Millennium Challenge Corporation

Tunisia Constraints Analysis Report 2018

MILLENNIUM CHALLENGE CORPORATION
UNITED STATES OF AMERICA

This Constraints Analysis was jointly undertaken by MCC and the partner government to inform the development of a Millennium Challenge Compact. However, neither the collaborative process underlying the Constraints Analysis nor its appearance on this website constitute an endorsement by MCC of the content presented therein.

An Analysis prepared by the Government of Tunisia and the Millennium Challenge Corporation of the United States of America for the Development of a Millennium Challenge Compact

2018

Contributors

Government of Tunisia— Ministry of Development, Investment and International Cooperation (MDICI)

Habib Zitouna, Economist
Tarak Bey, Advisor to the Minister
Zoubeir Daly, National Coordinator
Meriem Achoura, Private Sector
Meriem Kebiri, Private Sector
Mongi Elayeb, Gender and Social Inclusion

Millennium Challenge Corporation
Andrew Carter, Economist
Peter Glick, Economist
Tamara Heimur, Country Team Lead
Oliver Pierson, Country Director
Lisa Dougherty-Choux, Program Officer
Elizabeth Wilke, Economist
Laura Cornwell, ESP
Nzinga Broussard, Economist
Courtenay Engelke, Finance, Investment and Trade
Tamara Heimur, Finance, Investment and Trade
Jozefina Cutura, Gender and Social Inclusion
Pamela Velez-Vega, Monitoring and Evaluation

Acknowledgements

This report benefitted greatly from the cooperation and insights of staff of numerous government ministries in Tunisia. We are particularly indebted to staff of the Ministry of Development, Investment and International Cooperation (MDICI). In addition, we would like to thank the wide range of private sector groups and other stakeholders who met with us to provide their perspectives and knowledge. We also thank Sandra Ospina and Mark Sundberg of MCC for their review of this document,

.

Table of Contents

1. Executive Summary

Introduction and background

In 2011, a peaceful revolution overthrew the regime of Zine El Abidine Ben-Ali in events that initiated the "Arab Spring" throughout the Middle East and North Africa. The Tunisian revolution reflected broad-based dissatisfaction with a lack of opportunities and long-standing regional and income inequalities—factors that have long plagued the country and shaped its policies. So far, however, the state has been far from able to adequately address these problems. Per capita economic growth, which was strong in the years prior to the revolution, has lagged at an average of 0.52% since 2011, reflecting in part security concerns and political strife. Further, the system of strong state control and rent-seeking that characterized the Ben Ali regime remains largely in place. This has contributed to a lack of competition, dynamism, and investment in many sectors of the economy, limiting the country's ability to provide good jobs and make inroads against persistent high unemployment among youth. The Government of Tunisia has recognized the need for more appropriate governance controls, a rationalization of state intervention, and increased transparency and accountability, in order to promote faster and more inclusive growth.

This Constraints Analysis employs the growth diagnostic methodology proposed by Hausmann, Rodrik, and Velasco (2005) to identify the binding constraints to private investment and growth. While the HRV approach typically focuses on broad-based constraints to growth for the country overall, MCC's constraints analysis also addresses questions of equity and inclusivity by disaggregating results, where possible, along key population dimensions such as geography, education, and gender. As a broad diagnostic exercise, the CA does not prescribe specific projects or investments. Instead, it lays the groundwork for subsequent investigation into the identification and prioritization of investments for growth. The analysis described in this document points to two factors that act as overarching binding constraints to growth, and a third factor that acts as a constraint to regional equity and sustainability, and therefore to inclusive growth. The overarching binding constraints to growth are (1) Excessive market controls of goods and services and (2) Restrictive labor market regulations. The constraint to regional equity and sustainability is (3) Inadequate and variable supply of water in interior regions.

Excessive market controls of goods and services

A well-functioning regulatory framework is a key component of any modern economy and ensures product safety and quality, consumer protection, and adequate competition. However, overly burdensome regulations can reduce efficiency, investment, and employment. A key means by which such controls may impact economic efficiency and growth is through impacts on market contestability, or the ease with which firms can enter and leave a market. Limited contestability can reduce firm and sectoral productivity by protecting incumbent firms and reducing incentives to improve processes, adopt new technology, or reduce costs. Rent-seeking encouraged by limited contestability and by the application of favoritism or cronyism reduces equality of opportunity and limits the survival-selection of the best entrepreneurs and firms.

While Tunisia has long provided a low regulation (and taxation) environment to manufacturing firms producing for export in what is known as the "offshore" sector, it heavily regulates industries in the domestic or "onshore" economy. About 50% of the overall economy is subject to prior state authorization for firms to enter. This makes possible a high level of discretion, arbitrary decision-making, and outright corruption on the part of officials in the process of granting of approvals. This in turn blocks entry of new firms, to the benefit of incumbent or otherwise favored firms but to the detriment of competition and productivity. In some sectors, fixed rules rather than discretionary authorizations govern entry, but these conditions or specifications are often not justified by either economic logic or public safety or consumer protection and may also serve to restrict competition and innovation.

Beyond barriers to entry, a wide range of regulations impose significant burdens on existing firms seeking to carry out common business procedures. The overall burden on firms of dealing with regulation appears to be very substantial in Tunisia, with firms reporting an extraordinarily high share of senior managers' time—over 45%—spent dealing with meeting various requirements of government. Finally, Tunisia's unusually prominent state involvement in the economy is also manifested in the presence of State-Owned Enterprises (SOEs) in many sectors where there is little economic logic for them (e.g., cereals, olive oil), and a plethora of government price controls and trade measures, especially in agriculture. The impact on firm behavior and investment of the high degree of regulatory control is manifested by, among other patterns, the much more rapid growth of firms in the offshore sector than in the highly regulated sector. While there have been some important recent steps toward regulatory reform in the last several years, implementation has been slow, and final impacts remain uncertain.

Restrictive labor market regulations

Policies regulating labor markets include minimum wages, employment protection legislation (governing hiring and job termination practices and job security), mandated benefits such as health care, and unemployment insurance. These policies, if designed appropriately, strike a balance between worker remuneration, workplace safety, and job security, on the one hand, and the flexibility that employers need to operate efficiently and grow, on the other. However, excessively burdensome regulation can significantly increase production costs, reduce productivity, and decrease the ability of firms to adjust to demand shocks, and will ultimately reduce the demand for labor. While these negative effects may be offset by positive effects occurring through, for example, higher investment in productivity-enhancing on-the-job training, highly restrictive policies may have serious implications for economic efficiency and growth.

Comparison with other countries and analysis of firm behavior suggests that such a situation characterizes Tunisia. The country ranks near the bottom—133 out of 138 countries—on the labor market regulations indicator of the World Economic Forum's Global Competitiveness Index. It is among the most restrictive in the world in terms of laws covering dismissal of permanent workers, inhibiting firm flexibility and hiring. Exceptionally high *de jure* employer contributions to social security (equivalent to 25% of profits) also disincentivize the hiring of formal, permanent workers. This has negative productivity implications since firms are much less inclined to invest in the skills of temporary workers. Further, it creates a duality between highly protected permanent workers and vulnerable temporary workers who enjoy no protections or social benefits. The small average size of firms provides inferential evidence of the negative impact of the extensive regulation of the labor market: Tunisia's share of microenterprises (those with fewer than 6 workers) is substantially higher than would be predicted by its level of per capita GDP.

While the labor market regulations just described apply to both men and women, other laws are explicitly or effectively gender-targeted. In Tunisia, these laws generally offer little protection for women in the workforce, and sometimes actively female employment. No laws mandate non-discrimination on the basis of gender in pay or hiring. Moreover, the Labor Code prohibits most forms of night work for women, as well as their participation in certain occupations that are deemed unsafe or unsuitable. Child-related leave entitlements are particularly low (30 days of paid maternity leave, with no unpaid-leave entitlement), which likely contributes to the very low participation rates of Tunisian women.

Inadequate and variable supply of water in interior regions

As both a determinant of human health and a critical production input, adequate water infrastructure is a necessary enabling condition for inclusive economic growth. Tunisia is among the most water-scarce countries in the world and faces significant challenges with water quality that are exacerbated by climate change. Due to decreasing rainfall and over-exploitation of renewable water resources, once numerous natural springs that fed oases, rangelands, and other agricultural lands have dried up over the last few

decades and the majority of central and southern aquifers are depleted or being over-withdrawn. This raises the costs and risks of investment in the disproportionately poor interior regions, particularly for agricultural and agro-processing firms. In the interior, agriculture's vulnerability to water-related shocks has widespread consequences due to the economic importance of agricultural exports. In particular, production and exports of olive oil have become highly variable in recent years, with significant social and economic impacts.

Aging water infrastructure, poor governance, and inefficient on-farm practices also are limiting growth of the agriculture sector. Many farmers have attempted to get around water scarcity problems by illegally drilling their own deep aquifer wells. In addition to the high direct cost to them, illegal drilling is unsustainable as continued groundwater consumption at these levels reduces future groundwater availability—a tragedy of the commons whereby individual private actions impose huge future social costs. Water shortages have also become a social problem: the Government regularly rations water, and shortages are felt in the greater Tunis area. Although climate change and Tunisia's location in a water-scarce climatic zone are inescapable realities, the growth and sustainability of water-dependent sectors could be improved substantially through investments that increase the efficiency of water use and discourage over-extraction. Further, given that inadequate and variable water supply most directly impacts livelihoods in the poorest regions of Tunisia, addressing this problem would strongly enhance the possibilities for growth that is pro-poor.

Other Constraints Considered

Several other factors represent potentially serious future challenges even if they are not currently acting as binding constraints. First, the Tunisian financial sector continues to demonstrate important limitations, including limits to financial sector penetration, hence to deposit growth; a substantial burden of non-performing loans; and interest rate ceilings that may limit the availability of credit for riskier or smaller borrowers. Due to these and other shortcomings, the banking sector has long scored very poorly on international rankings of soundness, and may pose a problem for growth in the future.

Second, while inadequate human capital does not appear to be a binding constraint to investment and growth, the quality of education in Tunisia, represented by international test scores, appears low relative to comparators. There is also widespread concern about (if mixed evidence for) 'skills mismatch', consistent with patterns of academic specialties in tertiary education. Furthermore, the exclusion of educated Tunisian women from private sector jobs distorts overall labor allocation and drives very high unemployment among well-educated women. If, as hoped, investment and growth in high-skill industries accelerates, human capital could become a binding constraint if the supply and quality of education do not adjust.

Finally, performance of the transportation and logistic sectors appears to be quite poor. Freight transport costs are very high in comparative perspective, likely reflecting regulatory barriers to firm entry that inhibit growth and innovation in the sector. For international trade logistics, Tunisia performs very poorly on international measures, and port operations at Rades, the country's main port, are extremely inefficient. These poor outcomes reflect significant market governance and regulation problems, and in this sense they are aspects of the already identified binding constraint of excessive government market controls.

2. Introduction

Following the 2011 revolution and the emergence of major democratic reform in Tunisia, MCC's Board of directors selected the country for development of an MCC Threshold Program. Although, activities related to the Program were suspended in the aftermath of September 2012 terrorist attacks in Tunisia, MCC engagement with Tunisia resumed in December 2016, when MCC re-selected the country for a full

Compact development. To support this process, a comprehensive Constraints Analysis (CA) was carried out to identify the most binding constraints to private investment and economic growth in the country. The CA employs the growth diagnostic methodology proposed by Hausmann, Rodrik, and Velasco (HRV, 2005) to rigorously identify the constraints to private investment and growth (See Box 1). While the analysis focuses on broad-based constraints to growth for country overall, it also attempts to address questions of equity and inclusivity by disaggregating results along key population dimensions, e.g., geography, education, and gender. As it is a broad diagnostic exercise, the CA does not dictate specific projects or activities to be funded by MCC. Instead, the CA lays the groundwork for subsequent investigation into the identification and prioritization of investment and intervention opportunities.

This document is the product of collaborative research by the MCC Country Team, based at MCC headquarters in Washington, D.C., and the Government of Tunisia's Tunisia Core Team, based in Tunis.[1] The Core Team was supported by the Ministry of Development, Investment and International Cooperation (MDICI). In addition to extensive desk research and data analysis by both teams, the document is the product of intensive on-site consultations with a wide range of stakeholders in and out of government. Importantly given the regional disparities afflicting the country, consultations were held both in and around greater Tunis and adjacent coastal regions and in selected interior regions.

Subsequent sections of this report present an overview of Tunisia's economy and recent developments, describe in detail the constraints determined to be binding, and then discusses other aspects of the economy where constraints, if they exist, were judged to be currently less- or non-binding but may represent significant barriers in the future.

[1] As part of the initial MCC Threshold program, an earlier Constraints Analysis was completed and published in December 2012. The present document provides a new constraints analysis that in some ways is an update of the previous CA, but stands on its own as an overview and assessment of binding constraints to growth in Tunisia.

Box 1 - Identification of the Binding Constraints to Growth – CA Methodology

Constraints Analysis (CA) results enable the partner country and MCC to select activities most likely to contribute to sustainable, poverty-reducing growth. MCC's evidence-based approach to its investments begins with a mutual understanding of a country's main growth challenges. During the first phase of the compact program development process, MCC and the partner country jointly conduct this analysis. This analytical exercise identifies constraints to private investment and entrepreneurship that are most binding to economic growth in the country. It also incorporates gender and social inclusion considerations.

All countries face many factors that restrict economic growth, but not all are equally severe, or "binding," on growth. Some have a small effect on the aggregate economy so that relaxing them would have little impact. Organizing the search for those that are binding is key, as without addressing those, other attempts to foster growth may be misdirected and fail. The CA starts from the premise that sustained, broad-based economic growth requires private investment and entrepreneurship, which depend upon: (i) potential overall returns on investment in the country; (ii) the share of the return entrepreneurs can expect to keep; and (iii) the costs of financing investments. The CA investigates the influence of each of these broad factors in each country's context and diagnoses which specific impediments are binding.

A lacking *factor* (such as skilled labor or roads) or *condition* (such as a stable macro-economy or reliable contract enforcement) can only be a binding constraint to growth where the supply of it is low and demand for it is strong. To assess whether the relative lack of a factor is a binding constraint, the CA looks for signals that these two conditions are met. For example, the quantity of credit in a country can be low, but this alone does not indicate a constrained supply of finance. The low quantity of credit may result from low demand because potential borrowers are constrained by other factors, such as a lack of infrastructure or an unsupportive business environment. Misdiagnosing low credit transactions in such a situation could lead to interventions (for example, subsidized credit) that would not address the underlying causes of weak economic growth.

A successful CA constitutes a solid foundation for the development of an MCC compact program that addresses the country's priorities consistent with MCC's evidence-based approach. The results of the CA do not dictate project areas or specific activities to be funded by MCC, and it is not required that MCC programs address all binding constraints identified. However, MCC's investment criteria ask that all its programs address a root cause of a binding constraint identified through the CA. The Constraints Analysis also seeks to identify barriers to the inclusion of key groups, such as women and girls, in receiving the benefits of growth or potential MCC programs and is informed by an analysis of high potential and inclusive sectors of growth within an economy.

While the analytical methodology builds on Hausman, Rodrick, Velasco (HRV) (2005) and Hausmann, Klinger and Wagner (2008) Growth Diagnostics papers (and subsequent elaborations by Pritchett (2008), and Rodrik (2010), a CA is more than just an application of the HRV Growth Diagnostics approach. It often incorporates analysis of political economy, governance (including Public Finance Management), inequality and gender, climate and environment as country circumstances dictate. These analyses inevitably improve our understanding of the *root causes* (or underlying syndrome) that would be examined deeper during the Root-Cause Analysis (RCA) stage of a MCC Compact development process. So, while the growth diagnostic must identify the direct (proximate) input(s) to production that are most problematic, the other analyses are key to understanding *why* the inputs are missing and, as a result, inform the identification/selection of binding constraints that the Compact aims to address.

3. Country context

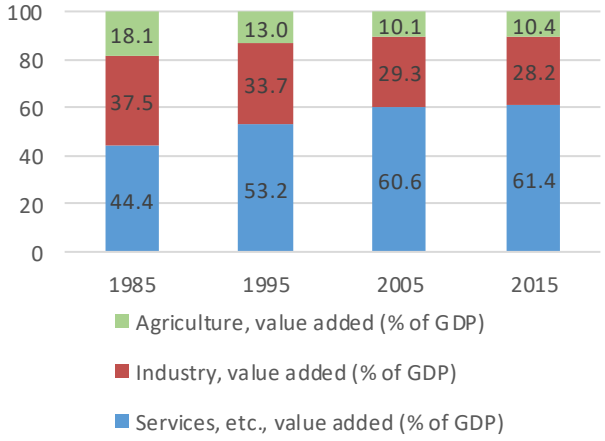
Tunisia is a lower-middle income country of 11.4 million people, located on the northern coast of Africa directly south of Italy, with a GDP of $10,752 USD, PPP. The country has a semi-arid Mediterranean climate in the northern coastal areas, which transitions to arid in the middle region and then to desert climate in the southern areas that border the Sahara desert.[2] Tunisia's population is primarily urban and coastal, with 60% of the population living in an urban area, and 85% of the population living within 100 km of a coastline, mostly in and around the large coastal cities including Tunis, Sfax, and Sousse.

In 2011, a peaceful revolution overthrew the regime of Zine El Abidine Ben-Ali in events that initiated the Arab Spring throughout the Middle East and North Africa (MENA). While the precipitating event of the Tunisian revolution was the self-immolation of an informal sector fruit vendor over a dispute with local police, that event reflected broad-based dissatisfaction with the lack of opportunities and long standing regional and income inequalities that have continued to plague the country and shape its policies.

Tunisia's economic growth was strong in the years prior to the 2011 revolution, with an average annual GDP per capita growth rate of 3.27% in the 10 years prior to 2011. It has since lagged at an average rate of 0.52%, reflecting at least in part security concerns and labor strife. The basic structure of the Tunisia economy, which has not changed greatly since 1995, is shown in **Error! Reference source not found.**. Services make up the largest share of value-added (60%) and employ 51% of the population. The highest-value-added services are in tourism, which directly contributes 6.6% of GDP and employs 6% of the working population. Manufacturing and industry account for 28% of GDP and 33% of employment, respectively. Agriculture and agro-processing make up 12% to 16% of GDP and employ approximately 20% of the national workforce, and 30% of the workforce in the four interior regions.[3]

Export growth with stifled dynamism in domestic sectors

Figure 1– Tunisian economy by sector (% of GDP), 1985-2015

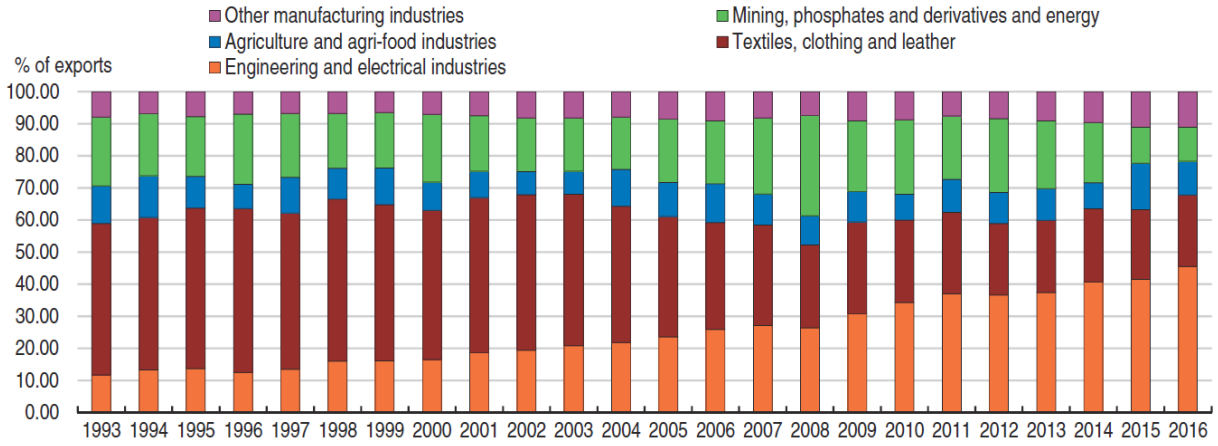


Source: WDI

Since 1995, exports overall have grown strongly at a compounded average rate of 10.2% despite reduced demand from the 2008 global financial crisis, though as a share of GDP exports are at approximately the same level as in 1995. Exports are concentrated in manufacturing of machinery and electrical equipment (29% of all exports), textiles (22%), and agricultural products (10%), primarily olive oil (6% of all exports) and tropical fruits (1.6% of exports). The machinery and electrical equipment component has grown considerably in the last 15 years, as the relative importance of textiles has declined from about 44% of exports in 2000 due to the phasing out of the Multi Fiber Agreement (see Figure 3). The share of manufactured goods in total exports, at 76%, is substantially higher than for other countries in the region such as Egypt and Morocco (OECD 2018).

