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Structural Transformation and Industrial Policy

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This Policy Perspective first reviews patterns of structural change in Egypt, Morocco, Tunisia and Turkey. It then reviews findings on the role of industrial policy. It concludes with a discussion of the future potential of industrial policy in promoting economic development.

ntroduction

How much structural transformation has taken place in Euromed countries over the past few decades? What has been the role of industrial policy or lack thereof in the transformation process? More importantly, can industrial policy play a role in the economic transformation of MENA countries in the future?

A recent research project undertaken by the Economic Research Forum (ERF) explores patterns of structural change and industrial policy in four Euromed economies: Egypt, Morocco, Tunisia and Turkey.¹ Structural transformation is broadly defined as the reallocation of resources from low productivity activities (traditionally identified with agriculture) to high productivity activities (industry and services). Following Pack and Saggi (2006), industrial policy may be defined as "selective intervention" that aims to alter the structure

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¹ The research was carried out by Sofiane Ghali and Sami Rezgui (Tunisia), Lahcen Achy (Morocco), Izak Atiyas and Ozan Bakis (Turkey) and Amirah El-Haddad (Egypt). The overview chapter was written by Izak Atiyas, Ahmed Galal and Hoda Selim.

About the author



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of production "toward sectors that are expected to offer better prospects for economic growth."

Structural change is important because it constitutes one of the main ingredients of economic development. Reallocation is expected to generate higher overall productivity and therefore higher incomes. The second ingredient of economic development has been called "the development of fundamental capabilities in the form of human capital and institutions" by Rodrik (2013). These include factors such as education, good governance and regulatory frameworks that address market failures. Rodrik argues that even though long-term growth ultimately depends on the development of these capabilities, the latter are characterized by high set-up costs and take time to develop. Until they do, high growth is likely to depend primarily on structural change, and, in particular, on industrialization. This Policy Perspective first reviews patterns of structural change in the four countries covered in the project. It then reviews the project's findings on the role of industrial policy. It concludes with a discussion of the future potential of industrial policy in promoting economic development.

2. Patterns of Structural Change

The pace of structural transformation was uneven among the four countries, with Turkey showing remarkable performance. Turkey was able to shift from being the largest agricultural economy (around of half of GDP in 1960) to one that is more services-based (expanding from a quarter of GDP to around 63% of GDP in 2011). Impressive industrialization also took place over time, raising the share of the industrial sector from a fifth of GDP in 1965 to 28% by 2011. The same process can be observed in Tunisia and to a lesser extent in Egypt. Meanwhile, Morocco's structural change was the slowest, with the share of industry in GDP remaining almost constant at around 25-30 percent in the last two decades. The evolution of employment shares provides a similar message (Figure 1). In Turkey, the share of agriculture in total employment declined from 45 percent in 1985 to 24 percent in 2010 while the shares of industry and services increased from 20 to 26 percent and from 35 to 50 percent, respectively. In Tunisia, the share of agriculture declined from 33 to 18 percent between 1980-2010, whereas the share of services increased from 33 to 50 percent and the share of industry remained constant at 33 percent. In Egypt between 1982 and 2011 the share of services remained constant at 47 percent, while that of agriculture decreased from 39 to 29 percent and that of industry increased from 15 to 24 percent. In Morocco, by contrast, between 1994 and 2010 employment shares remained constant at 40 percent for agriculture, 23 percent for industry and services and 37 percent for services.

Since it is primarily youth with secondary education or with higher education but from less privileged backgrounds that are expecting formal mployment but facing much lower chances of obtaining it, this brief focuses on policies that are likely to help these youth.

In all four economies large productivity gaps remain between different sectors. An analysis of the decomposition of labor productivity growth for Egypt, Turkey, and Tunisia between 1990 and 2008 (2010 for Turkey) reveals contrasting patterns. While in Turkey structural change had always a positive and large contribution to overall productivity

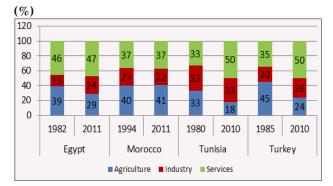


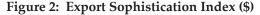
Figure 1: Sectoral Distribution of Employment

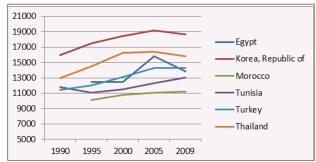
growth, the contribution of structural change was limited in Egypt and Tunisia. It was even negative in Egypt during 2003-2008. While both in Egypt and Turkey a significant amount of labor was reallocated to services, in Turkey reallocation was towards high productivity sectors (in particular finance and insurance), while in Egypt it was towards low-productivity service industries. In Tunisia productivity growth within services (especially finance and tourism) seems to have contributed most to overall productivity change.

