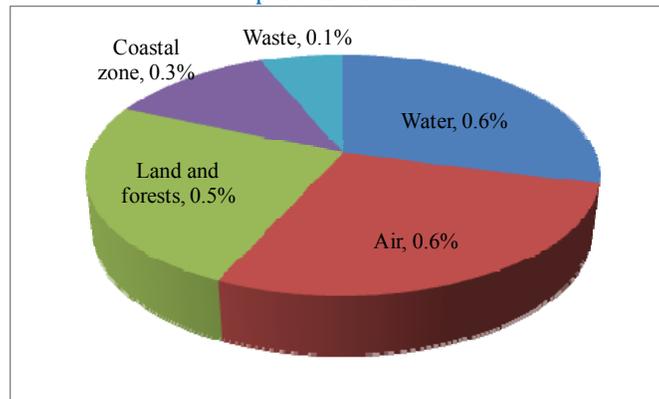
6.3. A somewhat out of date estimate (from 1999) by a World Bank study put the cost of environmental degradation – in terms of both lower output and welfare losses from a deteriorating quality of life – at 2.1 percent of GDP.

6.4. As resource constraints bind ever more tightly, that figure 35 is likely to rise, increasing the payoff to making the right choices. Government has responded with increased expenditures on environmental protection, investment in infrastructure, and increased efforts at conservation. The main challenge will be to put in place a clear and consistent policy framework that reflects the economic value of resources. The remainder of this chapter draws out some implications for agriculture, industry and energy, and tourism.

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<sup>36</sup> <sup>36</sup> Water, p. 44.

Figure 35 – Costs of environmental degradation  
percent of GDP



Source: Sarraf 2004

## AGRICULTURE AND WATER MANAGEMENT

6.5. Tunisia has a total land area of 15.5 million hectares, 63 percent of which is classified as suitable for agriculture and livestock production ("surface agricole utile"); 4.9 million hectares are under cultivation – 2.7 million hectares used for annual crops and 2.2 million hectares for perennial crops (more than half olives, the rest fruits and vineyards); 1.1 million hectares are forest and 0.7 million hectares lie fallow. Rainfall is low and variable, both over time and across regions. Only 2.3 percent of arable land is in humid or subhumid zones with at least 600 mm of rain per year and 78.6 percent is located in arid or desert areas with rainfall lower than 300 mm per year.

6.6. Despite limited land and water resources, agriculture plays an important role in the economy, accounting for a tenth of GDP, exports and investment and providing employment for nearly a fifth of the labor force. It is a primary source of income for many rural households, though in many cases supplemented by non-agricultural activities as well. Output growth averaged a moderate 2.6 percent in real terms during the 10th Plan, but overall production has more than kept pace with the growing population and economy and the overall food coverage rate rose from 65 percent in 1987-91 to 78 percent in 2002-06. The development strategy for the sector has focused on four priorities: (i) mobilization and efficient use of water resources; (ii) land and natural resource conservation; (iii) improvement in agricultural productivity; and (iv) intensification of production and development of agro-industries.

6.7. While recent performance has been impressive, it has been accompanied by increasing signs of environmental stress. Currently, 90-95 percent of water resources are being tapped and overexploitation of groundwater has caused underground water to fall by 0.38 m and deep underground water by 0.74 m annually (Sarraf et al. 2007). One-third of the country's aquifers are severely overexploited and despite efforts aimed at regulation and conservation over-extraction of ground and fossil water continues. Water quality has also been affected and salinity has increased with intensity of use. Land resources are also being seriously degraded by overuse. Approximately 3.5 million hectares of land have been affected to a greater or lesser degree by wind and water erosion and 31 percent of arable land is now severely eroded. Approximately 30,000 ha of productive land are being lost annually.

6.8. Water constitutes the most immediate constraint to agriculture's growth. Current annual availability is approximately 4.7 billion m<sup>3</sup>, 2.7 billion m<sup>3</sup> of surface water and 2.0 billion m<sup>3</sup> ground water (Besbes, Hamdane 2005). Treated wastewater adds about 200 million m<sup>3</sup> a year. Per capita availability at 438 m<sup>3</sup> is less than half the regional average of 1,100 m<sup>3</sup> and is expected to decline to 373 m<sup>3</sup> per capita by 2030. Tunisia's well developed water infrastructure now mobilizes 90-95 percent of the surface and groundwater available for use and there are few options for finding new sources. Management practices focus on storing large volumes for use in years of shortage<sup>37</sup>. But water resources are mainly in the north and inland which entails significant transport costs to users on the coast. Desalination, though expensive, seems inevitable for urban coastal communities.