[2] For reference, this land area is about 5% smaller than the State of Washington.
[3] Agriculture is a significant employer for women in rural areas, especially when taking into account unpaid family work on farms and subsistence agriculture.

Figure 3 – Distributions of Tunisian exports by sector of activity



Source: OECD 2018

These trends reflect a long-standing growth strategy of providing substantial incentives for manufacturing exports. In 1972, the government created the so-called 'offshore' sector with generous fiscal and financial incentives to attract FDI and boost exports. These policies have led to an 'onshore-offshore' dichotomy, whereby firms that produce exclusively or mostly for export—the offshore firms—enjoy a considerably less burdensome tax and regulatory environment than onshore firms that produce for the domestic market. The resulting highly dualistic structure of the economy between offshore and onshore segments remains in place to this day. To qualify as an offshore firm, a firm must export at least 70% of its output. Offshore firms face fewer bureaucratic requirements and authorizations[4] than onshore or domestic firms, have significantly lower tax rates, and are able to import inputs duty free. The tax rate on offshore firms was zero until 2015, when it increased to 15%, still well below the onshore firm rate of 25%.[5] The offshore regime also offers almost complete relief from employee's and employer's social contributions (World Bank 2016a).

The policies were successful at attracting FDI and boosting exports over the years, reflected in the unusually high share of manufacturing exports in total exports as well as the overall robust export growth noted above. However, the export sector has remained stuck mostly in low value-added activities carried out by low-productivity firms.[6] Recently, there has been impressive export growth in certain higher value-added areas, notably, pharmaceutical, plastics and electrical industries (OECD 2018). However, much of this production—such as in electronics and electrical equipment—still essentially features labor-intensive assembly. Further, linkages of export sectors to firms in the domestic economy, which helped lead to broader economic growth earlier in the exporting countries of East Asia, have been largely absent. This can be traced in part to the nature of the differential regulatory and tax treatment of the two sectors (World Bank 2014a). While offshore firms enjoy very streamlined customs procedures when they export abroad, to sell to Tunisian firms, they must obtain multiple approvals at central and regional levels, which are even more

[4] Entry authorizations—required for starting a business in a given activity—are largely absent for manufacturing activities, and all offshore firms are manufacturers.

[5] In 2018 the EU put Tunisia on a tax haven 'blacklist' because of the differential tax treatment. In response, the Government has agreed to harmonize the rates for the two sectors.

[6] The estimated ratio of value-added to export value was 33% in 2009 (World Bank 2014a p. 55). This is very low compared to China (50%), or to the global average (70-80%), indicating that Tunisia does not add much value to the manufactured products it exports, that is, it is largely limited to assembly using imported inputs. Baghdadi et al. (2017) provide firm-level evidence of high margins but low productivity among export firms.

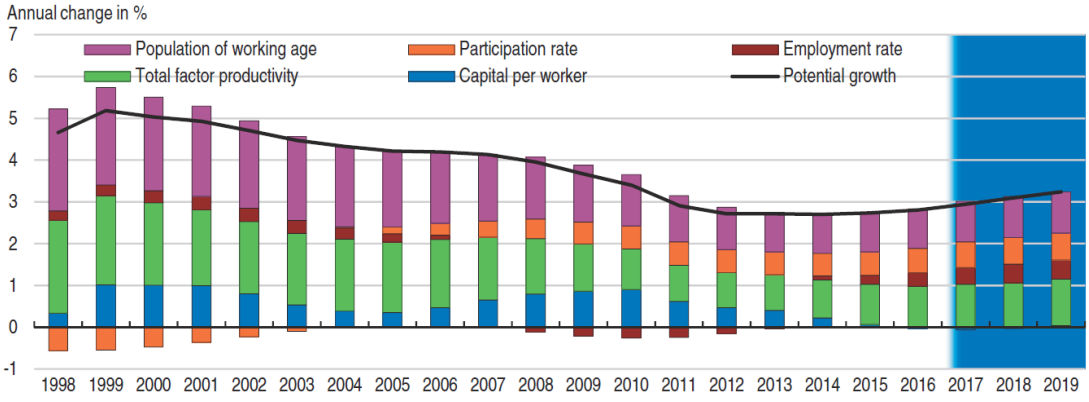
complex if they want to sell to multiple regions within the country (World Bank 2014a). Most offshore firms simply do not bother to sell to Tunisian firms at all. With regard to Tunisian onshore firms selling inputs to offshore firms, the dichotomous tax structures make the recovery of VAT and export taxes enormously complicated and slow, effectively discouraging these interactions.

If the Tunisian government has adopted a light touch with respect to export manufacturing in the offshore sector, the opposite has been the case for the domestic or onshore economy. The Tunisian state has traditionally sought to protect domestic industries and sectors from competition, and has intervened heavily in many of these sectors with the stated goal of ensuring provision of essential services or preserving jobs for Tunisian citizens. A substantial regulatory burden hampers operations of firms in many onshore sectors. Perhaps more damaging, regulations pertaining to entry requirements in some 50% of sectors (those operating in the onshore sector) create significant barriers to entry and competition, as discussed in the next chapter.

Such anti-competitive measures reinforce—and have been reinforced by—political and economic institutions whereby well-connected connected elites have successfully lobbied for high levels of protection from competition via entry requirements, favorable access to markets or inputs, or streamlining of otherwise burdensome regulatory processes. As a result, the formal onshore segment is made up to a large extent of well-protected, low-productivity firms. This in turn limits their attractiveness as suppliers to businesses in the offshore segment, which face price pressure from international competition. Together with cumbersome regulatory procedures noted above, this inhibits linkages with offshore firms that could spur growth. Consequently, the Tunisian economy lacks dynamism; firms that enter tend neither to grow nor shrink.

Reflecting these constraints on the domestic sector as well as the low productivity of export manufacturing discussed above, the contribution of total factor productivity growth to economic growth has been low relative to comparators, and has declined in the last two decades (Figure 3). Also of concern is that increasing capital per worker has been absent as a factor in overall growth since the revolution, as private investment has stagnated, contributing to declining rate of economic growth noted above.

Figure 3 – Decomposition of sources of economic growth, 1998-2019 (projected)



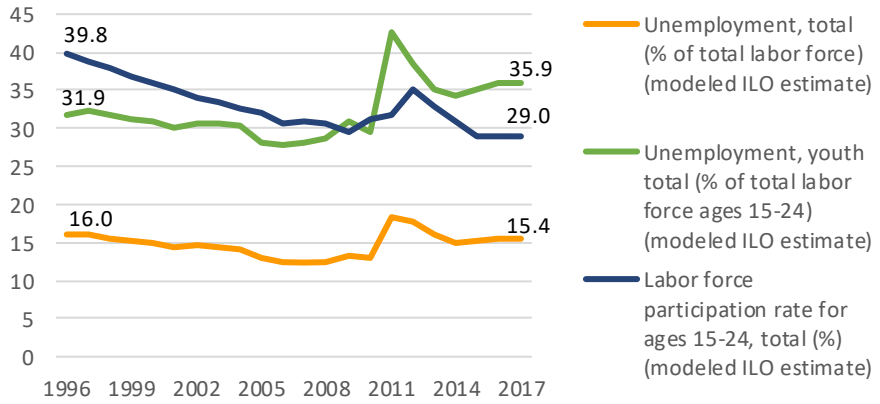
Source: OECD 2018

Reflecting inadequate private investment, the Tunisian economy has perennially proved unable to provide jobs for a growing workforce. Over the last 25 years, the national unemployment rate has historically ranged between 13-16% of the labor force.[7] It has been relatively stable over this period other than a spike shortly

[7] The unemployment rate for a population or sub-population is the share of the unemployed in the total labor force, where the latter is the sum of those who are working and those who are unemployed.

after the revolution (Figure 4). Youth unemployment is substantially higher than for the labor force overall, ranging between 27-35% prior to the revolution, and like unemployment overall, rising afterwards. Unlike overall unemployment, however, youth unemployment has remained substantially above pre-Revolution levels, not falling below 35%; the inability of youth to find jobs is thus a significant economic—as well as social—problem for Tunisia. Unemployment rates vary significantly by region as well (Annex 3, Figure 1) indicating the unevenness of Tunisia's economic development. The unemployment rate is also substantially higher for women than men (23% vs. 12.6% in 2017).[8]

Figure 4 – Tunisia unemployment and labor force participation rate, 1996-2017

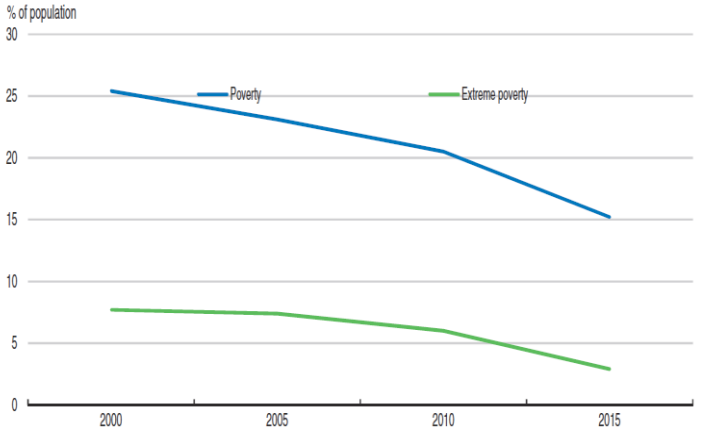


Source: WDI, 2018

Poverty and regional inequality

The poverty rate using the national poverty line in Tunisia is 15.2%, and using the international extreme poverty line is 2.9% (
). As shown, since 2000, poverty has diminished substantially, an impressive achievement that reflects favorable economic growth and the effectiveness of a range of social programs. More broadly, on most measures of well-being Tunisia scores more or less in line with lower income OECD countries. The exceptions to this generally favorable picture are employment and incomes (OECD 2018).

Figure 5 – National poverty rate, 2000-2



. For

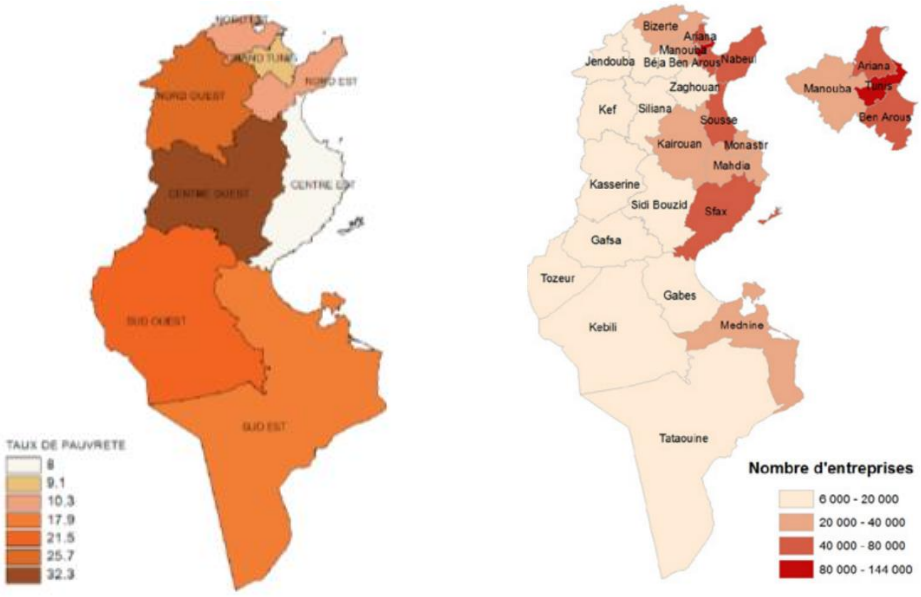
Source: OECD 2018, analysis of data from INS

While significant progress in poverty reduction and access to services occurred in all regions of the country, the progress has been highly uneven regionally, with much slower reduction in poverty in three of the four interior regions (OECD 2018). As Figure 6 makes clear, poverty remains concentrated in the non-coastal areas: the regions with highest poverty incidences, located in the center west, northwest, southwest and southeast, account for 40% of the population but 60% of the poor (World Bank 2016b). Poverty in Center-West region

[8] Annex 1 provides a discussion of barriers facing women in the labor market.

was 31%, twice the national rate. Significant disparities exist across regions of Tunisia in other key indicators as well—for living conditions, infrastructure, basic services, access to economic opportunity, and employment. These geographical patterns of poverty and well-being correspond to (and reflect) a highly skewed distribution of economic activity, in which the large majority of enterprises are found in the coastal areas. The map of enterprise density by location is essentially the mirror image of that for poverty incidence (Figure 6).

Figure 6 – Regional poverty rates and spatial distribution of economic activity (# of firms)



Source: Tunisia National Institute of Statistics, Tunisia in Figures 2018.

Tunisians in interior regions continue to feel disconnected from economic and other opportunities, which are concentrated on the "coast." The revolution was in part fueled by a sense of economic and political disenfranchisement on the part of residents of non-coastal areas and of youth, who felt that the prevailing political and economic systems offered little chance at *karama*, or dignity, given the perceived level of corruption, high unemployment, and limited opportunity available under the then-current regime.[9]

Political Stability

Tunisia is the only country to emerge from the Arab Spring with a successful democratic transition. In 2014, the country ratified a new Constitution and held presidential elections in a peaceful transition of political power. Tunisia's new democracy is a remarkable achievement, but it remains fragile. Democracy in Tunisia has managed to operate largely through a politics of consensus among elites. Governments have been coalition-based, bringing together individuals and parties with vastly different ideologies and policy approaches. One result of this has been the inability of the government to achieve the consensus needed to implement needed reforms. Party as a result, Tunisia has experienced varying degrees of political instability and social unrest, with both political and economic implications. It is important to keep in mind that strikes and protest activity are a reflection of the greater freedoms enjoyed in a newly democratic Tunisia. However, continued unrest, as well as frequent changes in government since 2011 and delays in legal reforms or in their implementation, have created a situation of significant policy uncertainty, which appears

[9] The 2014 Constitution changed the national motto to include *karama* specifically.

to have negatively affected foreign investment in the country. Finally, the terrorist acts of 2015 significantly reduced foreign tourism visitors and receipts, though those numbers began to recover in 2016 and 2017.[10]

The Government of Tunisia (GOT) recognizes the need for a new economic model of shared prosperity to meet the promise of the revolution. This includes taking concrete measures to address the long-standing inequalities and disparities between the developed northern and central coastal areas and the historically neglected eastern interior and south. The GOT has prioritized the installation of accountable governance mechanisms (including decentralization efforts), promotion of investment in interior regions, and the generation of employment for youth, to address these historical inequalities and decrease social unrest. MCC shares the GOT's desire to generate broad-based, inclusive growth by promoting investment in interior regions and generating jobs that are appropriate for the large stock of educated youth. The binding constraints identified in this report can explain economic performance prior to the revolution that contributed to current patterns of exclusion. Their alleviation promises to generate stronger employment and growth, and wider participation in growth. Ultimately, Tunisia needs reforms to spur new patterns of growth and investment. This requires replacing the system of state control and intervention with more appropriate governance, rationalizing state intervention, and increasing transparency and accountability, in order to reduce rent seeking and elite capture and thus to promote greater economic dynamism.

4. Binding constraints

a. Market Controls of Goods and Services

Extreme levels of state intervention and bureaucracy in goods and services markets create unreasonable regulatory requirements and compliance costs to firms, which unduly prohibit certain actors from entering and exiting, and reduce firms' competitiveness.

A well-functioning regulatory framework is a key component of any modern economy and ensures product quality and safety, consumer protection, and an adequate level of competition. However, if regulations are overly burdensome, they can reduce efficiency, investment, growth, and employment. Perhaps the most important means by which controls over markets may impact economic efficiency and growth is through impacts on market contestability, or the ease with which new firms can enter (and existing firms leave) a market. Contestability can be limited by restrictions and regulations of certain markets that make them inaccessible or unprofitable for investment by the private sector; differential treatment of firms within a sector; and the creation of natural or government-approved monopolies or oligopolies. Limited contestability of markets can reduce productivity by protecting incumbent firms and reducing incentives to improve processes, adopt new technology, or reduce costs. Rent-seeking that is encouraged by limited contestability, and the application of favoritism or cronyism, reduce equality of opportunity and limit the survival-selection of the best entrepreneurs and most competent firms.

Even if they do not prevent entry of new firms, excessive bureaucracy and regulations can impose significant costs or time burdens on existing firms that limit their ability to expand, and to extent these differ across sectors, discourage the allocation of economic resources to their best use. Growth is depressed if entrepreneurs are so burdened by government requirements that they cannot devote appropriate time and

[10] Interestingly, and somewhat encouragingly, Tunisian firms do not appear to feel the need to pay more for security than firms elsewhere; in fact they pay less. Firms in Tunisia expend on average 3.1% of annual sales for security services compared to 4.2% for all countries in the 2012-2014 EBRD BEEPS firm sample. The median firm pays 1% of sales, compared to 2% in the BEEPS sample.

resources to running their business, or if their returns are "eaten" by the state – e.g., through high taxes, long customs delays, excessive delays to open or close a business, or excessive labor market regulations.

As noted in Section 3, the Tunisian state has traditionally heavily regulated domestic industries and sectors, with investment restrictions covering over 50%of the Tunisian economy (World Bank 2015). The roots of the problem long predate the 2011 Revolution: Tunisia's former regime was marked by a very high level of cronyism. Recent analyses have demonstrated that protectionism and the implementation of barriers to entry and exit continue to limit the competitiveness of domestic markets, benefitting the well-connected (World Bank 2014a; International Crisis Group 2017). Many of the laws, regulations or investment incentives that were used under the Ben Ali regime remain in place. Many markets in Tunisia are highly concentrated—a legacy of earlier problems of governance—and there is an absence of well-established governance mechanisms to preserve (or re-introduce) the contestability of markets. Concentration per se does not necessarily indicate low competitiveness or efficiency as markets may achieve competitive outcomes even if they are highly concentrated, and scale economies may make having fewer firms more efficient. However, this will not be the case where concentration arises from restrictions that serve to protect incumbent and well-connected firms.

Market controls by the state encompass, in addition to regulations, government-approved monopolies or oligopolies, and price controls. We consider each in turn in what follows.

Market regulations. As noted above, about 50% of the Tunisian economy (located almost exclusively in the onshore or domestic segment) is subject to prior authorization from the state, based on World Bank estimates from 2014. This makes possible a high level of discretion, arbitrary decision-making, or outright corruption on the part of officials. In turn, this hinders entry of new firms, to the detriment of competition and productivity but to the benefit of incumbent or favored firms. Prior to the revolution, controls in specific service sectors served to benefit the business interests of President Ben Ali and his family through barriers to entry and regulatory burden on potential competitors (Rijkers et al. 2017). Most of the restrictive entry regulations are currently still in force in these sectors (World Bank 2014a). An analysis by the International Crisis Group (2017) concludes that economic elites have managed to maintain the privileges of exclusion provided by cumbersome and arbitrary authorizations.[11] In some sectors, rather than through a discretionary authorization process, entry may be determined in an ostensibly more transparent way based on whether certain requirements are met. However, the extent of the conditions or specifications is often not well justified by either economic logic or concerns for public safety or consumer protection, and may serve mainly to restrict competition and innovation. The ground transport sector is a clear example (Box 2).

[11] According to one business community member consulted for this report: "When you want to open a business in Tunisia, first you think about who you know, and then you think about the business opportunity, if there is one."