Manufacturing suffers from limited diversification and is dominated by traditional activities. In Egypt and Tunisia, the share of the largest (2-digit) manufacturing industries in total manufacturing value added was close to 50 percent in 2006; this ratio was about 35 percent in Turkey, reflecting a somewhat higher degree of progress in manufacturing diversification. The share of medium and hightechnology industries in total manufacturing was less than 30 percent in 2009 in all four countries, and only 9 percent in Tunisia. Overall, manufacturing is dominated by traditional activities. In fact, Egypt and Morocco's manufacturing production is dominated by non-metallic mineral products and iron and steel that account respectively for 23 and 14% of manufacturing value added. If petroleum refineries and chemicals are added, the figure goes up to

50% for Egypt and 30% for Morocco. The picture is less gloomy for Turkey, which was able to develop some higher value-added and medium technology industries, especially motor vehicles.

All countries have achieved some degree of export diversification over the years but have scored poorly with respect to export sophistication. With respect to non-commodity exports the picture is similar, except for Morocco: Turkey and Egypt's export structures (where top five exports account for 55 and 42 percent, respectively, of all non-commodity exports in 2010) are slightly more diversified than those of Tunisia and Morocco (where this ratio is 61 and 77 percent, respectively). As of 2010-2012, the share of manufactured goods in total exports is close to 75 percent in Turkey and Tunisia, 65 percent in Morocco and only 47 percent in Egypt. Even though all countries made some progress in diversifying their exports into medium-technology products, the share of high technology products in exports remains quite low, below 4 percent for Egypt and Turkey, about 6 percent for Tunisia and 8 percent for Morocco. An analysis of the degree of sophistication of exports reveals that all four countries are behind not only of South Korea but also of a middle income country such as Thailand (Figure 2).





3. Industrial Policy

It is generally useful to differentiate between horizontal and vertical aspects of industrial policy. Horizontal policies would include neutral policies such as getting the macroeconomic fundamentals right, maintaining a competitive exchange rate, providing an educated workforce and improving the business environment. They can also include non-targeted interventions such as providing subsidies to R&D and training or other form of across the board subsidies and trade policy. Vertical policies, by contrast, are designed to promote specific industries where governments intervene to "pick winners." Note that while horizontal policies are not selective (in terms of particular sectors, products or firms) in design, they are likely to have asymmetric impact on different sectors.

3.1 Horizontal Policies

Macroeconomic management: Turkey stands out as the country that has most frequently suffered from macroeconomic crises in the late 1970s, in 1994 and again in 2000 and 2001. It is also the country that has had longest episodes of very high inflation. However, reforms in the early 2000s have rendered the economy more resilient to shocks and have helped it weather the 2008 financial crises without devastating economic consequences. Egypt, Morocco and Tunisia did not experience major macroeconomic dislocations similar to Turkey. During the 1980s and 1990s they did suffer from high levels of debt, shortage of foreign exchange and high current account and fiscal deficits but these problems did not degenerate into full-fledged financial crises.

All countries covered in this project have suffered from real exchange rate volatility, moderately in the case of Morocco and Tunisia and highly in the case of Egypt and Turkey. Morocco and Tunisia have experienced sustained if moderate real depreciations over the last few decades. Egypt has experienced real appreciation in the 1980s and 1990s, and Turkey in the 1990s and 2000s. Increased real exchange rate volatility may harm manufactured exports, as it increases uncertainty about profitability (Freund and Pierola, 2008).

In terms of education and skills, significant allocation of resources to education (of the order of 5-6 percent of GDP in the last three decades) has not produced the desired market outcomes such as high employment or more sophisticated production. High school students from all countries perform relatively badly in standardized international examinations. Moreover, World Bank enterprise survey data show that the proportion of unskilled workers in total production workers in manufacturing remains high. Appropriate employment opportunities for the educated population remain low. Two shortcomings are underlined. On the supply side, there may be a skills mismatch. On the demand side, relatively slow structural change and insufficient development of more sophisticated products may explain the relatively low level of skills used in production.