6.9. However, agriculture is necessarily the main focus for water policy. About 82 percent of the mobilized water resources are used in agriculture, the majority of it for irrigation. Around 394,000 ha are under irrigation and contribute around a third of agricultural GDP and 20 percent of agricultural exports by value. Despite already high rates of water mobilization, the government has continued constructing reservoirs and drilling deep wells as part of its national strategy to increase the potential for irrigation and reduce the dependency of crop production on rainfall. However, not only is the potential expansion severely limited, but declining soil fertility now affects the majority of irrigated areas, causing significant decreases in production despite use of fertilizer. The decrease in organic residues from crop production further accelerates the decline in soil fertility. Salinity and water logging are widespread problems, especially in areas with poor drainage. Almost half of irrigated areas now have high soil salinity levels and an additional 29 percent have average salinity. Around 22 percent of irrigated land is affected by some degree of water logging.

6.10. A combination of conservation, desalination, recycling and agricultural rationalization is essential to ensure water use is sustainable in the medium to long term. On any reasonable scenario, water availability will constrain further growth of the agriculture sector. Measures to conserve and increase the efficiency of water use are crucial. At a technical level, efficient water management requires strict control of losses through good pumping systems and efficient distribution networks. But, the complex structure of land tenure, absenteeism, agricultural credit systems together with insufficient extension services limit the potential for dramatically increasing irrigation efficiency in the foreseeable future. The most effective step the government can take to increase efficiency is more effective and consistent use of price signals. Irrigation charges already cover operations and maintenance costs, but they do not reflect scarcity value. Meanwhile, irrigation-water saving technology is subsidized, but the effect is offset by a 50 percent tariff discount for cereals. Overall, the effect of these programs is to transfer resources into unsustainable production of cereals, depleting scarce water supplies and contributing to the degradation of land and water resources more generally.

6.11. With regard to both water and land, over-intensive cultivation has contributed to soil degradation, with significant repercussions on the agricultural sector through decreased yields as well as lost production. In part this reflects cereal production on marginal lands and overly intense usage of rangelands for livestock raising. In light of the ecological impacts, Government may wish to review production targets for the sector as a whole. Not only does excessive production overstress land and water resources, but the economic logic is not always clear. Dryland cereal production is neither economical nor environmentally sustainable: yields are comparatively low

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<sup>37</sup> Nearly half the country's maximum potential is mobilized in 27 large dams.

and water intensive. The policy of self-sufficiency in livestock stock products has been supported through various pricing and subsidy schemes and it costs almost twice as much to produce beef and milk in Tunisia as to import them. Further, the herd size has increased pressure on rangeland resources. A wholesale review of agricultural subsidies would be appropriate, with a view toward phasing out unsustainable and non-economically viable activities.

## INDUSTRY AND ENERGY

6.12. In the 1970s and early 1980s with the discovery of substantial oil and gas resources, energy began to play a key role in Tunisia's economic and social development. However, as the rest of the economy grew and production remained static the weight of energy declined to only 5 percent of GDP in 2004 compared to 13 percent in 1980 (Table 10). Energy continues to be an important economic sector, with export earnings of TND 5.2 billion in 2007, compared to TND 5.2 billion for textiles and TND 0.7 billion for olive oil. At the same time, royalties from crude oil production contribute significantly to government revenue. But, the supply-demand balance progressively tightened and by the late 1990s, Tunisia had become a net energy importer. Today, imports supply around a quarter of energy needs.

Table 10 - Share of energy in GDP, industrial output and exports percent

	1980	1990	1995	2000	2004
GDP	13.0	8.0	6.2	5.4	5.0
Industrial value added	35.0	24.0	20.0	18.0	18.0
GNFS exports	42.0	12.0	9.1	9.1	9.0

Source : MIPME/DGE

Table 11 – 2006 Energy balance for Tunisia  
on net calorific value basis

Supply and consumption	Crude oil	Petroleum products	Gas	Renewable	Total
Production	3430		2028	1162	6632
Net imports	-1552	2311	1414		2173
TPES	1806	2319	3442	1162	8741

Source: IEA. Notes: TPES – Total Primary Energy Supply; Columns do not add because of small amounts of hydro, geothermal, marine bunkers and stock changes omitted from table.