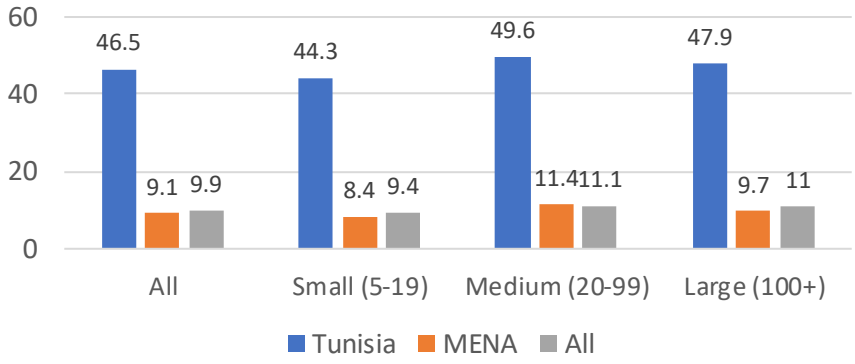
Box 2 – Regulation of Domestic Transport

The case of domestic transport, in particular ground transportation, illustrates the impacts and costs of high levels of government market controls. An OECD Competition Assessment (OECD forthcoming) highlights the extensive regulation of ground transportation, including a requirement that haulage companies have a minimum of 18 vehicles. Minimum fleet tonnage is also specified, and strict ceilings are imposed on vehicle ages. At the other extreme, individual proprietors, who have a separate legal status, are limited to just one vehicle. While reasonable age requirements have a public safety rationale (though rigorous safety inspections would be more effective in this regard), the fleet size requirements mainly serve to prevent entry of small companies that could potentially grow (or permitting sole proprietor ships from expanding), creating barriers to entry that protect incumbent firms. Further, incumbents that entered the industry before 2009 are not themselves subject to fleet size requirements. These barriers serve to restrict the supply of registered trucking services, while incentivizing the operations of informal firms that evade the restrictions and safety measures and offer services of lower quality. As a result, a high share of firms handle their own transport needs, which is highly inefficient, as vehicle use is not optimized and is characterized by substantial idleness. As a result, the price of road freight transport is relatively high in Tunisia despite an adequate road network (World Bank 2016a). Further, foreign ownership in this industry is prohibited, cutting off an important source of competition, investment and modernization.

Beyond barriers to entry, a wide range of regulations impose significant burdens on existing firms seeking to carry out common business actions. The most recent World Bank Enterprise Survey, from 2013 (Figure 7), shows Tunisia to be well above the MENA average with respect to the average number of days required to obtain an operating license for a specific activity associated with their business (39 vs. 20 days) and very close to the (already high) MENA average for days to obtain a construction-related permit (51 vs. 53 days). The same survey reveals that the overall burden on firms of dealing with regulation is very substantial in Tunisia. On average, an extraordinarily high share—over 45%—of senior managers' time is reported to be spent dealing with requirements of government (note this is comprehensive, so is not limited to authorizations). This is much higher than results from enterprise surveys elsewhere in the MENA region and developing countries generally. The Enterprise Survey data imply an annual revenue loss from this use of firm resources equivalent to 13% of sales (and a higher percentage of profits) (World Bank 2014a).[12]

[12]It is worth noting that 'offshore' or exporting firms, which as noted enjoy significant tax and other advantages relative to other firms, report a lower (though still high) time burden of compliance of 32% of managers' time for dealing with government requirements.

Figure 7 – Senior management time spent dealing with requirements of the government (percent), by firm size



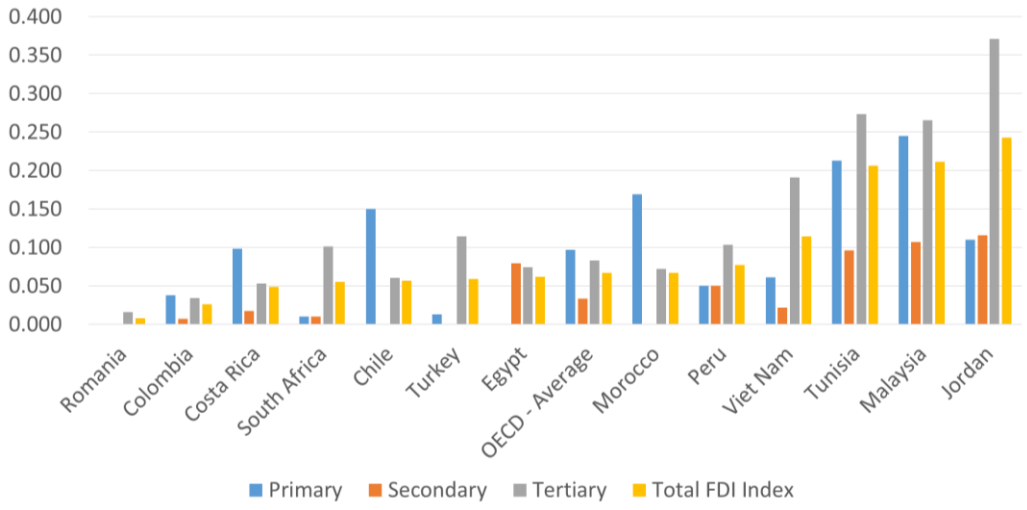
Source: WBES (2013)

Related to these problems, inefficient government bureaucracy was ranked at the top of the World Economic Forum constraints to business for Tunisia (followed by policy instability and corruption). Tunisia ranks 95th out of 138 countries on the WEF's 2016 Global Competitiveness Index, performing most poorly in goods and labor market efficiency and financial markets. Firms often find it necessary or expedient to evade burdensome and complex rules, and these common violations can be used against entrepreneurs to extract favors, bribes, or used by competitors to eliminate competition.[13] Regulatory complexity and corruption are therefore linked, as indicated by the fact that that inefficient government bureaucracy and corruption were two of the top three problems cited in the WEF's executive opinion survey.

Finally, barriers to entry also come through limits to Foreign Direct Investment (FDI). Among comparators, Tunisia has relatively very high ranking for FDI restrictiveness in services on the OECD's index of FDI Regulatory Restrictiveness, and an even higher ranking for the primary sector (agriculture) (Figure 8). As noted (Box 2), the domestic transport sector is completely protected from international firms as well as being highly regulated. Restrictions on FDI serve to further limit competition and innovation in these sectors. Notably, as seen in Figure 8, Tunisia scores much better with respect to FDI restrictions in secondary activities (industry), largely reflecting the different treatment of the offshore regime for manufacturing, which indeed was set up in part to attract FDI.

[13] A businessperson consulted for this report said that it was "impossible" to be an entrepreneur in Tunisia without breaking the law on a daily basis.

Figure 8 – OECD FDI Regulatory Restrictiveness Index, 2016



Note: 0=completely closed, 1=completely open.

Source: OECD.Stat

The last several years have seen some important steps toward regulatory reform, in particular with the Investment Law of 2016, which required the Government to inventory all activities subject to entry authorizations and the time periods, conditions, and procedures required to obtain the authorization. Work on removal of entry authorizations for an initial 27 (relatively minor) activities has begun. This is a highly significant development that promises to remove or lessen arbitrary and corrupt decision making and create greater transparency. However, interviews with officials indicate that work on authorization replacement and implication has been moving slowly. There are concerns surrounding the willingness of line ministries covered by authorizations to agree to real changes, and whether the specifications that are to replace authorizations will themselves be onerous and open to discretion or corruption.

Monopolies and Oligopolies Protected by Government. The Tunisian economy features an unusually large role for State Owned Enterprises (SOEs), which account for 13% of GDP and 4% of total employment (EIU 2015). Tunisia ranks among the highest in terms of the number of sectors (19) with an SOE (World Bank 2014a). In infrastructure, there are an estimated 32 SOEs, compared with an average of 9 in OECD countries. Tunisian SOEs are found in sectors such as cereals, olive oil, and meat, as well as in many manufacturing and service subsectors, such as hotels and restaurants and real estate. SOEs may be justified in infrastructure and utilities because of significant economies of scale, externalities, or conditions of natural monopoly. In other sectors, however, there is usually little economic rationale for them, and the presence of a large government-subsidized firm can distort the market and reduce competitiveness. Many of the SOEs in Tunisia are in network sectors that affect the competitiveness of other sectors in the economy – transport, telecommunications, logistics, financial services, etc. Prices in some of these sectors are regulated, and service quality is often a challenge. Regulation and protection is high in transport and logistics in Tunisia, which is generally not necessary from an economic point of view. A state-owned enterprise, STAM, is the sole cargo handler serving the Rades, the country's main port, with significant negative consequences for efficiency. Poorly functioning SOEs are also negatively impacting the soundness of Tunisia's banking system because of a large number of non-performing loans.

Price controls, subsidies, and trade restrictions. A plethora of government price controls and trade measures further contribute to market distortions in goods and services, especially in agriculture. Though

many countries impose price controls as part of food security strategies or for other policy goals, such as trade facilitation, the extent and number of controls on goods in Tunisia, whether in the form of price controls, direct and indirect subsidies, or tariff and customs duties, is unusual. An analysis by the African Development Bank (AFDB 2012) finds that the high effective rate of protection for farmers in cereals, livestock, milk, sugar and other products makes these lower-value items more attractive and less risky than other products that could be sold on the international market. Disparities in effective rates of protection thus lead to the misallocation of productive resources – capital, labor, and natural resources. In the case of cereals, prices in Tunisia are approximately 30% higher than the world price at the border, encouraging cereals production over other, higher-value items such as arboriculture or horticulture. Notably, with the exception of border intervention, orchards and citrus fruits are not subject to other intervention or regulation by the state, and they are the fastest-growing segment of the agricultural sector.

Customs and trade procedures The regulatory environment also encompasses trade-related procedures, including customs requirements as well as a range of importing and exporting permissions and technical inspections of imports. While such measures in some form are necessary for public safety and other reasons, in Tunisia, overregulation and corruption in customs has been a persistent challenge. The county ranks 110 out of 160 countries on the 2016 Logistics Performance Index, scoring lowest in customs; the LPI ranking has declined since 2012. The World Bank (2014a) found strong evidence of discretionary implementation of customs regulations and tariff evasion, complementing extensive anecdotal evidence of lack of transparency and corruption in this area. Similarly, the World Economic Forum's 2016 Enabling Trade Index (ETI) has Tunisia ranking poorly on many measures of efficiency and transparency of trade administration, including 128th and 127th (out of 140 countries) for efficiency of the clearance process and the time and predictability of import procedures, respectively.

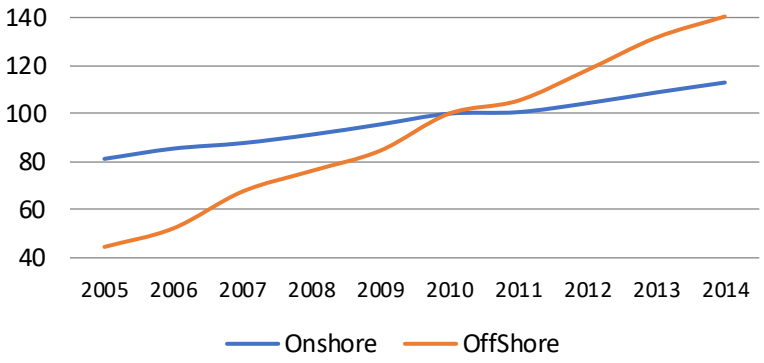
It should be noted the problem of cumbersome import procedures essentially concerns domestic or onshore firms, since the offshore sector enjoys a much lighter burden, including for importing inputs. Further, for the onshore segment, trade procedures encompass more than just the problematic customs administration, as multiple line or technical ministries also impose requirements and inspections. Such controls can ensure public safety for imported food and medicine as well as other goals, but in Tunisia they are clearly excessive for onshore firms. The WTO (2016) notes that more than 30 entities are responsible for technical controls in various sectors. Adding to the problem is the lack of a modern risk management system that would make it possible to reduce the number of actual physical inspections of cargo needed to clear imports for release. For example, currently the Ministry of Commerce, which is responsible for more technical inspections, physically inspects 100% of containers whereas the international benchmark is just 10%.

A range of evidence suggests that the restrictions described above have negative impacts on form investment, economic growth, and employment. This can be seen, for example, comparing the trajectories of the offshore and onshore sectors of the Tunisian economy. First, as noted, offshore firms enjoy a much simplified regulatory, customs, and tax environment, reflecting the Government's desire to incentivize FDI and export manufacturing. **Error! Reference source not found.** demonstrates the much more rapid growth in the number of offshore firms relative to onshore firms since 2005. These data show that the differential application to these two regimes of a range of market controls has had strong impacts on the structure of the economy, with the fully exporting sector thriving, in contrast to domestic-oriented firms.[14] Related to this, manufacturing has seen the greatest increases in value-added over time in recent years in Tunisia. Manufacturing activities are generally exempt from entry authorizations and are primarily in the offshore regime hence enjoy the wide range of benefits just noted. In interpreting these data, it should be kept in

[14] This is a form of the 'Camels and Hippos' test (see notes to Figure 23). Note that some firms in the onshore sector—namely, incumbent firms—may do quite well individually, as they enjoy protections from competition. It is the sector overall which is hampered.

mind that the comparison of firm growth captures impacts not just of differential regulatory controls but also the easier labor restrictions and tax advantages enjoyed by offshore firms.

Figure 9 – Evolution of the number of companies per scheme (index base 100 in 2010)



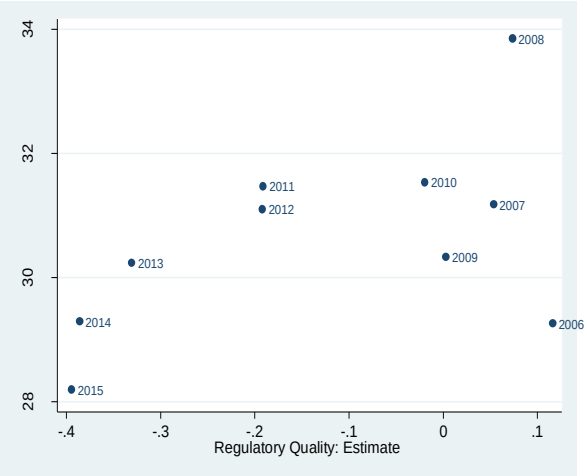
Source: INS http://www.ins.tn/en/themes/entreprises

Second, one can also see if investment or growth is responsive to changes in the regulatory environment (known as 'changes in changes' tests, see (see notes to Figure 23). **Error! Reference source not found.** plots industry value added share of GDP and Foreign Direct Investment in Tunisia for various years against the World Bank's World Governance Indicator for regulatory quality.[15] Both measures are positively associated with regulatory quality, with the effect stronger post-2008 than pre-2008. This test thus suggests that private (foreign) investment and industrial sector growth respond negatively to a higher burden of (or poorly designed and implemented) regulation. The test should be considered suggestive since the WGI indicator of governmental capacity and performance in the regulatory domain may be correlated with other factors affecting output and FDI, such as political stability, so that the correlations may capture more than impacts of regulatory quality. Still, they suggest that poor (and excessive) regulations constrain industry growth and FDI in Tunisia.

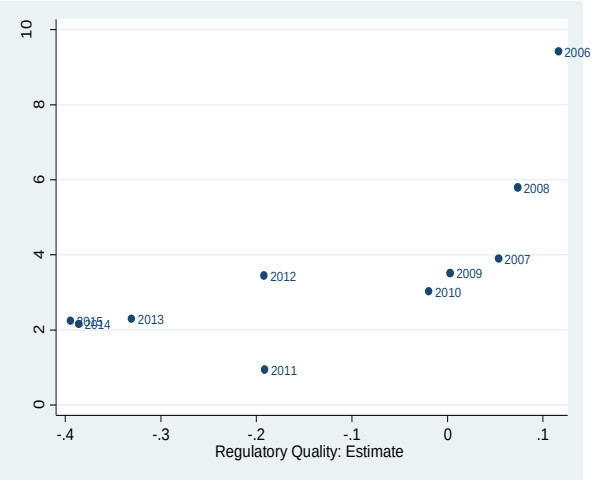
[15] The Regulatory Quality Index captures perceptions of the government's ability to formulate and implement sound policies and regulations that permit and promote private sector development. The estimate gives the country's score on the aggregate indicator, in units of a standard normal distribution, i.e., ranging from approximately -2.5 to 2.5.

Figure 10 – Relation of Industry Value Added Share and FDI to Regulatory Quality 2006-2015

Panel A: Value Added



Panel B: FDI



Source: WDI and World Governance Indicator, various years.

Industry-level or sector-level evidence of the effects of regulatory changes is difficult to come by, but we do have relevant data for one important industry, mobile phone service. This segment of ICT in Tunisia was highly regulated until early 2002, when liberalization reforms were enacted. An analysis by Debbichi and Hichri (2014) indicates that this led to new market entrants and consequently a sharp decline in the concentration of market power (see Annex 3 Figure 2). Liberalization also led to very sharp increases in the number of customers. Although this is a single, potentially idiosyncratic market, this example shows the potential for changes in the regulatory environment to increase competition and value added. This experience is also consistent with a substantial cross-country econometric literature, mostly but not only from OECD countries, demonstrating positive impacts of product market deregulation on competition, productivity and growth of sector value-added.[16]

Finally, an econometric analysis for Tunisia carried out by the World Bank (2014a, p. 97) used firm-level data to measure the effect of changes in price cost margins (PCMs) on labor productivity. PCM is a measure of market power hence (the lack of) competition, since firms with fewer competitors, all things equal, can charge a higher price. Using data from firms in 90 sectors from 2000 to 2010, the estimates indicate that a five-percentage-point reduction in margins in a sector generates additional growth in labor productivity of five percent in the sector, on average (higher for sectors without SOEs). If this occurred economy-wide, the results would be additional annual GDP growth of around 4.5 percent and approximately 50,000 new jobs per year. This does not measure the impact of changes in regulations per se, but given the impact of restrictive authorizations on firm entry and competition, we can infer that changes in these regulations would have substantial effects on productivity and growth.

Taken together, the benchmarking of Tunisia against comparators and evidence just described strongly suggest that high levels of market controls for goods and services constitute a binding constraint to growth in Tunisia.

[16] See Bouis et al. (2012); Égert and Gal (2016); Djankov, McLiesh, and Ramalho (2006).

b. Regulation of the Tunisian labor market

Inflexibility of wage determination, high social charges, and employment protection mechanisms reduce productivity by discouraging formality, the attainment of efficient firm size, and increasing youth and non-urban unemployment while depressing economic participation of the working age population, particularly women.

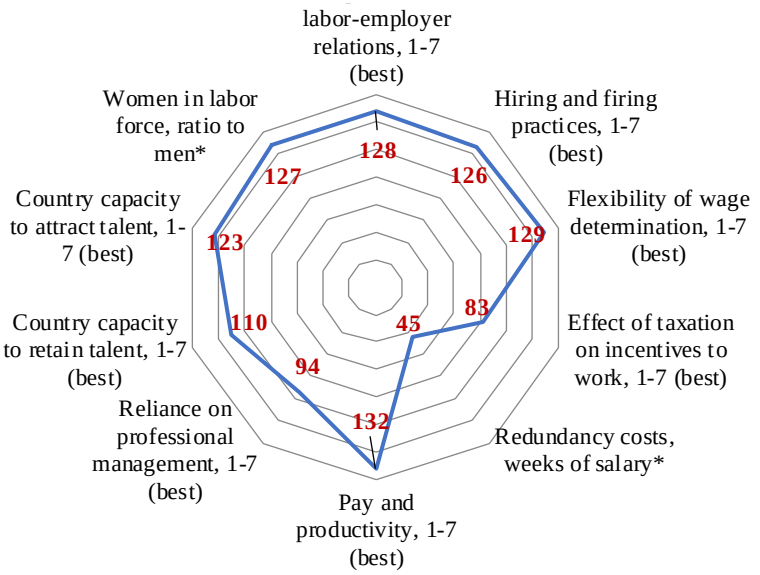
Labor markets regulations include minimum wages, employment protection legislation (governing hiring and job termination practices and job security), mandated benefits such as health care, and unemployment insurance. If designed well, these policies strike a balance between worker remuneration, workplace safety, and job security, on the one hand, and the flexibility that employers need to be efficient and grow, on the other. However, excessively burdensome regulation can significantly increase production costs, reduce productivity, and decrease firms' ability to adjust to demand shocks, ultimately reducing the demand for labor. Research on employment protection legislation (EPL) in developing countries, particularly regarding dismissal restrictions, shows that stricter EPL reduces formal employment, increases the size of the informal sector, and reduces labor flows and firm size (Boeri, Helppie, and Macis 2008). Generally, however, impacts appear modest, and other studies show no or very small impacts on employment and output (Betcherman 2015; World Bank 2012). This may be because employment protections also have countervailing positive impacts on productivity. For example, longer guaranteed job tenure may incentivize firms and/or workers toward more on-the-job training, increasing worker productivity. Reviewing the evidence, the World Bank's 2013 World Development Report on Jobs concludes that there is a 'plateau' effect of EPL and minimum wage legislation whereby over most of the range of policy intensity the negative impacts are small, allowing measures for protection and redistribution to be implemented with relatively low efficiency costs. Where policies are very restrictive, efficiency implications are more serious, while at the other extreme, protections will be inadequate. These findings suggest that when benchmarking against other countries, we should be particularly concerned when a country is a clear outlier (in either direction) with respect to labor regulation.