There is an emerging public policy awareness of the importance of research and development (R&D) but effective support is still low. Morocco, Tunisia and Turkey have formally adopted some sort of a national innovation policy. All countries except Egypt have increased spending on R&D since the 1990s, reaching about 1.1 percent of GDP in Tunisia (2009), 0.8% of GDP in Turkey and 0.6 percent of GDP in Morocco. These spending levels still lag behind the level of 2-3% of GDP spent by advanced economies on R&D. The only country that does not seem to have made any progress in this area is Egypt, with R&D spending remaining at a low of 0.2 percent of GDP in both the 1990s and 2000s.

3.2 Vertical Policies

Vertical policies, designed to support the development of specific economic activities (be it in manufacturing or other industries), have been the most controversial. Traditionally such policies have entailed trade protection, directed allocation of credit, sometimes at subsidized interest rates, various forms of tax incentives or special rules in public procurement that favor domestic suppliers.

The literature and country experiences on the adoption of vertical policy are inconclusive. There is quite a bit of literature that makes the theoretical case for targeted industrial policy, most often emphasizing learning by doing, externalities, complementarities and coordination problems. A survey of empirical evidence can point out both successful and unsuccessful cases of industrial policy.

While agreement among economists is still elusive, there are several emerging ideas that may reflect at least partial consensus. This new thinking, discussed in more detail in the next section, emphasizes several characteristics such as: institutional mechanisms through which the private sector and the government can cooperate to identify binding constraints and design policies to address them; transparency and accountability; performance requirements to ensure that support is indeed used for the stated objectives of the policy; a commitment to terminate projects that prove to be unsuccessful; and a system of evaluation in order to identify which policies work and which require to be improved or terminated.

All four Euromed economies share a similar evolution in the adoption of vertical policies. Import substitution policies were adopted during the postindependence years. The features of these policies were broadly similar across all four countries. The state took a leading role in planning the economy and often took direct control of industrial production, with the aim of promoting structural change and growth. High protection rates as well as nontariff barriers were adopted. Other features included heavy controls on domestic prices, a repressed financial system, and dominance of state owned enterprises in banking and what were seen as critical industries.

Partial reversal of central planning started in the 1970s or 1980s and was accompanied by a clear focus on export promotion. In particular, active export promotion policies were more intensive in Tunisia and Turkey than Morocco and Egypt. In Tunisia, export promotion strategy preceded those in other countries. Specifically, the government created an "offshore" sector in 1972 and put in place generous fiscal and financial incentives to attract foreign direct investments (FDI) and boost exports. In Turkey, in the 1980s and early 1990s exporters could benefit from a multitude of export incentives such as export tax rebates, subsidized credits, preferential allocation of foreign exchange and duty free imports.

The adoption of structural adjustment reforms starting in the late 1980s and subsequent privatization was accompanied by an intensification of vertical policies. All four Euro-med economies used targeted policies, if not continuously, throughout the last few decades. Sectoral policies continued in Egypt throughout the last four decades, even during the more liberal policy framework of the 2000s. Similarly, Morocco adopted a "multiplicity of investment promotion and tax exemptions schemes that appear to be dispersed, overlapping and non-focused" between 2002 and 2007. In Morocco, while SME programs were mostly horizontal, the Emergence Program launched in the 2000s did target specific industries such as automobile, aerospace, electronics, textile and food industry. While the upgrading

program in Tunisia was non-sector specific, Tunisia also used sector specific support institutions, for example in the textile and apparel industries.

Turkey moved away from sectoral interventions during the late 1990s and 2000s, but they were re-introduced in 2009. Turkey had to revise its incentive system in line with the WTO and EU requirements. As a result, starting with 1995 industrial policy moved away from sectoral targeting and started to focus on regional incentives, and more "horizontal" mechanisms such as support for R&D, environmental protection and subsidy programs for small and medium size enterprises (SMEs). In 2009, incentives started to be provided on the basis of regions, sectors and size of investment.

Only Turkey and to a much lesser extent Egypt have put in place incentives with an explicit regional orientation. A Turkish law passed in 2004 had the aim of promoting investments and employment in targeted provinces. What is noteworthy about this law is the absence of sectoral selectivity and the rather small set of instruments employed, which included, for newly created firms, 80 to100 percent exemption from personal income taxes (capped at the minimum wage), exemption from employers' social security contributions, and a Treasury subsidy of 20 percent on their electricity bill plus additional support for investments in organized industrial zones. In Egypt, the 1997 law provided tax holidays up to ten years for companies established in the new industrial zones, new urban communities or remote areas.