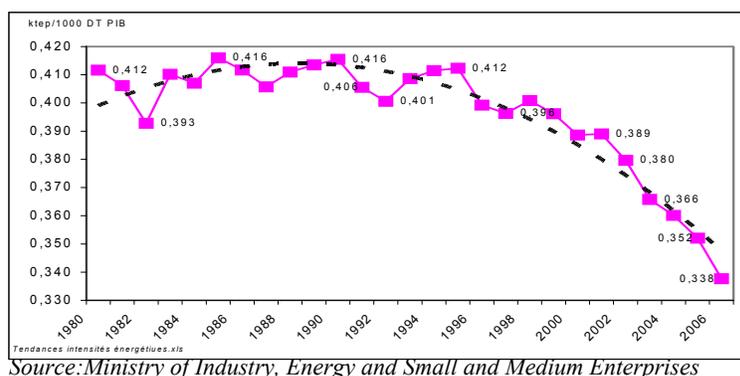
6.13. With the relative decline of energy as a productive sector, the focus of energy policy shifted more toward efficiency<sup>38</sup>. Since the mid 1980s, Tunisia has been a pioneer among developing countries in establishing an institutional and legal framework to promote efficiency and conservation. The Agence Nationale pour la Maitrise de l'Energie (ANME), created in 1985, has led the effort through research, strategic planning, monitoring, providing incentives and technical demonstrations and building public awareness.<sup>39</sup> The ANME's mandate has expanded

<sup>38</sup> Although oil and gas exploration has remained on the policy agenda, including in the 11<sup>th</sup> Plan.

<sup>39</sup> See [www.anme.nat.tn](http://www.anme.nat.tn). Figure 36 shows energy consumption per unit of output. Energy efficiency increases as the curve declines.

progressively, most recently in 2004-05 with the establishment of Energy Services Companies (ESCOs) to provide integrated project management and the National Fund for Energy Conservation (FNME) which is intended to facilitate financing energy saving investments. The success of these initiatives can be measured by progressive, indeed accelerating, gains in energy efficiency since the early 1990s (Figure 36). The trend reflects both structural evolution of the economy toward less energy intensive services as well as achievements at the sectoral level<sup>40</sup>. As already noted, Tunisia's performance compares favorably to most other countries in the region, though not to some other Mediterranean countries (Greece and Portugal), indicating scope for further improvement.

Figure 36 – Primary energy intensity of GDP in Tunisia  
toe/1000 DT of GDP



6.14. Going forward, the 11th Development Plan (2007-2011) provides the broad directions of energy policy, which includes the objective of reducing energy intensity by 2-3 percent annually and increasing the use of renewable by 4 percent through greater emphasis on investments in energy efficiency and renewable. To emphasize the importance of energy conservation, the government has formulated a 4 year energy management program (2008-11), which was adopted by the Council of Ministers and presented to the public in early 2008. The main dimensions of the plan are:

- Promotion of cogeneration and self-generation in industry using renewable (essentially wind).
- Extended use of energy audits in industry and necessity to obtain an authorization to set up a large new industrial installations.
- Improvement in the thermal insulation of buildings.
- Development of norms and standards for appliances, and gradual removal of equipment not meeting standards. Generalizing the use of CFLs.
- Financial incentives for solar water heaters.
- Improving energy efficiency in transport.
- Increasing the use of natural gas in the residential and commercial sectors.

6.15. In addition, with support from the World Bank and other development partners the resources and coverage of the Energy Efficiency Fund (FNME) are being expanded. Finally, an

<sup>40</sup> UNIDO 2007, “Energy use by, and CO<sub>2</sub> emissions from the manufacturing sector in selected countries: background paper,” ([www.unido.org/fileadmin/import/63293\\_Background\\_March.pdf](http://www.unido.org/fileadmin/import/63293_Background_March.pdf)) .

energy regulator will be created to oversee the implementation and compliance of the energy management program.

6.16. The broad outlines of the plan as well as specific elements such as private investment promotion, energy audits and product labeling reflect international best practice and are a laudable effort which will keep Tunisia at the cutting edge of energy conservation. However, in some areas, the government may be able to further strengthen the enabling environment:

- Strengthening the regulatory framework for cogeneration and the development of wind energy under IPP or self-generation arrangements.
- Scaling up the FNME and expanding its range of applications, including cogeneration and wind power; currently, the FNME and other public sources cover only 16 percent of the TD 1.3 billion investment requirements of the 11th Plan.
- Supporting ESCOs and establishing awareness of their role.

6.17. Meanwhile, other policies continue to work at cross purposes to the objective of energy efficiency. The government, in particular, should review the use of subsidies. Subsidies occur throughout the value chain, are non-transparent and distort incentives. For instance, ETAP (the national oil production company) sells crude oil to STIR (the national refinery) below international price, which discounts are passed on to distributors and final consumers<sup>41</sup>. Natural gas prices are subsidized at two levels: (1) through oil and gas prices charged to STEG (the national electricity company) and (2) through electricity prices set below STEG's cost recovery level. In 2006 subsidies totaled TD 1.3 billion – 3.2 percent of GDP or on average 27 percent of the cost of energy.

6.18. Table 12 shows, more than half of the subsidies in 2006 went to the industrial and transport sectors, with residential also a major beneficiary. The impact of subsidies is to shift investment incentives away from energy efficiency and reducing operations costs.