The 2012 Tunisia Constraints Analysis identified restrictive labor regulations as a binding constraint to growth, and recent evidence suggests that this remains the case. Tunisia ranks near the bottom—133 out of 138 countries—on the labor market regulations indicator for the World Economic Forum's Global Competitiveness Index for 2016-2017 (Figure 11). Highly regulated and inefficient labor markets are characteristic of many countries of the region, as the poor rankings of Turkey and Morocco indicate, but Tunisia does somewhat worse than even these comparators. Tunisia ranks poorest on the following sub indicators: pay and productivity (132); flexibility of wage determination (129); cooperation in labor-employer relations (128); female participation rate in the labor force (127); and hiring and firing practices (126) (**Error! Reference source not found.**). Tunisia thus does appear to be an outlier case with respect to labor regulation. In what follows we discuss several key features of labor market policies in Tunisia that impact these outcomes.

Regulatory costs of employing workers

Dismissal procedures in Tunisia are cumbersome and are likely to inhibit entry, expansion and exit of firms. The country is among the most restrictive in the world in terms of laws covering dismissal of permanent workers (Annex 3 Figure 3). Legally, firms are obligated to justify dismissals to the state, and a tribunal must weigh in on the appropriateness of termination. Evidence suggests that these restrictions are not merely on the books but are enforced. A 2009 analysis (Ben Jelili and Goaied 2009) found that only 14% of dismissals brought before a government employment committee end up being approved; usually the employer must prove financial difficulties or an important contraction of demand. [17] Dismissal periods, severance amounts, and procedural requirements also vary according to the centrally bargained agreements in each sector.

Figure 11 – Rank of Tunisia in Labor Market Efficiency Indicators



Source: World Economic Forum, Global Competitiveness Report 2017-18

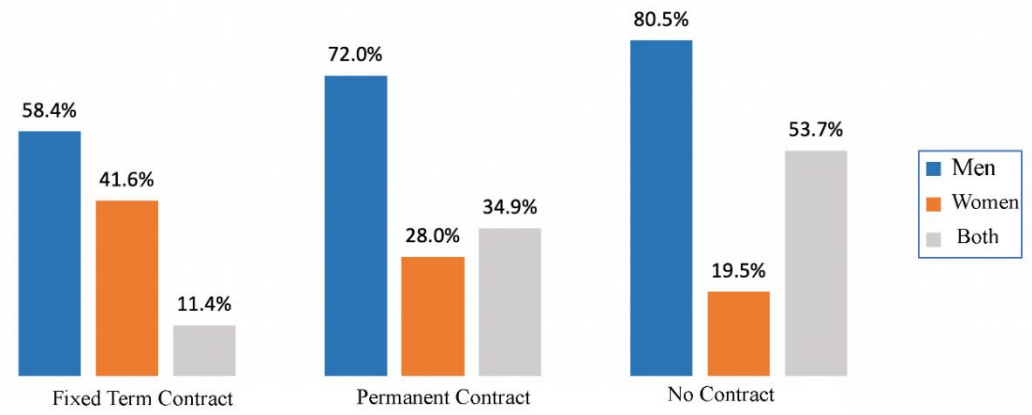
In contrast, when it comes to policies regarding dismissal of temporary workers, Tunisia ranks among the least restrictive countries (Annex 3 Figure 4). As a result, firms resort to hiring temporary workers. For example, in an audit of textile factories' compliance with labor codes, the majority were found to use short-term contracts as a substitute for hiring permanent workers (Fair Wear Foundation 2016). Tunisian law permits the hiring of workers on fixed-term contracts for up to 48 months which can be terminated more simply than open-ended contracts; after 48 months, the contracts convert to open-ended (essentially, permanent) contracts, and the strict regular termination rules just described apply. Another advantage for firms of the temporary hires is that they are not obligated to pay social taxes on these workers. Reflecting this characteristic of Tunisia labor market policy, a survey of enterprises with 10 or more workers conducted in 2004 revealed a low percentage of permanent/indefinite contract workers in Tunisia relative to Morocco and Algeria, and a high fraction of workers in definite or fixed term contracts (ROSES 2005), a pattern confirmed in 2010 ENPE survey data for Tunisia (Figure 1). The restrictive employment legislation remains in place, and enforced, so this behavior by firms to bypass restrictions through temporary is likely to be no less prevalent today.

The fixed vs. open-ended distinction creates a duality between protected and secure permanent workers, on the one hand, and vulnerable temporary workers with no protections or social benefits, on the other. Further, workers and firms will both be reluctant to invest in on-the-job training if the employee's relationship to

[17] OECD Employment Protection Legislation Database

the firm will last only a few years at most (even with renewal of temporary contracts this is likely to be the case, since there is still no job security). This has negative implications for productivity (OECD 2015b).[18]

Figure 1: Employment Modes



Source: National Survey on Population and Employment (ENPE) 2010

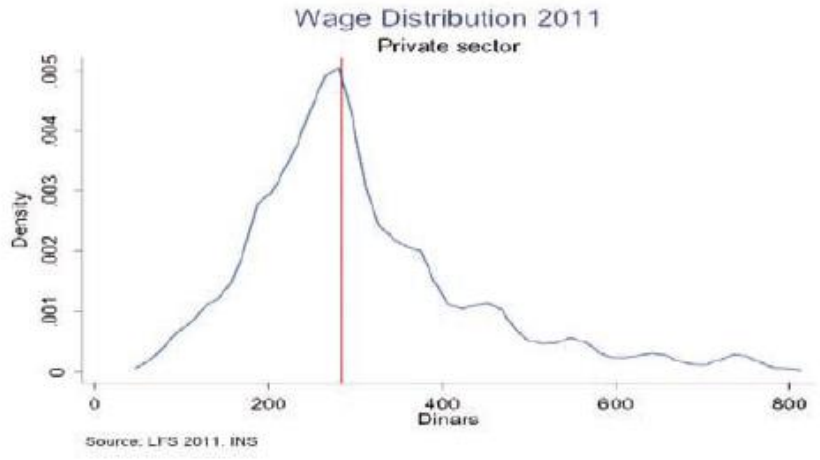
Minimum wage legislation

Minimum wages can help protect vulnerable, low-income workers and those in labor markets where employers have market power to set wages. If too high, however, minimum wages may discourage firms from hiring new workers, especially youth, whose work experience hence productivity are relatively low. Further, national minimum wages in Tunisia are set annually, and sometimes retroactively, creating uncertainty for employers while imposing wage changes that may not be linked to changes in productivity. Analysis by the World Bank (2014a) indicates that the minimum wage in Tunisia overall is not high relative to labor productivity—it was only 24% of average value added per worker, below the ratios of Lebanon, Jordan, and Morocco. However, given the wide dispersion of productivity among firms in the economy, it may still represent a constraint for many firms, depressing employment and growth.

To assess whether the minimum wage is limiting employment, a standard test is to see if a large share of workers are paid precisely the minimum wage. This would indicate that it functions as a floor to wage offers and that firms would be willing to hire more workers if they could pay a lower wage. The wage distribution in 2011 (Figure) does show a pronounced spike at the minimum wage, suggesting that for many—presumably lower-productivity—employers, the minimum wage constrains hiring. At the same time, the distribution shows a substantial share of workers being paid less than the minimum wage. These wage earners are presumably informally employed, as firms seek to evade the constraint by avoiding formalization. Therefore the figure also points to efforts to evade the constraint on the part of many firms. Simulations for Tunisia (Angel-Urdinola, Nucifora, and Robalino 2015) show that in the absence of a minimum wage, the youth unemployment rate and self-employment rate could be reduced by 6% and 2.5%, respectively, and that formal employment could increase by as much as 6%.

[18] Perhaps surprisingly, only 15% of firms in the 2013 ITCEQ enterprise survey cite labor regulations as a moderate or major/severe obstacle to current operations (the share is highest for firms of over 100 workers). This may be because many businesses are able to evade the constraint and remain flexible in their hiring by operating as informal firms or by hiring workers essentially informally through the fixed contract mechanism described above.

Figure 13 – Wage distribution compared to minimum wage



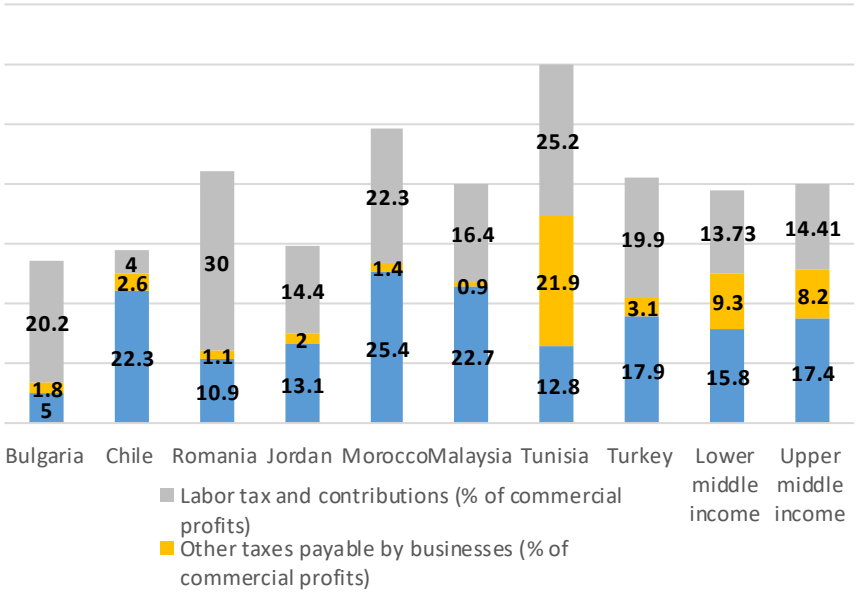
Source: World Bank 2014a, using 2011 INS Labor Force Survey data. Red line indicates non-agricultural work minimum wage for 2011 (*salaire minimum interprofessionnel garanti*).

Fiscal costs of employing workers

As shown in

4, total taxes as a percentage of the profits of Tunisian companies exceed the world average and the average of countries with similar per capita incomes. Relative to comparators like Morocco, Egypt and the countries of Central Europe, Tunisian firms face a very high official burden in terms of taxes: the total tax rate on firms is about 63%, making Tunisia something of an outlier. It should be noted that this the de jure, not de facto burden, and many firms may evade the high rates in various ways or benefit from Tunisia's extensive system of tax incentives. That said, it is likely the very high official tax rates on firms act to significantly distort incentives, in part through firms' evasive behavior (including informalization), disincentivizing formal hiring. As shown, the differences with other countries are due to very high employer contributions to social security (25%) as well as to 'other taxes' like the fuel tax and tax on vehicle traffic. The high social costs per worker raise the gap between what the worker is paid and the actual cost of the worker to the firm, hence raises the costs to firms of hiring labor.

Figure 14 – Firm Tax Obligations as a Share of Profit



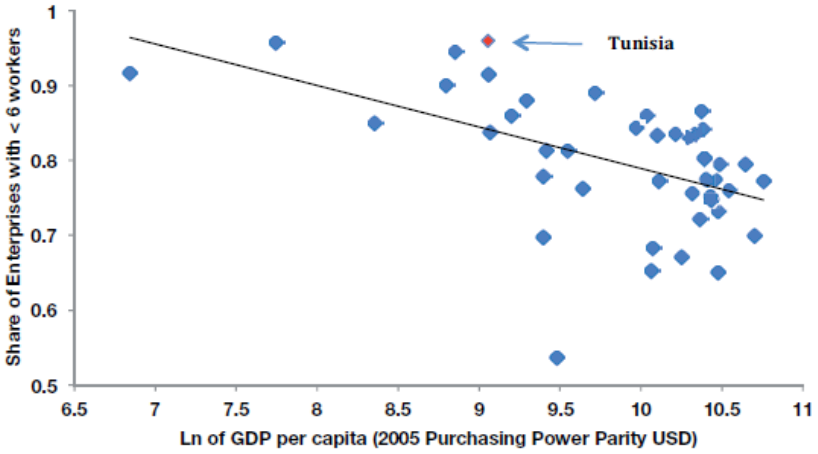
Source: World Development Indicators

These taxes on labor fulfill an important social function in that the funds are used to insure workers' well-being. However, together with restrictive labor regulations, the costs are high enough that they can discourage hiring, or hiring workers formally, or can discourage firms themselves from formalizing. Ultimately, the overall level of protection of workers in Tunisia is likely significantly lower than it could be, since the large number of informally engaged workers receive no benefits at all.

The negative employment impacts of restrictive employment protection laws and high per worker fiscal costs labor are reflected in a small average size of Tunisian firms. As reported in the 2012 Constraints Analysis, Tunisian firms tend to have fewer employees than would be expected given the country's level of development. As shown in Figure 2, Tunisia lies well above the regression line showing the relationship of the share of microenterprises (under 6 workers) and log of per capita GDP. The Tunisia data used in the regression analysis is from the 2010 INS enterprise registry. More recent data from the INS registry indicate a continued predominance of such very small enterprises: in 2015 their share was 97 percent.[19] This 'camels and hippos' test provides strong evidence that larger firms—i.e., those more intensive in labor—find the Tunisian economy a difficult environment in which to thrive.

[19] For a regional comparison, World Bank (2014a) reports that only 37% of Moroccan firms were 'small', defined as fewer than 10 workers. It should be noted that the INS registry data for Tunisian enterprises may be somewhat unreliable because of incentives to underreport a firm's number of employees, level of wages, or both, in order to avoid high social charges and taxes.

Figure 25 – Fraction of firms with fewer than 6 workers



Source: GEMS data on entrepreneurship (various years) and authors' calculation based on INS data (2010) and INS (2007)[80]

Source: GEMS data on entrepreneurship and calculations based on INS data

This pattern may reflect not just the high regulatory and fiscal costs of hiring workers, but also market governance burdens discussed earlier that would encourage the predominance of small informal firms that can evade such restrictions. However, Tunisia is unusual in that virtually all enterprises are officially registered and pay some taxes. Therefore, small size does not provide a way to avoid most market regulation (though burdens are set disproportionately low for microenterprises), while it does provide a means of avoiding high labor costs. Therefore, it appears likely that high risks and costs of hiring workers formally are the main cause of the disproportionately high share of small firms in Tunisia. This conclusion is consistent with a body of evidence from developing countries showing the negative effects of labor regulations, particularly restrictions on dismissals, on firm size (Almedia and Dusanlo 2012; Almeida and Carneiro 2009). Limits to firm size in turns place limits on firm productivity growth, not to mention on employment itself.

Gendered impacts of labor market regulation. The wage setting mechanisms, high social charges, and employment protection laws discussed above affect both men and women. However, other areas of labor market regulation are specifically or largely gender-focused and thus will have particularly strong impacts on women's economic participation and opportunities for advancement. These include laws regarding discrimination based on gender, child-related leave and other family benefits, and women's access to certain forms of work. In Tunisia, these laws generally offer little protection for women in the workforce, and sometimes actively inhibit it. While dismissal of pregnant workers is prohibited, and mothers are entitled to nursing breaks at work, child-related leave entitlements are particularly low (30 days of paid maternity leave, with no unpaid leave entitlement, and just one day of paternity leave). This, together with the high cost of childcare, likely contributes to women's very low labor force participation (OECD 2015a; see Annex 1 for further discussion of women in the labor market). Tunisia has no laws mandating non-discrimination on the basis of gender, either in pay or hiring. Finally, the Labor Code prohibits most night work for women, as well as their participation in certain occupations that are deemed unsafe or unsuitable for women. In sum, while the state in Tunisia has a very strong regulatory presence in the labor market overall, it has few regulations that protect women's rights in the workforce, and some that directly act to prevent their participation.

c. Inadequate and variable supply of water in interior regions

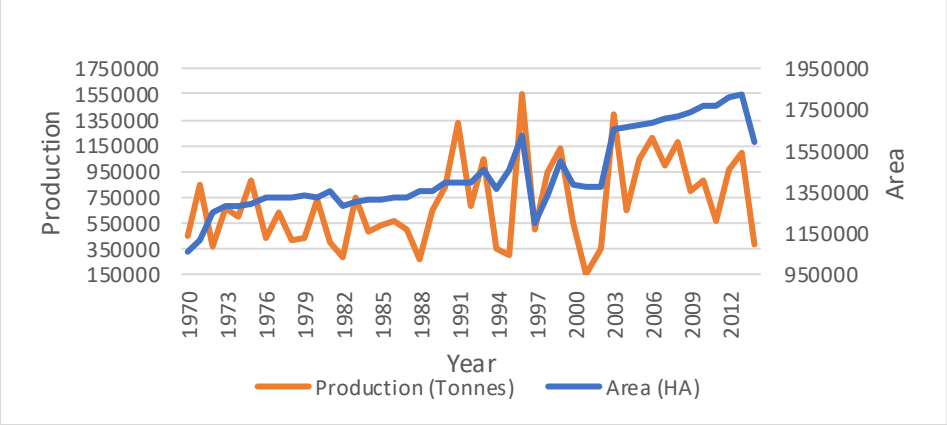
Inadequate and variable supply of water inhibits medium and long term private investment in interior regions and reduces the sustainability of those investments, primarily in agriculture.

As both a vital determinant of health and an input into production, adequate water infrastructure is essential for inclusive economic growth. Tunisia's geography makes it among the most water-scarce countries in the world and the country also faces significant challenges with water quality—especially rising salinity levels—that are exacerbated by climate change. Due to decreasing rainfall and over-exploitation of renewable water resources, once numerous natural springs that fed oases, rangelands, and other agricultural lands have dried up in the last few decades, and the majority of central and southern aquifers are depleted or are being over-withdrawn (Verner, 2013). This raises the costs and risks of investment in interior regions, particularly for agriculture and agro-processing—the main employers in these regions.

A growing urban population, along with industrial and agricultural expansion, has put immense pressure on Tunisia's already scarce water resources. Between 2012 and 2013 alone, water use grew by 12%, primarily due to Tunis' increasing urban population (World Bank 2014a). Still, agriculture accounts for 80% of water use in Tunisia, close to the average for Africa and Asia; household use is 15%, and industry accounts for 5% (FAO, 2011). Future demand for water is expected to increase due to population growth, urbanization, and growth in industry and tourism, and is predicted to surpass supply by about 2030 in the absence of more efficient water conservation strategies (UNFCCC 2013). Already, surface and renewable groundwater resources in Tunisia are almost completely appropriated.

Compounding the effects of growing demand, rainfall-related risk appears to be increasing. Farmers have abandoned agricultural land in regions of the country (e.g. Gabes) where they compete for water with industry (The Economist, 2014). Given the importance of agricultural exports for the Tunisian economy, the vulnerability of agriculture to water-related shocks has widespread consequences. Olive oil production and exports (Tunisia's second largest export), in particular, have become highly variable. In the 2013/2014 harvest season, due to drought, olive oil exports accounted for just 1% of the country's total exports, with a value of $223M. Yet by the following season, 2014/2015, Tunisia exported $924M worth of olive oil—6% of total Tunisian export value. Figure 16 shows that variability of total output has increased substantially in recent decades while overall output has increased less than proportionately than has the area of land cultivated, indicating falling productivity. In 2016-2018, a lack of water due to drought and distribution losses once again reduced the olive harvest, this time by 55 percent, according to data from the National Olive Oil Office. To offset variable rainfall, olive producers are increasingly using irrigation from wells (Olive Oil Times, 2017), a practice that may accelerate the depletion of non-renewable water resources.

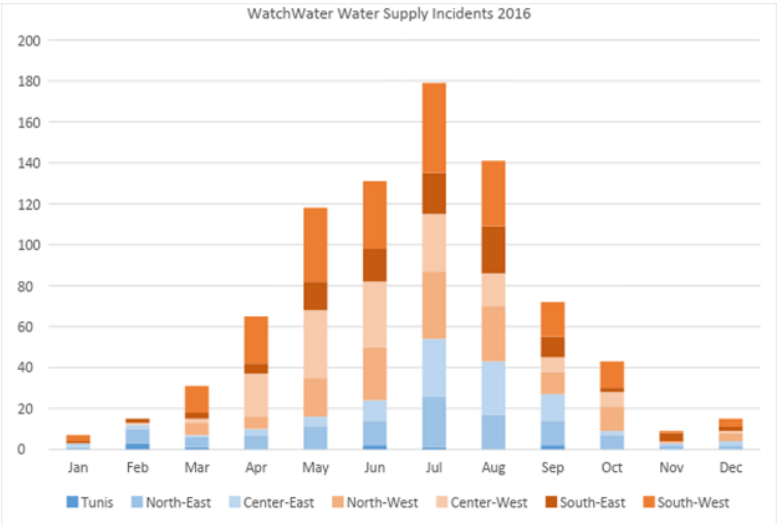
Figure 16 - Olive output and area cultivated, 1970-2013/14



Source: FAO, 2014

In the summer of 2013, the greater Tunis area, with a population of 2.5 million people, experienced its first cuts in water services due to shortages (World Bank 2014a). Water supply cuts are becoming more regular and occur outside of drought years (Ministry of Agriculture, personal communication, 2017). By Mid-May 2016, authorities had announced more than 700 water supply disruptions. As shown in Figure 17, interior regions are clearly disproportionately affected by water shutoffs, but they also occur in northern and central areas where water is more abundant.[20] Water shortages have led to protests and social unrest. Following protests over severe water shortages in 2016, the media reported warnings of a 'thirst uprising'[21]

Figure 17 - Number of water supply disruptions by month and region, 2016



Source: Watchwater

[20] Note, however, that some of these cuts appear to be regular outages for maintenance by SONEDE.