One of the most glaring missing elements of industrial policy implemented in the four countries is the discipline element. In general success against performance targets has not been used as a condition for future support. To the extent that export performance contains an element of discipline, Tunisia stands out for having supported export orientation even back in the 1970s, when the rest of the countries were basically closed economies. Even there (or Turkey in the 1980s for that matter, when incentives were provided for exports) it does not seem that there were any performance mechanisms. In fact, according to project findings on Tunisia, continuing support for textiles and clothing industry and the apparent absence of serious restructuring reveals "policy makers' myopia."

Some elements of transparency were adopted, especially in programs directed towards SMEs and (in the case of Turkey) regional incentives. The mechanism used in Morocco to select participants to the "imtiaz" program (that is, the presence of a special selection committee made of public and private sectors' representatives) is suggestive of a degree of "embeddedness" of the program. The more sophisticated measures of transparency, such as specifying targets and explaining why they were not reached, were not used. Similarly, there were no mechanisms through which governments evaluated the success of the various programs they promoted. One counterexample in that respect is in Tunisia, where the Institute of Competitiveness and Quantitative Studies (ITCEQ) undertook an evaluation of the upgrading program and several studies of competitiveness.

Programs especially directed towards SMEs in Morocco and Tunisia, and the regional incentives in Turkey, seem to have enjoyed clear eligibility criteria; and they were not subject to discretionary selection by the authorities. Evidence on programs directed to large enterprises is less clear. In the case of Morocco, project findings draw attention to the fact that Hassan II funds were spent with no oversight. Sometimes selection criteria may be clear but they may be designed to support politically connected (PC) and favored firms in the first place. Rijckers et al. (2014) argue that this was the case with respect to licensing requirements and restrictions on FDI in a number of non-tradable sectors in Tunisia. By contrast, the upgrading program in Tunisia does not seem to have such a conspicuous element of favoritism.

4. Prospects for the Future

Can industrial policy play an important role in structural change in the future? Recent research suggests that the answer depends on both the objective and the design of policy. The objective is important because there is much anecdotal evidence that suggests that what is presented as industrial policy is often a means of transferring rents to PC firms. For example, Rijkers et al. (2014) show that PC firms were active in sectors which were disproportionately subject to authorization requirements and restrictions on FDI, and also that new entry regulations were introduced at a higher frequency in sectors dominated by such firms and when the these firms entered. Similarly, a recent World Bank (2014) report on jobs in MENA provides econometric as well as anecdotal evidence that government regulations often are applied in a discriminatory manner. Specifically, World Bank (2014) shows, for example, that firms in sectors which are less populated by PC firms wait a longer time for construction permits. The report also suggests that the state regulatory apparatus may have been used to weaken or keep out competitors of PC firms. Finally, there is also evidence that PC firms are more profitable relative to non-connected firms, but that higher profitability may be due to not higher productivity but better access to rents and favorable treatment by governments.

Industrial policy may and often does entail creating or transferring rents to targeted firms, industries, regions or activities. But the ultimate purpose of creating those rents is to induce firms to take the necessary actions and investments to achieve social welfare objectives, such as becoming internationally competitive. It seems in many cases policy has transferred rents without generating an inducement towards higher competitiveness or other social welfare objectives. Given that launching industrial policy is a political act, what this discussion implies is that intentions of policy are important. If the objective is indeed to improve competitiveness (or employment, as the case may be), then the next step is to think about design issues.²

The new thinking about industrial policy sees the development of new industries as a complex process entailing complementarities and coordination problems which may be difficult to address through blunt trade, fiscal or financial instruments. As argued in Rodrik (2008), the development of new products or industries typically requires a multitude of specific inputs, including specific intermediate inputs, skills, machinery and equipment as well regulations in a wide range of areas. Blanket protection or subsidies may fail to address the binding market failures or coordination problems that hamper investment. Hence, industrial policy can better be seen as a process through which the public and private sectors collaborate to identify critical interventions that are required to make the industry more competitive. A good design of policy would be impossible to achieve without deep sector-specific information that typically resides among the players of the industry. Thus, industrial policy requires institutional mechanisms through which the private sector and government interact in a cooperative manner.