Table 12 – Energy subsidies, 2006  
TD billions and percent

	Value	percent
Agriculture	88	6.7
Industry	491	37.1
Transport	220	16.7
Residential	342	25.9
Services	181	13.7
Total	1,321	100.0

*Source: Ministry of Industry, Energy and Small and Medium Enterprises*

<sup>41</sup> Though recent declines in world prices have not been reflected in the local market and the subsidies have narrowed significantly.

## TOURISM AND THE ENVIRONMENT

6.19. Since the 1960s, tourism has experienced significant growth and become an important component of the economy. Tunisia receives around 7 million tourists per year, 60 percent from Europe and the rest from the Maghreb. The World Travel and Tourism Council (WTTC) estimates that in 2008 travel and tourism exports were TND 4.4 billion or 17.3 percent of total GNFS exports. The sector directly contributed 4.4 percent of GDP and 8.8 percent of employment and double that amount indirectly (Table 13). Tourism has a special importance because of its potential to create significant amounts of relatively low skill employment.

Table 13– Tourism indicators  
TND billions and percent

	TND billion	percent
Exports (TND billion)	4.4	17.3
GDP (TND billion)	8.6	17.4
- Direct (TND billion)	4.4	8.8
Employment (,000)	508.8	16.2
- Direct (,000)	270.8	8.6

Source: WTTC 2009<sup>42</sup>.

6.20. Following the events of September 2001 and the April 2002 (Djerda), tourist arrivals declined sharply from traditional European markets, especially Germany. These have been replaced by new markets in Eastern Europe, such as Poland, Hungary and the Czech Republic. Nevertheless, growth during the 10th Plan (2001-06) averaged only 3.4 percent, compared to the government's initial expectation of 5.4 percent, highlighting the sector's vulnerability to external conditions. In light of the global economic slowdown, projected growth of 6.1 percent during the 11th Plan may prove equally difficult to achieve. However, to the extent there is a period of slow growth, the government may wish to take the opportunity to develop a longer term strategy to put the sector on a sustainable footing.

6.21. The largest component of tourism – some 70-80 percent – is mass, low-cost, package beach holidays, which has led to high levels of congestion in some areas. Tunisia has 1,200 km of coast with 525 km of sandy beaches. However, in 2004 65 percent of urban development (approximately 4 million inhabitants) and 94 percent of hotel capacity (about 200,000 beds) were concentrated on 250 km of shoreline, less than 20 percent of the coastal area. Only 80 km of coastline has been developed for tourism and in some places densities are very high. For example, Hammamet-South has 25,000 beds and a marina concentrated on less than a 7 km coastal strip.<sup>43</sup> Though tourism does not place heavy demands on water resources – only around one percent of total water use – its consumption is growing faster than any other sector and reserves have been locally overexploited in densely developed regions.

6.22. Beyond the inherent implications of overcrowding, tourism has suffered from a lack of oversight and setting or enforcement of environmental regulations. Although the government

<sup>42</sup> [http://www.wttc.org/bin/pdf/original\\_pdf\\_file/tunisia.pdf](http://www.wttc.org/bin/pdf/original_pdf_file/tunisia.pdf).

<sup>43</sup> A similar high density development model was employed in northern Mediterranean countries from the 1950s, e.g. along Spain's Costa Brava and France's Languedoc region, but has since been abandoned.

considers integrated coastal zone management a high priority, tourist areas and resorts are not subject to any general regulations oriented towards environmental protection. According to the CEA(?), density, building height, size of hotel units and proportions of natural or developed green areas are at the sole discretion of developers whose interest is profit maximization.<sup>44</sup> Construction has been allowed too close to the sea, contributing to coastal erosion by altering currents, destroying natural dunes and removing vegetation. Water regulations are rarely respected and neighboring hotels access the same water table despite pumping limitations. Given current trends, beaches on the islands of Djerba and Kerkanneh are expected to disappear within a few decades, directly threatening tourist infrastructure and livelihoods of local communities. A somewhat out of date (1999) estimate placed the cost of environmental degradation on the tourism sector at around 0.2 percent of GDP (Sarraf 2004). However, the local impacts could be much greater.

6.23. To relieve some of the pressure on coastal resources, the 11th Plan proposes a new strategy of exploiting niches in health tourism, thalassotherapy, golfing holidays, conferences, and cultural and ecotourism, and diversifying accommodation to residential, boutique hotels and campsites. Without diversification, future tourism profitability is likely to decline due to coastal degradation. Further, paying for environmental protection will raise prices in this highly cost competitive segment of the market. Nevertheless, mass beach tourism will remain the dominant segment of the industry for at least the medium term. An integrated coastal zone development plan, together with establishment and enforcement of adequate, environmental protection is essential to ensure the sustainability of the sector.

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<sup>44</sup> Hence, negative external effects on the environment will be underpriced in a competitive equilibrium.

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