[21] News24, September 9, 2016. http://www.news24.com/Africa/News/tunisia-water-shortages-spark-thirst-uprising-warning-20160919-3

Farmers and firms have taken private actions to circumvent the growing water constraint, in ways that do further harm to sustainability of water resources. Ministry of Agriculture data indicate that many farmers have attempted to get around increasing water scarcity by drilling their own deep aquifer wells, which is both costly and illegal hence potentially risky to them. Between 2010 (when the Ministry began estimating the number of illegal wells) and 2015, over 10,000 illegal wells were created, from an estimated base of just 1,636. In addition to drilling new wells, farmers have been illegally transforming wells of less than 50m, which previously did not require a permit (but now do, as noted), into deep wells. This results in water extraction being shifted from superficial phreatic aquifers (which recharge, hence are sustainable) to deeper, confined aquifers which do not recharge hence are not sustainable. In Sidi Bouzid governorate, for example, 90% of wells were transformed from extraction of sustainable to non-sustainable sources (USAID, 2017). In 2015, an additional 273 million m^3 of water was illegally exploited from the country's deep aquifers.

The cost of drilling an illegal well ranges from $200 and $250 per meter (FAO, 2009). Hence the typical drilling costs for a 100m deep PVC-lined borehole in Southern Tunisia are estimated to be $24,290. While unit cost varies based on how much is pumped from these wells, private wells startup plus pumping costs over 5 years average $0.22/m3 of water extracted. Public irrigation provided by the government, in comparison, cost just $0.06/m3 (Tetratech consultant report, 2018). As this 'circumvention of the constraint' test shows, private businesses are willing to incur substantial cost to access water through illegal wells, indicating that inadequate or variable water supply is a binding constraint in agriculture.

Further, these purely private costs underestimate the social costs of this circumvention behavior, given the potential effects on future water supply. Troublingly, in many parts of Tunisia, the groundwater stress index (which measures the ratio of groundwater withdrawals to the local recharge rate) is greater than one. Any value greater than unity is considered unsustainable, as continued groundwater consumption at these levels reduces future groundwater availability. Therefore unmanaged drilling represents a tragedy of the commons whereby the private actions of individuals do not account for the future social costs of that behavior. Finally, as additional evidence of circumvention, we note that in central Tunisia over 80% of perimeters are now equipped with drip or targeted irrigation methods to maximize the output of each m3 of water. In field visits, farmers have indicated that these systems are recent additions in response to water shortages.[22]

While the largest impacts of water constraints would be felt in agriculture, other industries are not completely isolated from impacts, especially if they are located in water-scarce interior regions. In the 2015 2015 ITCEQ Survey of manufacturing and services firms, approximately 18% of firms operating in interior regions cited access to, or the cost of, water as a moderate, major or severe obstacle to the firm's current operations. Although this is a relatively small percentage, many firms have likely already circumvented the lack of high-quality water resources by investing in private desalination plants. Currently, there are 48 large water desalination plants in Tunisia, most of which are run by industry associations to provide their own water supply at higher cost than public tariff rates. Additionally (World Bank 2009) reported on the frequent resort by the private sector to small desalination plants industrial self-supply, at higher cost.

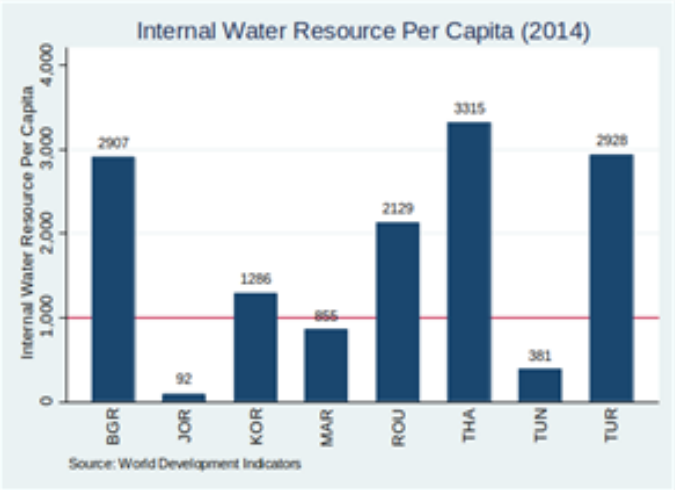
Global climate change and Tunisia's location in a water-scarce climatic zone are inescapable realities, as is the future increase in water demand from a growing population. Nevertheless, much can be done to ensure the growth and sustainability of water-dependent sectors, through investments that increase the efficiency of water use in agriculture and discourage over-extraction of the country's scarce supply.

[22] They are not a response to direct price increases, since the public tariff has changed very little.

Overall water scarcity and regional disparities

The World Bank considers Tunisia to be "water poor", with a renewable water availability of 377 m^3 per capita, which as Figure 18 shows, is well below the average of 1,200 m^3 per capita for the Middle East and North Africa (MENA) region, which is already the most water scarce region in the world (worldwide, average water availability per capita is 7,000 m^3; WDI data). Tunisia is in the bottom 10% of countries in terms of water sustainability according to FAO's Aquastat survey (World Bank WDI, 2016). The majority of potentially available water resources are internal renewable surface and groundwater resources, although the country does have access to some other water sources. Total internal renewable water resources are estimated at 4200 Mm^3 per year (CEDARE, 2014), with unconventional sources (treated wastewater, desalinated water, and drainage water) representing another 405 Mm^3, and external renewable resources an additional 400 Mm^3. Non-renewable groundwater resources add a further 650 Mm^3 per year.

Figure 18 - Internal water resources per capita



In addition to low average availability, Tunisia experiences strong seasonal variability in both rainfall (as noted above) and surface water, as well as extreme inter-annual variability including frequent severe droughts (Bouchruka et al., 2015; World Bank 2009).

There are also stark spatial differences in water resources across Tunisia's three main water zones of North, Central, and South. The Northern region contains approximately 59% of the country's water resources, while the Center and Southern regions contain 18 and 23 percent, respectively (Table 1). The result is considerable regional disparities in access to water. The Ministry of Agriculture has identified 'red zones' where aquifers are at high risk of depletion, and in recent updates to these maps almost all the red zones are located in Central and Southern Tunisia.

Table 1 - Spatial Distribution of Water Resources in Tunisia (Mm^2/year)

	Far North	North	Center	South	Country total
Supply of surface water *(Mm^3/yr)*	960	1230	320	190	2700
Groundwater *(Mm^3/yr)*	395		216	108	719
Deep groundwater *(Mm^3/yr)*	269		326	822	1417
Total potential resource *(Mm^3/yr)*	2854		862	1120	4836
%	59		18	23	100

Source: World Bank (2009)

Water Resource Management

Tunisia's Water Sector Strategy emphasizes the need to secure adequate drinking water for all Tunisians while at the same time ensuring economic development, especially agriculture in interior regions. Within agriculture, policy has emphasized improving the efficiency of irrigation systems and water resources management. Water management in rural areas is overseen by water user associations (WUAs), which are in charge of the operation and maintenance of canals, other infrastructure, and investments in improving irrigated perimeters. WUAs charge fees for water to members, but less than 40% of fees are actually collected (Abdelhafidh and Bachta 2017). The price of water charged by the WUAs varies widely, between TND 0.5 and 1.25 per m3. Farmers have complained of poor water quality and water cutoffs (Watersum, 2016) and poor governance (Tunisian Union of Agriculture and Fisheries, personal communication 2017).

In earlier decades, accessing groundwater resources at a depth greater than 50m required authorization from the Ministry of Agriculture, but since 2009, this applies to wells less than 50m as well (FAO, 2009). Despite this, the rate of groundwater exploitation is consistently above 100% and that of deep groundwater exploitation is 80% (Louati and Bucknall, 2009). Throughout the 1980s and 1990s, the GOT invested heavily in improving the efficiency of water use through water infrastructure projects and subsidization of private investment in modern irrigation technologies. Today, however, the water infrastructure is outdated and in poor condition. In addition to 40% 'leakage,' sedimentation is estimated to have led to an overall reduction in reservoir capacity of 40%, a result of poor watershed management. Large reservoirs specifically have experienced a reduction of 25% (Ministry of Agriculture, personal communication 2017).

While public understanding of the water crisis is growing, the continuation of low tariff rates works against this understanding—as well as, of course, incentivizing over-use. Farmers directly experiencing shortages have decreased their reliance on water-intensive three-tier cropping (growing a primary crop and then adding fruit and vegetables on the field). However, water-intensive fruits and vegetables remain common for farmers not directly suffering water shortages; overall, a major shift away from water-intensive industries has not yet occurred, the result of intentional or inadvertent policies that encourage such activities in agriculture, especially artificially low water tariffs. Such low private costs lead to unsustainable water use and thus silently shift the costs to future producers and citizens.

Impacts of Climate Change

Arid conditions, high rates of evaporation, and low and variable rainfall make the North African region particularly vulnerable to climate change. The impacts will manifest primarily in the region's rainfall levels and aquifer recharge (replenishment) rates (World Bank, 2016). Annual rainfall has decreased 5% per decade in the northern part of Tunisia since 1950, even while heavy rainfall events have become more frequent (Verner et al. 2013). The projected decrease in rainfall by 2050 (relative to the 1961-1990 period) ranges from 10% in the Northwest to 30% in the extreme South of the country. Climate models predict that Tunisia will be one of 33 countries to face 'extremely high' water stress by 2040 (WRI 2015); temperatures in Tunisia will increase on average by an estimated 2.7 degrees over the same period. Furthermore, dry years will become more frequent and more intense by 2030, and extremely dry and extremely humid periods will alternate between seasons. These climate change impacts, particularly in the south of the country, are expected to further exacerbate already fully appropriated and over-stressed aquifers. Already, in the 2017 Ministry of Water Willingness to Pay Survey, farmers in central and southern Tunisia report experiencing regular water shortfalls 62% and 81% of the time, respectively.

Since rural households relying on agriculture are disproportionately poor or else vulnerable to poverty, climate change will, in the absence of strong countermeasures, lead to higher poverty and exacerbate national inequality. Modelling reported in Verner et al. (2013) suggests that, depending on the climate change scenario, farmer incomes will fall by between 4% and 13% by 2030. While all groups experience a decline, effects are smaller for rural nonfarm households and smaller still for urban households.

Conclusion

The evidence demonstrates that inadequate and variable water supply is negatively impacting agricultural output and incomes, especially in poorer and rural areas of Tunisia. In these areas, water scarcity and variability is clearly a binding constraint to economic growth. Output responds strongly to variation in water supply, as indicated by the strong year to year variability in olive oil production. Agricultural producers are taking extensive and costly actions—especially, digging illegal wells—to circumvent the constraint. While it may not constitute an overarching constraint to growth like the two previously discussed binding constraints, the significance of the water constraint for growth in rural areas--growth that would help to rectify the country's persistent regional inequalities and rural poverty--is evident. Further, while a larger (national) binding constraint to growth from inadequate water supply may be a future problem, sustainability issues require urgent action now to forestall that crisis.

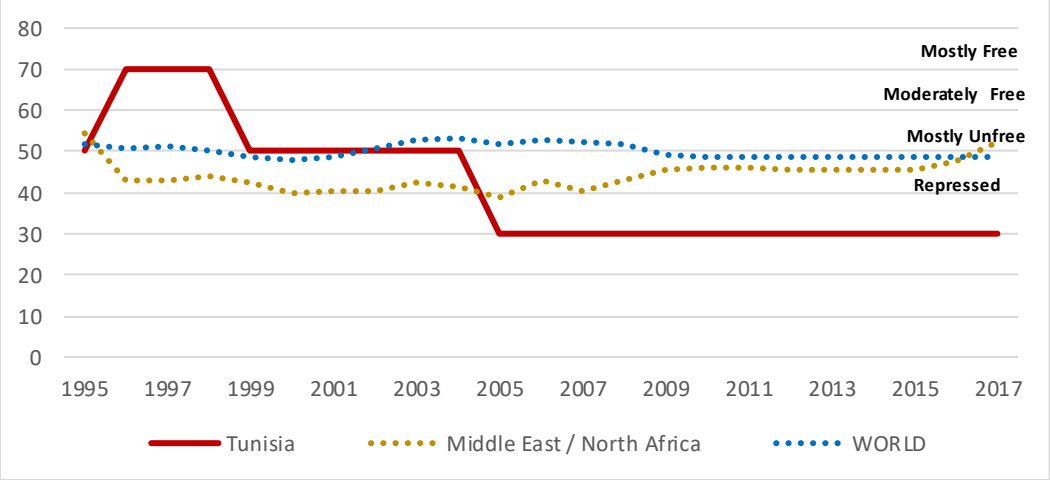
5. Other constraints considered

In addition to the binding constraints described above, we assessed a variety of other potential constraints, and conducted tests on them as warranted by initial review of the literature, discussions with stakeholders, and availability of data. This section briefly covers these items.

a. Access to Finance

Problems of access to finance can pose a binding constraint to growth if finance is costly enough to discourage potential investors from undertaking high-return investments that would otherwise be profitable. Tunisia's financial sector is underdeveloped, with various structural problems and distortions that merit attention. The country is ranked very poorly—127th out of 138 countries—by the World Economic Forum on the soundness of its banks. The banking sector, as with much of Tunisia's economy, is affected by high levels of market control and state intervention. While there are many private banks in the country, market competition remains low, with the three largest state-owned banks accounting for 37% of total banking sector assets (World Bank 2014a). The Heritage Foundation has consistently given Tunisia low scores on its Financial Freedom Index (placing it firmly in the 'repressed' category) due to the control exercised by the central government over the country's financial sector (Figure 19). Since 2005, Tunisia has earned a score of 30 out of 100 on the index, well below the MENA region average. Consistent with these low scores, the Doing Business surveys ranks Tunisia 101st in the world in Getting Credit in 2017.

Figure 19 – Heritage Index of Financial Freedom



Source: The Heritage Foundation

The banking sector is limited by a lack of deposits, a reflection of low financial sector penetration, and by the burden of many non-performing loans (NPLs), which affect banking system soundness and reduce the amount of capital available for lending. NPLs as a share of total bank loans in Tunisia stood at 14% in 2016, much higher than the averages for lower middle income and upper middle-income countries of 6% and 3.7%, respectively (source: WDI). The ratio for Tunisia has improved considerably since the early 2000s, when it was well over 20%. A driving factor behind these high rates of non-performing loans—and thus Tunisia's low international ratings for banking system soundness—is the relationship that banks (particularly public banks) have with heavily indebted, poorly performing state-owned enterprises (SOEs) and favored industries. Many banks still maintain their ties to these firms regardless of their viability, diverting resources from more promising new projects. The poor performance of Tunisian banks is largely concentrated among the state-owned banks, reflecting their much higher share of NPLs.

Despite these weaknesses, domestic credit to the private sector by banks as a percent of GDP has grown slightly over the past decade in Tunisia, reaching 75.4% in 2015 (Annex 3 Figure 5). This is broadly similar to that of other countries in the region throughout this period, if well below upper middle-income countries such as South Korea, Malaysia and Thailand. A similar picture emerges looking at trends in the absolute volume of lending. By this measure as well, credit to the economy has been on an upward trend, including since the Revolution. Medium and long-term loans, which are generally used to finance projects and larger investments, increased from 24,924 MDT in 2010 to 37,501 MDT in 2015 according to Central Bank of Tunisia data. This expansion of credit suggests that overall, lack of finance may not be significantly constraining the economy.

An additional source of evidence is the level and trend in real interest rates, as a close proxy for the shadow price of financing—which, if unusually high, could signal a supply of finance constraint to private investment. WDI data for 200-2015 indicate that interest rates in Tunisia remained broadly similar to those of comparator countries including Bulgaria, Chile, Jordan, Korea, Malaysia, Romania and Thailand, suggesting that the shadow price is not unduly high (Annex 3 Figure 6). However, interpretation is complicated by the fact that the Tunisian government imposes an interest rate cap on the rate banks can charge on loans. Observed interest rates thus may not reflect the true costs and risks of investment projects, and credit rationing may prohibit riskier projects from being financed. Consultations indicate that this was not a constraint for lending to larger, more established clients, but it likely limits banks' ability to price credit appropriately to less established or more risky clients, hence their willingness to lend to such firms.

There is evidence that access to credit is a problem for smaller firms. In the 2013 World Bank Enterprise Survey, almost half (46%) of small firms (between 5 and 20 employees) reported that access to finance was a moderate or severe obstacle to their operations; the percentages were lower for medium-sized firms of 20 to 99 workers (31%) and large firms of more than 100 workers (26%).[23] It appears that banks largely cater to a relatively small group of large, well-established firms. Most banks have not developed tailored SME solutions despite the predominance of small firms in the economy.

The weaknesses noted above may well pose substantial problems for growth in the future and suggest that some firms are constrained by lack of credit. Overall, however, the evidence, in particular that the volume of lending is not low for a country at Tunisia's level of development, suggest that lack of access to or high cost of finance does not currently pose a binding constraint to private investment and economic growth.

b. Human Capital

Tunisia has achieved impressive results in enrollment and educational attainment over the past several decades. Between 1990 and 2014, gross secondary enrollment rates in Tunisia doubled and gross tertiary enrollment rates almost quadrupled.[24] A quadrupling of gross tertiary enrollment over the last quarter century (from 8.0% in 1990 to 32.6% in 2016) has been driven in part by rapidly growing female enrollment. The tertiary enrollment rate for women was significantly lower than that for men in 1990 but by 2016 had reached nearly 175% of the male enrollment rate.[25]

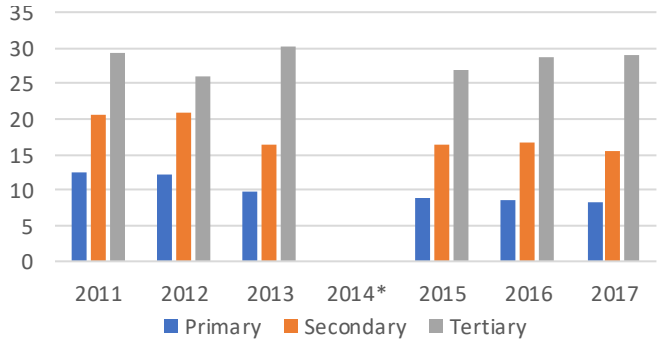
While Tunisia has made great strides in enrollment and grade attainment, some evidence suggests that the quality of education may be poor. Relative to OECD countries, Tunisia underperforms on the PISA tests, administered to 15-year-olds in countries around the world. Tunisia was 1.33 standard deviations below the OECD average in mathematics, 1.39 SDs below the OECD average in reading, and 1.24 SDs below the OECD average in science (PISA 2015 Database). Compared to other MENA countries participating in the 2015 PISA, Tunisia performed only slightly worse, reflecting the overall poor performance in the region.

The impressive progress in school attainment has not been accompanied by the creation of commensurate job opportunities for an educated labor force. As noted in Chapter 2, overall, unemployment rates have declined moderately from the high levels seen in 2011-2012, though they are much higher for women than men (23% vs. 12%). As Figure 20 shows, unemployment among the university educated is very high—29%—and well above that for other education levels, a pattern that is observed throughout the region. Equally disturbing, while unemployment rates have fallen significantly for other groups since 2011, it has remained essentially at the same elevated level for university graduates.

[23] It should be noted that microenterprises, which are businesses employing 6 or fewer workers and make up over 95% of all firms in Tunisia, are not included in the Enterprise Survey.
[24] WDI data. Gross enrollment rate for a given school level is defined as the number of people enrolled in that level over the total number of people of the official age for that level (e.g., age 12-18 for secondary).
[25] In 1990 the gross tertiary enrollment rate for females was 6.1% versus 10.0% for males. By 2016 the corresponding rates were 41.2% for females and 24.1% for males.