Along those lines, the first step in designing industrial policy should be the identification and justification of objectives. This may entail documents such as white papers, industry studies or strategic planning documents that explain and justify the industrial policy framework. In particular, the framework

² For a discussion of how developmental goals take precedence over other goals in the context of "efficacious states" see Kohli (1994).

would identify market failures and complementarities, discuss how these failures will be addressed as well as the potential costs and benefits. It would identify the key public goods, if any, that the government would need to commit. It would lay out the risks (including risks of capture) and also whether the target sectors/activities indeed have the potential and capabilities to respond positively to the proposed measures. The development of the framework would be the result of the operation of consultative mechanisms that involve interactions between the private and public sectors.

The proposed framework would further clarify the following elements:

Instruments: What are the main instruments of industrial policy? For example: trade protection, tariff reduction for imported inputs and machinery, tax breaks, allocation of credit and soft instruments such as consultation mechanisms.

Discipline: Are there targets against which the performance of the supported firms can be measured? Are there measures that link future support to performance?

Eligibility: What are the rules regarding eligibility? Are they transparent? Are they objective? Do they give discretionary power to authorities to choose among potential applicants?

Implementation: Is the administrative capacity to implement the policy available? Is it likely to remain immune to influence, capture or corruption?

Transparency: Is the amount and destination of public funds distributed as part of industrial policy made public? Can the public know the identity of the firms that receive public support?

Evaluation: Is there a system in place through which

the impact of industrial policy is measured? Is any data collected?

Note that these design elements suggest a framework for industrial policy that is relatively transparent, participatory, non-discretionary and rule-based (though they do not necessarily exclude "vertical" interventions). Much of this is fundamentally at odds with the way industrial policy was conducted in the country where - many agree - it was most successful, namely South Korea. Accounts of industrial policy in South Korea in the 1960s and 1970s suggest it was highly particularistic, discretionary and not rule-based (for example, Jones and Sakong, 1980; Kohli, 1994). It seems there was much flow of information between government and business but the government was the clear dominant party to the relationship. It seems that the Korean case was the result of very specific historical circumstances that gave a highly developmentally oriented (and highly authoritarian) government a lot of power over business, circumstances that are not often replicated elsewhere.

At the same time, one can expect tradeoffs. For example, when the objective is a relatively less complex one of increasing employment in certain regions, this can presumably be achieved within a framework that is relatively non-discretionary. When the objective is a more complex one of developing a new industry or product, an objective which may require addressing multiple complementarities, the framework may need to allow a degree of flexibility to support learning by doing that would lead to re-adjustment of instruments. Increased flexibility creates room for discretion and therefore for favoritism. Under these circumstances measures to ensure consultation, transparency and accountability gain relative importance.

The framework also suggests that industrial policy

can work in less ambitious forms and in environments where the overall institutions are less than perfect. The Turkish experience is telling in that regard. There, for most of the last decade and a half, the investment support system was not very ambitious and did not exhibit much sectoral selectivity. However, it did seem to generate additional employment (albeit at some deadweight loss) in the regions it targeted. Similarly, in Tunisia evidence suggests that there was some success in industrial policy in the off-shore manufacturing sector, despite rent capture by connected firms in many non-tradable industries and even though a dual economy was created as a result.

Industrial policy is often presumed to require a reduction in competition but recent research suggests the opposite: In their study of industrial policy in China Aghion et al. (2014) conclude that "when sectoral policies are targeted towards competitive sectors or allocated in such a way as to preserve or increase competition, then these policies increase productivity growth." Aghion, Boulanger and Cohen (2011) further argue that industrial policy is more likely to be effective when there are widespread credit constraints, and in more competitive sectors.

The idea that industrial policy may be more effective towards firms that are more credit constrained is corroborated in a study on the UK by Criscuolo et al. (2012). Van Reenen (2012) further states that "Government grants to smaller firms (e.g., those with fewer than 150 workers) were effective in increasing investment and employment, but money given to larger firms had effectively zero effect." In explaining why this may be so Van Reenen argues that large firms were probably able to "game" the system and that grants may help remove the financial constraints faced by smaller firms, whereas larger firms have deeper pockets. Another lesson that seems to be emerging is this: Industrial policy is likely to be more successful when it focuses on generating capabilities and productivity rather than when it aims at creating "national champions" - large firms that are expected to be global players with market power. Attempts to create national champions are more likely to face two problems: the policy process is more likely to be captured and the positive impact of domestic competition would be diminished.

It is likely that targeted industrial policy will become more popular in the future. The discussion presented above suggests that industrial policy is not pre-ordained to succeed or fail, and the real issue is how it is designed and implemented.

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