Several possible factors may explain high rates of graduate employment. On the supply side, there appears to be a high reservation wage among graduates, and a strong preference for public sector employment, with individuals willing to stay unemployed and wait for a public sector job (OECD 2015b). Indeed, a highly disproportionate share of educated workers are found in the public sector, which is the primary employer of university graduates: in 2013, government and public enterprises together employed over 55% of university graduates (Annex 3 Table 1). In contrast, lower-skilled workers are found primarily in the private sector. Despite an increasingly well-educated Tunisian population, therefore, private sector employment continues to be dominated by low-skilled occupations. As noted in Section 2, even offshore sector export manufacturing largely features low-skilled labor.

Figure 20 – Unemployment Rate by Education level 2011-2017



Source: National Institute of Statistics

(*) Comparable 2014 data not available

High graduate unemployment could also be the result of a lack of adequate skills, or skills of the right kind, i.e., skills mismatch. If this were the case, lack of skills, or more broadly human capital, could be a constraint to growth. Given the evidence of low schooling quality in Tunisia, this is at least plausible. Moreover, data for the academic year 2010/11 show that about 63% students in tertiary education institutions were in the fields of humanities and social sciences, skills that are less relevant for private sector industries, especially in technical fields such as ICT, agro/industrial, and finance. However, perceptions of the private sector do not provide strong support for this as a major constraint. In the 2016/17 WEP Executive Opinion Survey of business leaders, inadequate quality of the workforce was ranked only 13th out of 15 potential impediments to doing business in Tunisia. In the 2013 Enterprise Survey of 592 Tunisian firms, only about 28% of firms listed an inadequately educated workforce as a major or severe obstacle to the firm's current operations (**Error! Reference source not found.**). Of note, however, is that 56% of the offshore (exporting) firms in the survey did so.

If lack of skills is a constraint to firms in an economy—i.e., skills are rare relative to the demand for them--we would expect its price to be particularly high. For skills or human capital, the shadow price is measured by labor market returns (earnings) to additional years of education. This is done using the Mincerian regression model, which regresses labor market earnings on schooling, labor market experience, and other relevant variables. We use the 2014 Tunisian Labor Market Panel Survey (TLMPS) and follow the model specification used in several recent multi-country studies to facilitate comparison with findings for other countries. The results (see Annex 2 for details), indicate that the increase in earnings from an additional year of education was 7.2% overall, and slightly higher for women than men (7.8 vs. 7.0). For men at least, this is in line with the average for MENA countries reported by Montenegro and Patrinos (2014) (6.5%) though for women it is well below the MENA average of 11%. In models allowing the returns to vary by education level, the table reveals sharply rising returns for higher levels of education: the annual gains in earnings from an additional year of primary, secondary, and university are, respectively, 3.4%, 10%, and 15% (mean and women combined). This is different from the pattern for a sample of MENA countries examined by Montenegro and Patrinos (2014), for which average annual returns for primary, secondary, and university were 16.0, 4.5 and 10.5 %. Also noteworthy in our estimates is that returns to a year of university are higher for women than men (18.5% vs. 14.5%).

The results are therefore ambiguous with respect to whether the shadow price of human capital is high in Tunisia and indicating a binding constraint. Although the returns to a university education are high compared with lower education levels and with regional averages, the unemployment rate among university

graduates is also very high. This would argue against the notion of an inadequate supply of skilled workers relative to demand, at least overall. Instead, it is more likely that Tunisia's unemployment problem, and in particular high graduate unemployment, reflects the inability of the economy to generate enough investment and jobs to meet the supply of new workers. This in turn derives substantially from a poor business climate for investment, and employment legislation that reduces labor market flexibility and hiring.

There may be exceptions to this overall conclusion. In the export manufacturing sector, the prevalence of complaints about workforce quality suggests that lack of adequate skills may be a barrier to the sector being able to move out of low value-added production. Further, the combination of high returns and high unemployment among well-educated Tunisians could signal skill mismatches, that is, that many of the university educated do not have specialties demanded by the market.[26] Still, although recent job growth has been mainly in low-skill sectors, job creation has also been strong in several high-skill industries, suggesting that firms are able to add and fill jobs with high human capital requirements. INS data indicate that over the period 2005 to 2015, employment in information and communication increased by over 240% and employment in education, health and social assistance increased by over 110% (Annex 3 Figure 7).[27]

Overall, an inadequate supply of skills does not appear to be a currently binding constraint to Tunisia's growth, but warning signs for the future include low schooling quality, potential skills mismatches, and the exclusion of educated Tunisian women from private sector employment. To the extent that other, more binding, constraints are relaxed and investment and growth in high-skill industries accelerates, human capital could indeed become a binding constraint if the supply and quality of education do not adjust.

c. Infrastructure and Transport Logistics

Well-functioning infrastructure, including transportation infrastructure (road, rail and marine), communications, and access to electricity, improves overall factor productivity in the economy. Inadequate infrastructure can reduce the returns on otherwise profitable activities and, in doing so, constrain private investment. ITCEQ surveys of firm managers indicate that infrastructure issues overall do not seem to be an obstacle to Tunisian firms. In fact, in the surveys from 2014, 2015, and 2016, infrastructure was consistently rated as the most favorable business climate component. However, infrastructure comprises many elements, from transportation to communications to sewage systems. The overall satisfaction with infrastructure hides important differences between these sub-factors. The quality of electricity access and provision appears to be above average relative to comparators. However, transportation infrastructure is viewed substantially less favorably than all other infrastructure subcomponents—with an average rating of 59.5 compared to average ratings between 72.2 and 85.7 for other subcomponents in the 2016 survey.[28] Therefore we consider transportation in detail.

In Tunisia, road transport is the predominant channel for both passenger travel and goods. The level of development of Tunisia's road network is in line with many peers. In terms of density relative to total land area and to population, Tunisia's road network is comparable to that of Bulgaria, Jordan and Morocco

[26] This is supported by the fact that unemployment is much higher for individuals with certain types of degrees than others. For example, in the 2011 INS labor force survey, unemployment appeared to be relatively low among labor force participants with degrees that were presumably in demand by the private sector, including engineering (11%) and medicine or pharmacy (6%). Conversely, graduates with degrees in humanities and social sciences as well as those with degrees in economics, management and law all experienced an unemployment rate of 26%.

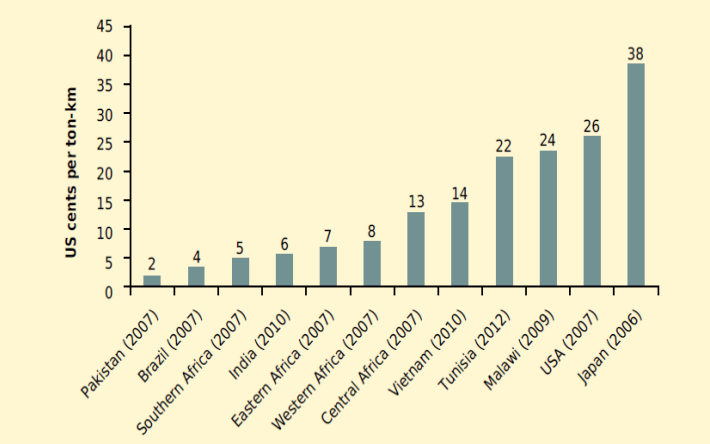
[27] Firms also do not appear to be importing skilled labor in significant amounts, which would be an indicator of a domestic shortage of such labor. In 2015, immigrants made up only 0.5% of the Tunisian population (De Bel-Air 2016). While the level of immigration reflects other factors in addition to labor market conditions, this suggests that businesses do not feel the need to rely on imported labor to any significant extent.

[28] Water infrastructure quality is also perceived favorably in the survey, but it should be noted that the ITCEQ survey includes non-agricultural enterprises only.

although it remains far less dense than in Malaysia, Romania, Turkey, and Chile (Source: https://knoema.com/ and WDI). Yet while road infrastructure is relatively favorable, the price of road freight transport is very high. As shown in Figure 21, average truck freight prices a 2014 study were US $0.22 per ton km—barely lower than in the U.S., with over 10 times Tunisia's per capita GDP. The average price of truck freight in Tunisia is much higher than in most other developing countries and regions.

High freight costs despite having a relatively good road infrastructure is evidence of poor efficiency in the transport sector. In Tunisia, the sector is marked by high fragmentation and the predominance of many very small or informal carriers, on the one hand, and the tendency of firms to handle their own transport needs, on the other (the latter implies that vehicle use is not optimized and characterized by substantial idleness; World Bank 2016a). As noted earlier (Box 2), these patterns likely reflect, in large part, barriers to firm entry and growth created by regulations on minimum fleet size and maximum vehicle age, and the prohibition on foreign ownership. The freight transport sector is also limited by an absence of logistic zones, which could provide a locus for more sophisticated and integrated overland transport services.

Figure 21 – International truck-freight price (US cents per ton-km)

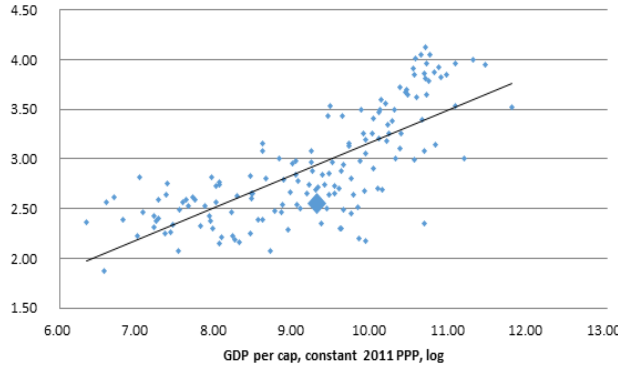


Source: World Bank 2014a

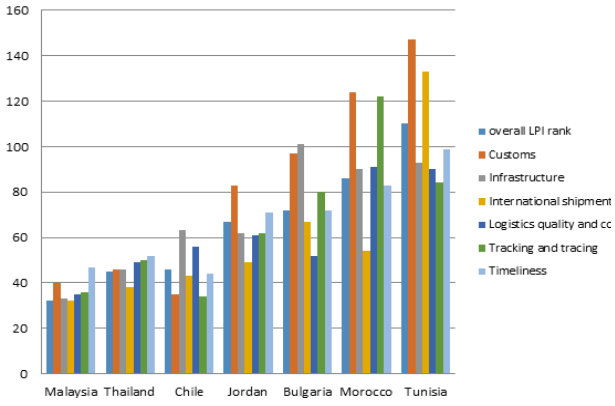
Export Logistics Export logistics, including port operations, is a particularly important aspect of infrastructure for Tunisia given the country's proximity to, and reliance on, large European markets. In 2016, the performance of Tunisia's logistics sector lagged behind comparators and was below the expected value for its level of GDP per capita based on the World Bank's Logistic Performance Index (LPI), as seen in Figure 22 (Panel A). Performance was especially poor on the customs and international shipments components (Panel B). Further, logistics performance has deteriorated significantly since the revolution: the LPI fell from slightly over 3.0 (where 1=low quality and 5=high quality) in 2012 to 2.5 in 2016.

Figure 22 – Tunisian logistics performance relative to other countries

Panel A: LPI score relative to income level (1 = lowest, 5 = highest)



Panel B: LPI subcomponent rankings relative to comparators (lower is better)



Notes to Panel A: Tunisia is indicated by diamond

Source: World Bank Logistics Performance Index

Port efficiency with regard to cargo handling is quite low in Tunisian ports, by both regional and international standards (Ducruet, Itoh and Merk, 2014). International Transport Forum data (reported in OECD, forthcoming) show that the average cargo handling time (time loading/unloading a vessel) in Tunisian container ports in 2015 was 2.8 days whereas the global average—matched by a number of local comparators—is only about one day. Outdated equipment combined with terminal congestion created by the usage of terminals as storage areas for containers has contributed to this situation (World Bank 2015). The inefficiencies at Rades port (near Tunis) appear to be the most serious, and given its dominant share of overall port container traffic, they drive the poor national level outcomes observed. It is noteworthy that in Rades, the state-owned enterprise for cargo handling, the *Société Tunisienne d'Acconage et de Manutention* (STAM), is the sole concessionaire for cargo handling, including both containers and RORO (roll-on/roll-off). The lack of a private competitor in Rades, or other forms of pressure on the operator to achieve efficiencies and cost recovery, is likely a significant factor in the poor performance of the country's most important port. These inefficiencies add further to costs to shippers by forcing ships to wait extended periods outside the port before unloading can begin. The average waiting time at anchor of container ships before they can enter Rades port in 2015 was 151 hours, or over six days, compared to 64 hours in 2010, marking a significant deterioration from before the revolution (World Bank WDI, reported in OECD forthcoming).

In addition to STAM's poor performance, a number of other aspects of market governance hinder efficiency and inhibit Tunisia's international trade, primarily by restricting entry into logistics-related activities (OECD forthcoming). For example, shipping agents, maritime cargo agents and freight forwarders must be 'legal entities'—that is, companies—rather than individual or sole proprietors. Further, the legislation imposed on these companies include minimum share-capital requirements, and these can be different for each port in which a company operates. Freight forwarders and cargo-agent companies are required to own or lease a warehouse, which must comply with requirements on minimum size and location. In addition, the regulation specifies certain machinery with which warehouses must be equipped. Combined, these provisions make it difficult for suppliers of these services to enter the market and grow. Legislation also sets strict qualification requirements for the legal representatives of companies active in maritime transport and related professions (and for sole proprietorships, for those activities where they can operate).

Finally, adding significantly to port-related shipping delays, though for imports more than exports, are cumbersome customs and trade procedures, discussed in Section 3. These concern primarily the policies and practice of Customs and technical ministries involved in inspections and clearances. Partly reflecting delays in clearances, container dwell time at Rades—the average length of time after unloading that the container remains in the port before exiting for destinations within Tunisia—is 17 days, much higher than that recorded in European ports (OECD 2017), for which dwell time is generally three days or less, but on line with ports in a sample of low-income counties of Sub-Saharan Africa; the average from 5 ports in a 2012 World Bank study (Raballand et al. 2012; excluding Durban, South Africa) survey was 16 days.

Overall, Tunisian infrastructure, including domestic transport infrastructure, trade logistics infrastructure and power, is likely not currently posing a binding constraint to private investment and entrepreneurship. The quality of electricity access and provision is equal or better than for comparators. Overall, the quality of road networks ranks similarly to or more favorably than close comparators. However, despite relatively favorable physical infrastructure, performance of the transportation and logistics sectors, for both domestic and international transport, appears to be quite poor. As described, these poor outcomes appear to reflect a range of market governance and regulation problems. In this sense, they are aspects of the binding constraint of excessive government market controls discussed in Section 3.

d. Macroeconomic stability

Prior to the 2011 revolution, the Government pursued relatively conservative fiscal and macroeconomic policies. Overall public indebtedness as a share of GDP declined from 67.6% in 2001 to 40.4% in 2010. Tunisia's conservative fiscal policies allowed the country to finance its deficits mainly through domestic and foreign borrowing rather than monetary expansion, so that inflation was kept in check, staying between 1% and 5.1% annually. Although growth has slowed since the revolution, the country has largely maintained macroeconomic stability. Inflation (6.4% in 2017) has remained moderate, if higher than earlier.

However, a number of challenges have made the country's macroeconomic situation more fragile. First, tourism suffered significantly from instability in the two years after the revolution, and then again following several terrorist attacks in 2015. The loss of tourism revenue and of the Libyan market following the revolution in that country negatively impacted Tunisia's growth and current account. The current account deficit, which was 3.1% of GDP between 2006 and 2010, rose to an average of 9.1% of GDP between 2013 and 2017. A significant devaluation of the dinar starting in 2016 has not yet had a major impact on the deficit. At the same time, government policy become more expansionary, mainly due to increased spending on public sector wages and subsidies. Public expenditure rose from 24% of GDP in 2010 to 30% in 2017, in large part due to increases in the civil service wage bill, which increased from 10.7 to 14.8% of GDP. These increases were understandable responses both to economic contraction and political pressures to provide employment and protect incomes. However, they have led to large increases in the country's fiscal deficit and external debt. For example, the fiscal deficit increased from 1% of GDP in 2010, right before the revolution, to 6.9% of GDP in 2013 (**Error! Reference source not found.**) and has since fallen slightly to 6% in 2017.

These trends pose two main threats to the economy going forward. First, government financial requirements are potentially crowding out the private sector in finance markets. Second, high levels of deficits and debt are unstainable without more rapid economic growth; otherwise, markets will eventually impose a painful adjustment though devaluation and inflation. Tunisia's relatively good access to foreign financing means that the current levels of government spending, while ultimately unsustainable, do not pose an immediate threat of a crisis. However, it will be necessary to rein in government spending on salaries (or increase tax revenues) to make room for more private as well as public investment spending (public investment spending, notably, was 5.5% of GDP in 2017, down from 6.8% in 2010.) In summary, while a number of problems loom, macroeconomic instability does not currently constitute a binding constraint to growth.

6. Conclusion

The analysis described in this document points to two factors that act as overarching binding constraints to growth, and a third factor that acts as a constraint to regional equity and sustainability, hence to inclusive growth. The overarching constraints to growth are (1) Excessive market controls of goods and services and (2) Restrictive labor market regulations. The constraint to regional equity and sustainability (3) is Inadequate and variable supply of water in interior regions.

The constraint related to high levels of state intervention and bureaucracy in goods and services markets is not new; there is a long tradition of state involvement in markets in Tunisia. Relatively little has changed since the 2011 revolution, although there have been some major policy initiatives such as the 2016 Investment Law, the effects of which have yet to be felt. Our analysis and review of the literature supports the view that firms suffer from unreasonable regulatory requirements and compliance costs, which inhibit entry of new actors in many sectors, reducing competition and productivity. By holding back firm and output growth, regulations restrict the demand for labor, so that the economy is unable to generate adequate numbers of new formal sector jobs, which are desperately needed to ensure greater opportunity and stability.

The second constraint, restrictive labor market regulations, reflects the same tradition of state control of the economy. Inflexibility of wage determination, very high social charges, and employment protection mechanisms reduce productivity by discouraging formality and firm growth, and like restrictions in product markets, inhibit job growth. It is necessary to balance growth objectives with adequate protections and security of workers. Nevertheless, benchmarking and other analysis, and a review of the literature, suggest the need to reconsider the strictness of some of these labor market measures, such as regarding dismissals.

Finally, the water supply issues identified in this analysis inhibit private investment in interior regions and reduce the sustainability of those investments, primarily in agriculture. They therefore act as a barrier to growth in these poorer regions of the country and hence to achieving regional equity and reducing overall poverty. Further, in a country that is one of the most water-scarce in the world and faces even more serious water problems due to climate change, inadequate and variable water supply can be expected to emerge as an overarching binding constraint to growth in the near future in the absence of appropriate policy responses.

Beyond these three binding constraints, several other factors represent potentially serious future challenges even if they are not currently considered binding constraints. First, the Tunisian financial sector continues to demonstrate important limitations, including limits to financial sector penetration, hence to deposit growth; a substantial burden of non-performing loans; and interest rate ceilings that may limit the availability of credit for riskier or smaller borrowers. Due to these and other shortcomings, the banking sector has long scored very poorly on international rankings of soundness, and may pose a problem for growth in the future.

Second, while inadequate human capital does not appear to be currently a binding constraint to investment and growth, the quality of education in Tunisia, represented by international test scores, appears low relative to comparators. There is also widespread concern about (if mixed evidence for) a 'skills mismatch', consistent with patterns of academic specialties in tertiary education. Furthermore, the exclusion of educated Tunisian women from private sector employment distorts overall labor allocation and drives very high unemployment among better-educated women. If, as hoped, and investment and growth in high-skill industries accelerates, human capital could indeed become a binding constraint if the supply and quality of education do not adjust.

Finally, performance of the transportation and logistic sectors appears to be quite poor. Freight transport costs are very high in comparative perspective, likely reflecting regulatory barriers to firm entry that inhibit

growth and innovation in the sector. For international trade logistics, Tunisia performs very poorly on international measures, and port operations at Rades, the country's main port, are extremely inefficient. These poor outcomes reflect significant market governance and regulation problems, and in this sense they are aspects of the already identified binding constraint of excessive government market controls.

The following table summarizes the evidence and analytical basis for these conclusions, based on the findings presented in the preceding chapters.

Figure 23 – Heat Map to Identify Binding Constraints to Growth in Tunisia

Rank	Factor	Diagnostic Test			
		High Shadow Price	Changes in Changes	Bypass the Constraint	"Camels" and "Hippos"
I. Binding Constraint	Market Controls of Goods and Services				
	Regulation of the Tunisian labor market				
	Inadequate and variable supply of water in interior regions				
II. Non-Binding	Access to Finance				
	Human Capital				
	Infrastructure and Transport Logistics				
	Macroeconomic stability				

Notes:
High Shadow Price: tests if the price of the factor is high or there rationing of it at the current price
Changes in changes: tests whether changes in the factor's availability is correlated with changes in investment or growth
Bypass the constraint: tests whether economic agents (e.g., manufacturers, farmers) are willing to incur substantial costs or risks to circumvent the constraint.
"Camels" and "Hippos": tests whether economic agents that rely heavily on the constraining factor are less able to thrive. (In the same way that camels, and not hippos, thrive in an environment without water, activities that do not depend on the constraining factor will tend to thrive while those that do depend on it stagnate or are missing altogether)
See Hausmann, Klinger, and Wagner (2008) for further details on the tests.

Evidence of Binding Constraint—Legend:

Strong	
Some/Mixed	
Weak/rejected	
Insufficient data/not tested	

REFERENCES

Abdelhafidh H. & M. S. Bachta, 2017. Effect of water users associations' financial performances on small farms" productivity. Journal of new sciences, Agriculture and Biotechnology, 41(4), 2211-2222

Adly, A. (2014). Reforming the Entrepreneurship Ecosystem in Post-Revolutionary Egypt and Tunisia. Center on Democracy, Development, and the Rule of Law. https://cddrl.fsi.stanford.edu/sites/default/files/Reforming_the_Entrepreneurship_Ecosystem_in_Post-Revolutionary_Egypt_and_Tunisia-_Amr_Adly.pdf

African Development Bank (AFDB) 2012. Distortions to Agricultural Policy Incentives in Tunisia: A Preliminary Analysis https://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/Brochure%20note%20politique%20agriculture%20Anglais.pdf

Almeida, R. K.**,** Susanli, Z. B. "Firing regulations and firm size in the developing world**:** Evidence from differential enforcement" Review of Development Economics 16:4 (2012): 540–558;

Almeida, Rita & Carneiro, Pedro, 2009. "Enforcement of labor regulation and firm size," Journal of Comparative Economics, Elsevier, vol. 37(1), pages 28-46, March

Angel-Urdinola, Diego F., Nucifora, Antonio, Robalino, David (2015). Labor Policy for Good Jobs in Tunisia. Revisiting Labor Regulation, Social Security, and Active Labor Market Programs. World Bank

Baghdadi, Leila & Khedher, Sonia & Arouri, Hassen. (2017). In search of a new development model for Tunisia: Assessing the performance of the offshore regime. Economic Research Forum Working Paper.

Riadh Ben Jelili and Mohamed Goaied (2009) Entry, Exit, and Productivity in Tunisian Manufacturing Industries, in Khalid Sekkat , ed., Market Dynamics and Productivity in Developing Countries. Economic Reforms in the Middle East and North Africa. Springer.

Betcherman, G. "Labor market regulations: What do we know about their impacts in developing countries?." World Bank Research Observer 30:1 (2015): 124–153

Boeri, T., Helppie, B. and Macis, M. (2008). Labor regulations in developing countries: a review of the evidence and directions for future research. World Bank. SP Discussion Paper 0833.

Bouchruka, A., H. Jouber and W. Bardi, 2015. The Water Management in Tunisia: a Trend Toward Unconventional Resources. Journal of Management Research 7(3).

Bouis, R., O. Causa, L. Demmou, R. Duval, and A. Zdzienicka, 2012, "The Short-Term Effects of Structural Reforms: an Empirical Analysis," OECD Economics Department Working Paper, No. 950.

Centre for Environment and Development for the Arab Region and Europe (CEDARE), 2014. Tunisia Water Sector M&E Rapid Assessment Report, Monitoring & Evaluation for Water in North Africa (MEWINA) Project, Water Resources Management Program, CEDARE.

Centre National des Etudes Agricoles 2013 Réalité et perspectives de commercialisation des produits de la femme rurale/phse1-VD/A.A/CNEA/Mars 2

Croitoru, L. and M. Sarraf, 2010. The Cost of Environmental Degradation: Case Studies from the Middle East and North Africa. The World Bank.

Debbichi, Sammi and Walid Hichri. 2014. Market Power and Collusion on Interconnection Phone Market in Tunisia : What Lessons from International Experiences. ffhalshs-00956638f https://hal.archives-ouvertes.fr/halshs-00956638/document

Simeon Djankov, Caralee McLiesh and Rita Ramalho, 2006. "Regulation and growth," Economics Letters, Elsevier, vol. 92 (3), pages 395-401,

De Bel-Air, F. (2016).Migration Profile: Tunisia, Policy Brief, Migration Policy Center, Robert Schuman Center For Advanced Studies, European University Institute, 2016/08, 1-20.

Ducruet, C., H. Itoh and O. Merk (2014), "Time Efficiency at World Container Ports", International Transport Forum Discussion Papers, No. 2014/08, OECD

Economics Intelligence Unit (2015), Tunisia economy: Lifting the burden of state-owned enterprises http://country.eiu.com/article.aspx?articleid=503051034&Country=Tunisia&topic=Economy_1

The Economist, 2014. Dirty Business: Pollution in Tunisia, Locals Complain about the Phosphate Industry.

Égert, Balázs and Peter Gal 2016. The quantification of structural reforms: extending the framework to emerging market economies OECD economics department working papers no. 1354

Fair Wear Foundation (2016) Tunisia Country Study 2015. https://api.fairwear.org/wp-content/uploads/2016/06/TunisiaCountryStudy2015.pdf

FAO, 2014. FAOSTAT On-line Database. Food and Agriculture Organization, Rome, Italy http://faostat.fao.org.

FAO, 2009. Groundwater Management in Tunisia: Draft Synthesis Report

Frija, A., M. Makhlouf, A. Chebil and C. Thabet. 2017. Potential adaptations of the Tunisian agricultural sector to water scarcity. Economic Research Forum Working Paper.

Hanmer, Lucia et al. Gender and Labor Markets in Tunisia's Lagging Regions. April 2017. World Bank.

Hausmann, Rodrik, and Velasco 2005. "Growth Diagnostics," John F. Kennedy School of Government, Harvard University

Hausmann, Klinger, and Wagner, "The Mindbook: Implementing Growth Diagnostics in Practice", 2008

International Crisis Group. (2017) "Blocked Transition: Corruption and Regionalism in Tunisia." Report No. 177: Middle East & North Africa, 10 May 2017.

ITC-ILO/EC (International Training Centre of International Labour Organisation /European commission) (2016) Social Dialogue in Morocco, Tunisia and Jordan: Regulations and Realities of Social Dialogue.

International Water Management Institute (IWMI) 2016, Groundwater Governance: A Synthesis. Project report of the Groundwater Governance in the Arab World - Taking Stock and Addressing the Challenges] Colombo, Sri Lanka: IWMI.

Iqbal,Sarah.2015.*Women, business, and the law 2016 : getting to equal (English).* Washington, D.C. : World Bank Group. http://documents.worldbank.org/curated/en/455971467992805787/Women-business-and-the-law-2016-getting-to-equal

Louati, M.H. and Bucknall, J., 2009. Tunisia's Experience in water resource mobilization and management. In: V.J. Jaganathan, A.S. Mohamed, and A. Kremer, eds. Water in the Arab world: management perspectives and innovations. Washington, DC: The World Bank, Middle East and North Africa Region, 157-180.

Moghadam, Valentine M. 2018. Gender Inequality and Economic Inclusion in Tunisia: Key Policy Issues. Issue brief no. 09.03.18. Rice University's Baker Institute for Public Policy, Houston, Texas.

Montenegro, Claudio E.; Patrinos, Harry Anthony. 2014. Comparable Estimates of Returns to Schooling Around the World. Policy Research Working Paper;No. 7020. World Bank Group, Washington, DC.. https://openknowledge.worldbank.org/bitstream/handle/10986/20340/WPS7020.pdf?sequence=1&isAllowed=y

OECD (forthcoming) OECD Competition Assessment Reviews: Tunisia

OECD (2018) OECD Economic Surveys: Tunisia 2018

OECD (2017) Promouvoir l'investissement dans la chaîne logistique en Tunisie: Le rôle des politiques publiques

OECD (2015a). *Tunisia: A Reform Agenda to Support Competitiveness and Inclusive Growth*, "Better Policies" Series, OECD, Paris, March.

OECD (2015b), *Investing in Youth: Tunisia: Strengthening the Employability of Youth during the Transition to a Green Economy*, Investing in Youth, OECD Publishing, Paris

Psacharopoulos, George (1995) . The profitability of investment in education : concepts and methods. World Bank. http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.475.9084&rep=rep1&type=pdf

Raballand, Gaël; Refas, Salim; Beuran, Monica; Isik, Gözde. 2012. Why Does Cargo Spend Weeks in Sub-Saharan African Ports? Lessons from Six Countries. Directions in Development—Trade;. Washington, DC: World Bank

Rijkers, Bob Rijkers, Freund, Caroline Freund, and Antonio Nucifora, 2017. All in the family: State capture in Tunisia, Journal of Development Economics,Volume 124: 41-59.

ROSES (Research Centre on Transition and Development Economics) (2005) "Flexibilité du travail et concurrence sur le marché des biens et services : impact sur les conditions de travail et le développement du secteur informel en Algérie, au Maroc et en Tunisie," Research No FEM 22-20 (Forum Euro-Méditerréen des institutions économiques).

Schiffbauer, Marc; Sy, Abdoulaye; Hussain, Sahar; Sahnoun, Hania; Keefer, Philip. 2015. Jobs or Privileges : Unleashing the Employment Potential of the Middle East and North Africa. MENA Development Report; Washington, DC: World Bank

Shetty, Shobha. 2004. Treated Wastewater Use in Tunisia: Lessons Learned and the Road Ahead. In: *Wastewater use in irrigated agriculture: confronting the livelihood and environmental realities*. C. Scott, C., N. Faruqui, and L. Raschid-Sally (eds)

Republic of Tunisia, Ministry of Women's Affairs (2011) Budget temps des femmes et des hommes en Tunisie, 2005-06, Tunis,

Verner, Dorte (2013). Tunisia in a Changing Climate: Assessment and Actions for Increased Resilience and Development, World Bank.

Watersum (2016). Water demand management in the context of water services:Tunisia. July 2016.

World Bank (2017). World Development Indicators.

World Bank (2016a) *République tunisienne: Livre Blanc relatif au secteur des transports et de la logistique*, World Bank, Washington DC, http://documents.worldbank.org/curated/en/339961488471609720/pdf/ACS18045-REVISED-PUBLIC.pdf.

World Bank, 2016b. Tunisia Poverty Assessment, 2015. Poverty Global Practice, Maghreb Department, Middle East and North Africa Region, World Bank, Washington, D.C.

World Bank (2014a). The Unfinished Revolution – Bringing Opportunity, Good Jobs and Greater Wealth to All Tunisians. Washington, DC: World Bank. http://siteresources.worldbank.org/INTWSS/Resources/Desal_mainreport-Final2.pdf

World Bank (2015) Tunisia Systematic Country Diagnostic report. Washington, DC: World Bank. https://openknowledge.worldbank.org/bitstream/handle/10986/23112/102298.pdf?sequence=5&isAllowed=y

World Bank 2012. World Development Report 2013: Jobs. Washington, DC: World Bank.

World Bank, 2009. Water in the Arab World. Washington, DC: World Bank.

World Bank, 2007. Water Resource Management in MENA. Washington, DC: World Bank.

World Resources Institute (WRI) (2015) Ranking the World's Most Water-Stressed Countries in 2040 https://www.wri.org/insights/ranking-worlds-most-water-stressed-countries-2040

World Value Survey. *Results Tunisia.* 2013
http://www.worldvaluessurvey.org/WVSDocumentationWV6.jsp

United Nations, World Development Report, 2016. Water and Jobs.

United Nations Framework Convention on Climate Change (UNFCCC) 2013. Republic of Tunisia, Second National Communication of Tunisia to the United Nations Framework Convention on Climate Change.

UN Women: https://spring-forward.unwomen.org/en/countries/

USAID. 2017. Groundwater Governance in Tunisia: Policy White Paper

Verner, Dorte, ed. 2013. Tunisia in a Changing Climate: Assessment and Actions for Increased Resilience and Development, World Bank.

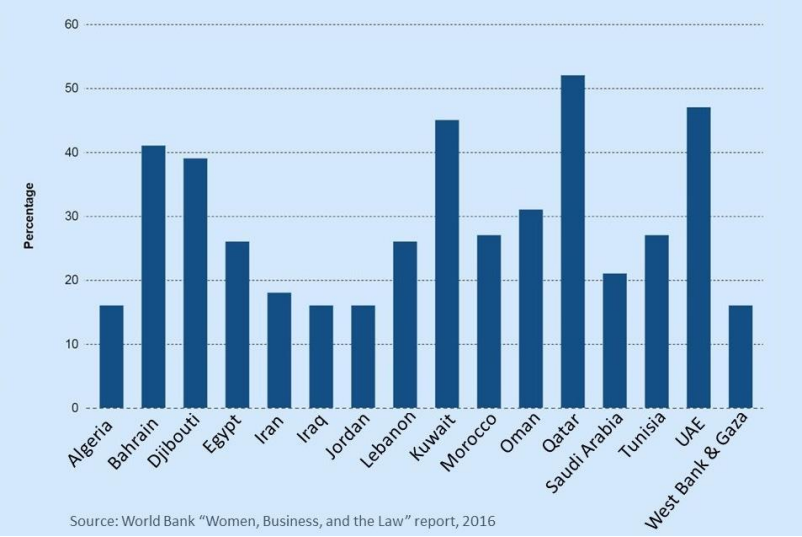
WTO (2016) Tunisia Trade Policy Review WT/TPR/S/341
https://www.wto.org/english/tratop_e/tpr_e/s341_e.pdf

Annex 1 – Women's Economic Participation

Relative to most countries of the region, Tunisia has been progressive in terms of improving the rights of women, starting with the Code of Personal Status in 1956. The 2014 constitution establishes that men and women have equal rights and that the state is the guarantor of these rights. The country has made substantial progress in closing gender gaps in education and health. As in several other Arab countries, females in Tunisia now have higher enrollment rates than males, except at post-tertiary levels. In 2015, women accounted for 42% of university professors and 31% of the country's parliamentary seats (Moghadam 2018).

However, neither this enviable progress nor years of economic growth have translated into substantially better economic opportunities for women. Tunisia ranks only 119 out of 149 countries on the World Economic Forum's Gender Gap Index for 2018. It scores particularly poorly on economic participation and opportunity (135 out of 149). The female labor force participation rate in Tunisia is just 27%, compared to 76% for men, and has barely changed in the last two decades. This rate is far below the global average, and roughly at the average for the MENA region (Figure 1).

Figure 1 – Female labor force participation in MENA countries (%)



Source: Iqbal (2015)

Due to the growth of Tunisia's export manufacturing sector, an unusually high share of employed women (19.4% in 2017, ILO estimate) is found in manufacturing jobs such as assembly and machine operation. In fact, this is close to double the share of men (10.3%), though it should be pointed out that most such jobs in this sector are relatively low-skill, low-wage positions. Also of note is the large share of working women who are managers and professionals (28% compared to 19% of men). Very few women (4.5% of the employed) are in crafts or trades. 10% of working women are in agriculture, where they are more likely to work informally and lack social protection. Employed women are disproportionately found in the public sector: in 2010 they made up 40% of all civil service employees (and impressively, 45% of senior manager positions) (OECD 2015a).

Some of these patterns in female employment, such as the large share in professional and manufacturing jobs, may be viewed favorably in comparison with other countries of the region. Still, the most salient factor remains the very low overall participation of women in the economy, which does not depart from regional

norms. Nor does another sobering statistic, the very high unemployment rate for women (23% in 2017), compared to that for men (12.6%). This indicates that women who do choose to enter the labor force encounter significant difficulties finding jobs.

These outcomes reflect constraints facing women on both the supply and demand side of the labor market. On the supply side, women in Tunisia, as in most countries, bear the bulk of childcare and other domestic work responsibilities. A time-use study by the Ministry of Women's Affairs (2011) estimated that 88% of all unpaid care work was carried out by women, a burden that clearly inhibits their labor force participation. Among men and women not in the labor force, about 70% of women cite 'family reasons' but almost no men do (Angel-Urdinola et al. 2015). Prevailing attitudes in Tunisian society conform to a traditional view of women's roles regarding work. For example, in the 2013 World Values Survey, 84% of male and 69% of female respondents in Tunisia agreed or strongly agreed with the statement that "when a mother works for pay, the children suffer" (World Values Survey 2013; note these responses may reflect not just attitudes but a lack of accessible childcare and leave flexibility for women in the workforce). 89% of men and 70% of women felt that males should be preferred when jobs are scarce.

On the labor demand side, discrimination by private employers in hiring, especially for occupations that are traditionally male, likely also constrains women's employment. Further, as described in the text, some aspects of labor market legislation in Tunisia act to inhibit, or at least not protect, women's labor market activity. There are no laws mandating non-discrimination on the basis of gender, either in pay or hiring. Further, some labor market legislation outright prohibits some kind of work for women. Such measures, enacted ostensibly to protect women, prohibit women's employment in certain jobs or during certain hours. Labor Code Article 66 prohibits night work for women (10 pm to 6 am), with some exceptions, such as for women in management positions of responsibility and in non-manual social services work. Other Articles prohibit women from working underground in mines and quarries and in metalworking sectors. More favorably for women in the workforce, dismissal of pregnant workers is prohibited, and mothers are entitled to nursing breaks at work. Family and maternal (and paternal) leave benefits are not generous but are better in the public sector, which in part can explain why working women in Tunisia indicate a strong preference for public sector employment (OECD 2015a).

Female entrepreneurs also face a difficult environment. While Tunisia ranks well—42nd out of 137 countries—on the 2017 Global Entrepreneurship Index, it is ranked near the bottom on the female entrepreneurship index. Women's business ownership rates are significantly lower in Tunisia than global averages. The high startup barriers and costs to operating business might be a particular barrier for female entrepreneurs. In a small 2014 study, women reported substantial difficulty with business registration, needing almost 11 months to finalize their registration, while men reported needing just 6 months on average (Adey 2014). A much higher share of women than men reported needing to pay bribes or gifts for business operations (43% vs. 26%).

Finally, in rural areas, women often face difficult constraints on their engagement in productive and remunerative activities. Although women are significantly involved in agriculture, especially on family farms, the vast majority of farm owners are male: female farmers make up only 4% of owners of privately held agricultural land (women own 14% of land overall in Tunisia) (Centre National des Etudes Agricoles 2013). This disparity in assets is perpetuated by Tunisia's inheritance law, under which sons are entitled to inherit double the assets of daughters; in practice, females usually inherit much less than this and even when they do inherit, their assets tend to be registered in a husband's or father's name (UN Women n.d.). Women represent just 6% of members of *Groupement de développement Agricole*, the agricultural development groups concerned with local water use (CNEA 2013).

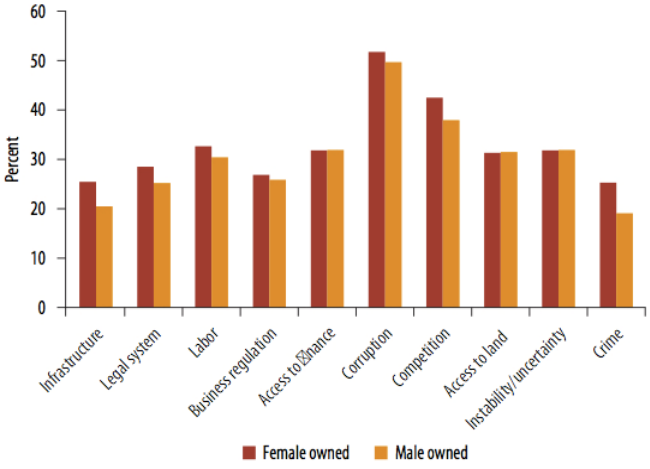
A significant share of work in agriculture is informal and seasonal, especially among women. Ministry of Agriculture data from 2014-15 indicate that women make up 43% of seasonal agricultural workers (and

62% of unpaid family agricultural workers). Women working in agriculture often face long hours and hazardous work conditions while accepting lower pay then men. Most women who work as seasonal agricultural laborers receive no social security benefits due to the so called 45-day rule, which specifies that an individual must work for the same employer at least 45 days in a year to be eligible. Since a higher share of women engaged in agriculture are seasonal workers, this rule impacts women more severely.

Gendered effects of market regulations

The market restrictions described in Section 3.a do not have an explicit gender dimension. Indeed, in the World Bank's 2013 enterprise survey, there are very few obvious gender-based differences in the how male- and female-owned firms perceive the constraints to entrepreneurship (Figure 2). Both male and female business owners cited corruption and anticompetitive practices as the most pervasive constraints. However, the firms surveyed are established businesses, with very few women-owned firms in the sample. Other surveys do point to gender-based gaps and inequalities when it comes to starting a business. As noted above, results from a small survey (Adey 2014) indicate that it takes female entrepreneurs substantially longer than men to register a business and that they are more likely to report having to pay bribes or gifts. Women in the survey also reported on average a higher number of separate agencies that they needed to interact with to register their business (4.1 vs. 3.2 for men). Some of these differences may reflect differential burdens for the activities in which women and men are likely to engage rather than differential treatment for men and women in the same activity. While limited, this evidence suggests that regulatory requirements may impose a particularly strong barrier to Tunisian women who seek to run businesses. The very low rates of female entrepreneurship in Tunisia are consistent with this hypothesis, though of course there may be many other factors leading to low female entrepreneurship.

Figure 2 - Business Constraints as Perceived by Male and Female Business Owners



Source: World Bank Enterprise Survey 2013.

Differential vulnerability to water shortages and climate change

Section 3c noted that water shortages and climate change will most strongly impact poorer regions and people, since rural and poor households rely disproportionately on agriculture for their livelihoods. Moreover, the impacts of climate change, including via changes in water availability, will not be gender neutral. As discussed in Verner et al. (2013), the drivers of gender-based vulnerability to climate change can be separated into disparities in three broad areas: (i) access to resources; (ii) opportunity for improving existing livelihoods and developing alternative livelihoods; and (iii) participation in decision-making. In rural areas of Tunisia, women, and especially poor women, face structural inequalities and socio-cultural norms that disadvantage them in these three areas. As a result, rural women are more likely to be less able than men to adapt to climate change, resulting in exacerbated negative welfare impacts on women themselves, their households, and their communities.

Annex 2 – Earnings Regressions

To obtain the estimates reported in Section 3.b, we first estimate the following linear log-wage regression:

$$\ln(W_i) = \beta_1 S_i + \beta_2 X_i + \beta_2 X_i^2 + \mu_i \qquad (1)$$

Where W_i is the monthly wage of worker i, S_i is the year of schools of worker i, X_i is potential work experience (equal to age – years of schooling – 5), and μ_i is an i.i.d. error. β_1 gives the average returns to an additional year of schooling. This regression does not allow for the returns to education to differ for different levels of education. To estimate the returns for different levels of completed schooling, we estimate the following log-wage regression (See Psacharopoulos 1995; Montenegro and Patrinos 2014):

$$\ln(W_i) = \sum_{j=1}^{3} \beta_j S_{ji} + \beta_4 X_i + \beta_5 X_i^2 + \mu_i \qquad (2)$$

Where S_{ji} are dummy variables for completion of primary, secondary, and tertiary education. The omitted category is no schooling. The private rate of return to an additional year of schooling for the given degree can be calculated as:

$$r_p = (e^{\beta_1} - 1)/6$$
$$r_s = (e\beta_2 - e\beta_1)/7$$
$$r_t = (e\beta_3 - e\beta_2)/4$$

where the denominators represent total years in primary, secondary (lower and upper), and university levels. The regressions are run on the subsample of wage workers between the ages of 15 and 65. The sample excludes workers engaged in farm labor, off farm labor, and are self-employed. Wages are converted to monthly earnings for the models. Results are presented in Table 1 below.

Table 1 – Annualized Rate of Returns to Schooling

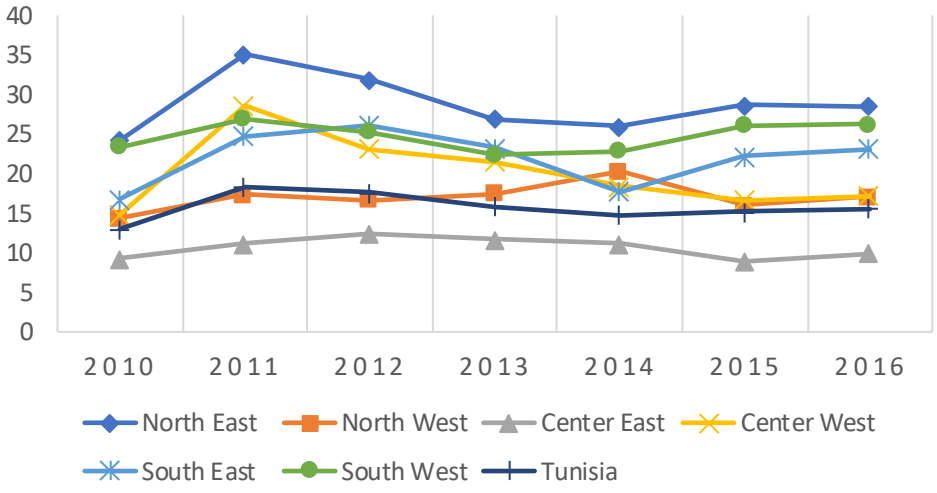
	All Wage Employed			Private Wage Employed		
Education Level	Male	Female	All	Male	Female	All
All levels	0.0703	0.0783	0.0715	0.0637	0.0481	0.0589
Model with estimates by level:						
Primary	0.0299	0.0381	0.0384	0.0149	0.0321	0.0214
Secondary	0.1023	0.1046	0.1005	0.0823	0.0423	0.0684
Tertiary	0.1447	0.1854	0.1504	0.2174	0.2957	0.2329
N	1,082	363	1,459	737	234	987

Note: Estimations by authors on 2014 TLMPS. All models include, in addition to the schooling variables, worker years of experience and experience squared.

As noted, these estimates are based on dummy variables indicating highest school level, was chosen for comparability with findings from other countries. However, a more appropriate specification that makes use of the continuous years of schooling data is a regression spline function, which directly estimates separate returns for years at each level. This model gives somewhat different results than those reported above, yielding annual returns to primary, secondary, and university of 5.0%, 5.7%, and 12.3%. The benefits to a year of university are still higher than lower levels, but the benefits of years of secondary are substantially lower than in the model in the text.

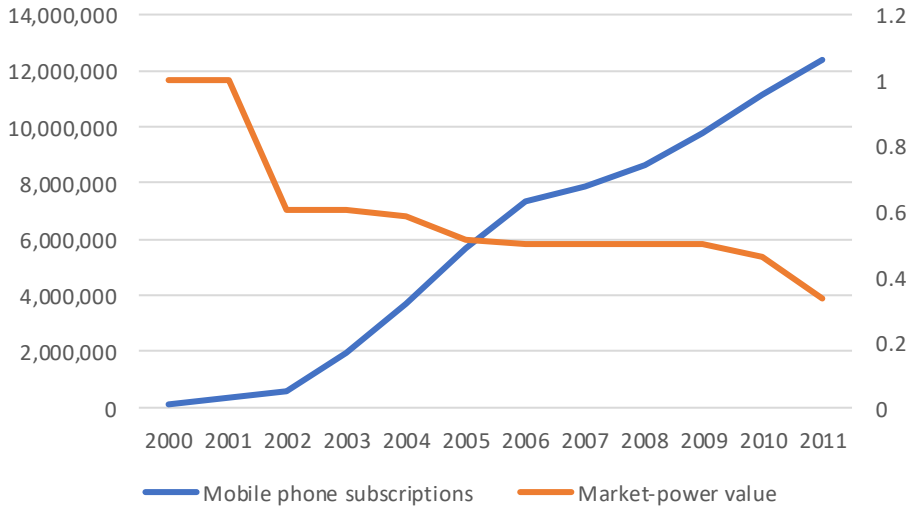
Annex 3—Additional Figures and Tables

Figure 1 – Unemployment rates by region, 2010-2016



Source: Tunisia National Institute of Statistics Data Portal

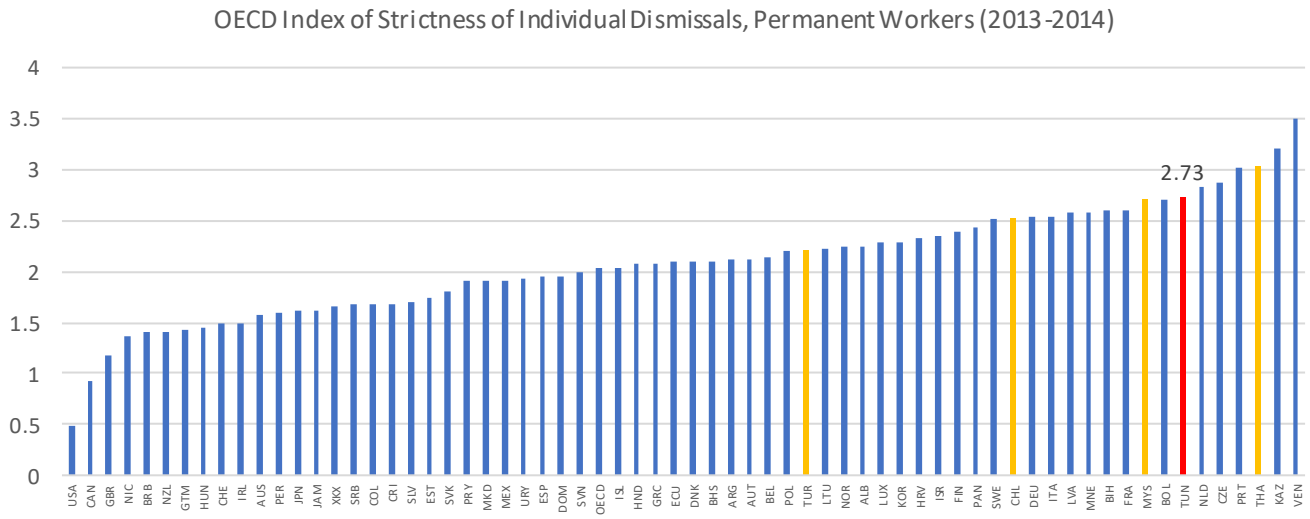
Figure 2 – Market power and mobile subscriptions in Tunisia, 2000-2011



Source: International Telecommunication Union and Debbichi and Hichri (2014)

Note: the market power indicator is based on the estimated difference of actual prices and the competitive price level.

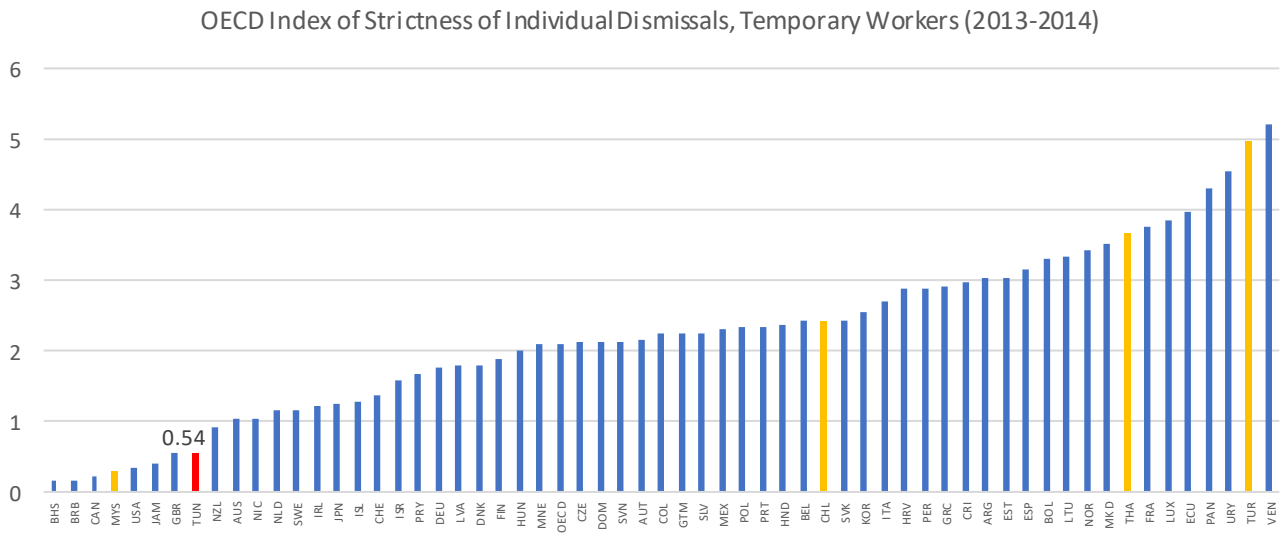
Figure 0 – Strictness of dismissal procedures: permanent workers



Source: OECD

Note: Tunisia indicated in red

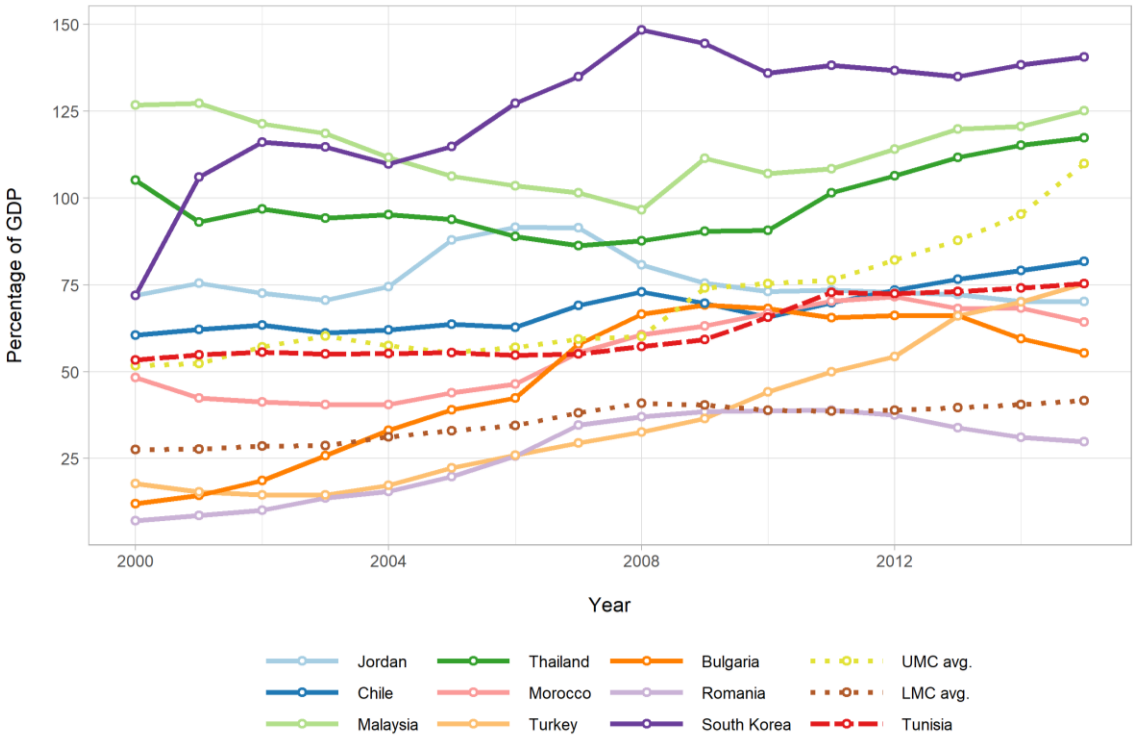
Figure 4 – Strictness of dismissal procedures: temporary workers



Source: OECD

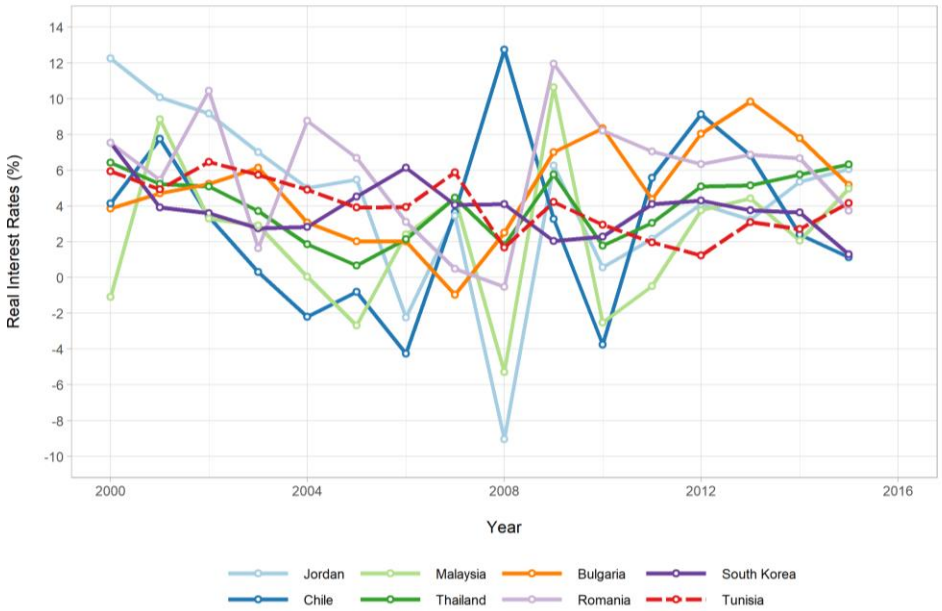
Note: Tunisia indicated in red

Figure 5 – Domestic credit to private sector by banks (% of GDP)



Source: WDI

Figure 6– Real interest rates relative to comparators (%), 2000-2015



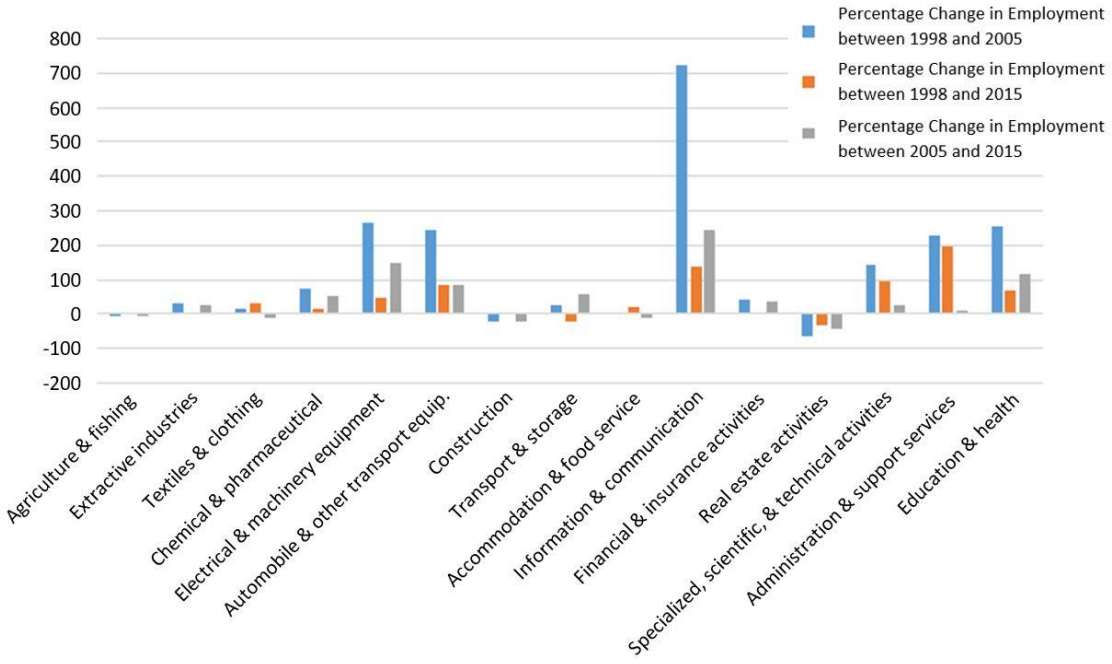
Source: WDI

Table 1 – Sector Distribution of the Workforce by Educational Level - 2014 (%)

	Educational level				
	None	*Primary*	*Secondary*	*University*	*Total*
Government	11.09	9.55	21.81	50.83	21.09
Public enterprises	0.87	1.80	3.89	4.29	2.93
Private sector	85.04	82.15	64.98	35.80	68.26
Joint/Cooperative	1.65	4.98	8.03	8.05	6.38
Other	1.32	1.49	1.18	0.46	1.19
Not stated	0.02	0.03	0.12	0.56	0.15
Total	*100.00*	*100.00*	*100.00*	*100.00*	*100.00*

Source: Authors' calculations using data from the Tunisian Labor Market Panel Survey 2014

Figure 7 – Percent change in employment by sector and period, 1998-2015



Source: INS