

Industrial policy, Structural Change and Global Value Chains Participation: Case study of Morocco, Tunisia and Egypt

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Paper produced in the framework of the Bruegel-
OCP Policy Center strategic collaboration



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Abstract

Morocco, Tunisia and Egypt (such as many other developing countries) have always considered pro-active industrial policies as an important means to upgrading their manufacturing sector. In an era of premature deindustrialization, the manufacturing sector is expected to promote structural change and economic convergence allowing job creation. On this basis, this paper thus analyzes the pace of structural transformation for the three North African countries in the last decade using two approaches. First, this study analyzes labor reallocation between five sectors of the economy and assess to what extent this movement contributes to the overall productivity growth. The second approach applied in this study is related to the construction of new measures for exports performance, quality and variety dimensions. Results show that for the case of Morocco and Tunisia, performances are comparable with a reallocation effect that was positive and contributed to 18% and 21% respectively to overall productivity growth, driven mainly by services that were able to create more and more employment in parallel with an increase in their efficiency as measured by productivity gains. However, Morocco has witnessed a productivity growth around 3.7% per year in average while in Tunisia the performance is well below, rounding up to 1.7%. For Egypt, the period 1999-2008 experienced a negative contribution of the reallocation effect to overall productivity growth, meaning that the labor factor was moving from high productivity sectors to low productivity sectors. Horizontal policies related to exchange rate management and monetary policy could be the factors to blame for this growth-reducing structural change. In addition, the increased reliance on natural resources could have compromised the reallocation of labor between low to high productivity sectors. For the quality index, it seems that not much improvement has been noted in the 2000s for the three countries, even for industries targeted by the policy makers in each country. For the variety index, the overall performance of the three countries has improved steadily in the last decade, but driven mainly by classic sectors such as textile or food and tobacco. The manufacturing sector in general in these countries has known a shrinking contribution to wealth and employment creation. The deindustrialization process could be overcome through increased integration in global value chains (GVC). Taking full advantage of the changing landscape of the production systems and networks may allow North African countries to accelerate their structural change and enhance their manufacturing sector. These countries are increasing in fact their participation in the GVCs. The challenge for each economy in this case is the capacity to upgrade and climb up the GVC ladder from low value added to high value added activities. At a starting point, it could be enough for a country to integrate the GVC in low value added activities, which is apparently the case for these countries, but beyond a certain level, these economies must aim to climb the GVCs ladder and move away from low value added activities. Describing the right ingredients for any industrial policy is, in the authors' point of view, the best way to deceive, but economists agree on the importance of upgrading the logistics and infrastructure framework, which are relevant to keep the economy competitive and highly anchored to international markets. In addition, a success in climbing the GVC ladder is contingent on capacity to ensure the supply of skilled labor to leverage the challenge and move the economy to high value added activities. Active interventions in selective sectors is not enough to build a strong manufacturing sector and a competitive economy. A "policy mix" between vertical and horizontal policies is to be kept in mind. Maintaining a sound macroeconomic framework is also crucial, especially regarding monetary policy decisions, exchange rate movements and the fiscal policy stance.

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Introduction

Interventionism of the public sector within the economic activity has been a major controversial point for different economic doctrines. Industrial policy is one feature of this issue. It has been argued that the development process cannot be triggered under the famous adage of “*laissez faire laissez passer*,” but instead the public sector needs to intervene maybe not as an alternate to the private sector but more as agent who strives to correct some inherent market failures observable especially in developing countries. Nowadays, economists question less the merits of industrial policy but focus more on the scope and the how: two issues within consensus is missing.

Emerging and developing countries have in fact always considered industrial policies (especially vertical policies) as a conditional step towards development. While experts agreed that industrial policy could be defined as “all kinds of effort on the part of government to encourage and promote a specific industry or sector,” it is much associated with the “manufacturing sector” and the belief that the catching up process goes through building an industrial structure, in an era of premature deindustrialization in the developing world. The World Bank goes further and defines industrial policy as “government efforts to alter industrial structure to promote productivity-based growth.” Dani rodrik (2007) argues that growth or development, as he said, deal fundamentally with the question of structural change: it involves producing new goods based on new technologies, and transferring resources from traditional activities to these new ones.

North African countries are not an exception, and fully believe in the importance of a strong manufacturing sector that could create enough job opportunities and sustain their growth model. Keeping in mind the success stories of East Asian countries, they have launched many active industrial policies that set quantitative targets in terms of exports, investments and employment (e.g. Tunisia and Morocco). Besides, these economies still allocate an important share of their workforce to the agriculture sector that operates at very low productivity levels. Achieving reallocation of the labor factor from agriculture to highly productive sectors (at least sectors in which productivity is higher than agriculture) is expected to generate important income gains. This movement of labor should play a crucial role in producing convergence within economies but also across developed and developing countries. That is why we are conducting some structural change analysis for this group of countries, with a special focus on manufacturing sector behavior in terms of productivity and labor relocations patterns.

One feature of the structural change in these countries is the upgrading process of their exports. In this paper, we propose to measure this upgrading process through the use of two indices: export variety and export quality. Horizontal diversification (variety expansion) and quality upgrading are two important facets that relate to the transformation of a country’s economic structure. The ability to make transition from simple and low-quality to sophisticated and high-quality products is viewed as a necessary condition for export success and eventually economic development (Khandelwal, 2010). Quality upgrading tends to be higher in manufacturing than in agriculture and natural resources.

This paper aims to analyze the economic performance of this group of countries in relation to their structural change in the last decade. Industrial policies related to the manufacturing sector of 3 North African countries (Morocco, Egypt and Tunisia) will be presented, exploring to which extent these strategies have served the structural change of these economies, in terms of productivity patterns and export performance. Furthermore, some stylized facts will be discussed in relation to the degree of participation of these countries in the Global Value Chains (GVCs), within a changing landscape of production systems and trade networks. In addition, light will be shed on the opportunities associated with the integration of these countries in the GVC and risks of being caught in the “low value added activities trap.” This essay does not claim to fully apprehend this issue and assess the impact of these policies over economic activity but rather to serve as viable basis for discussion.

I-Review of the industrial policies in Morocco, Egypt and Tunisia:

It is generally useful to differentiate between horizontal and vertical aspects of industrial policy. Horizontal policies include neutral policies such as maintaining a competitive exchange rate, providing an educated workforce and improving the business environment. Vertical policies are designed to promote specific industries where governments intervene to “pick winners” by providing tax holidays or subsidies.

I-1 Horizontal policies

I-1-1 Macroeconomic management and business environment

Recently, Morocco, Tunisia and Egypt were considered to have fared relatively well in the aftermath of the 2008 global financial crisis. However, they all suffered from severe macroeconomic imbalances during the 1980s including high levels of debt, a shortage of foreign exchange reserves and fiscal deficits. To restore these imbalances, IMF and World Bank reform programs were adopted during the 1990s. These programs also made a first attempt at reducing the role of the state in economic activity and also involved the partial implementation of Washington consensus structural reforms including trade liberalization, financial sector deregulation and privatization.

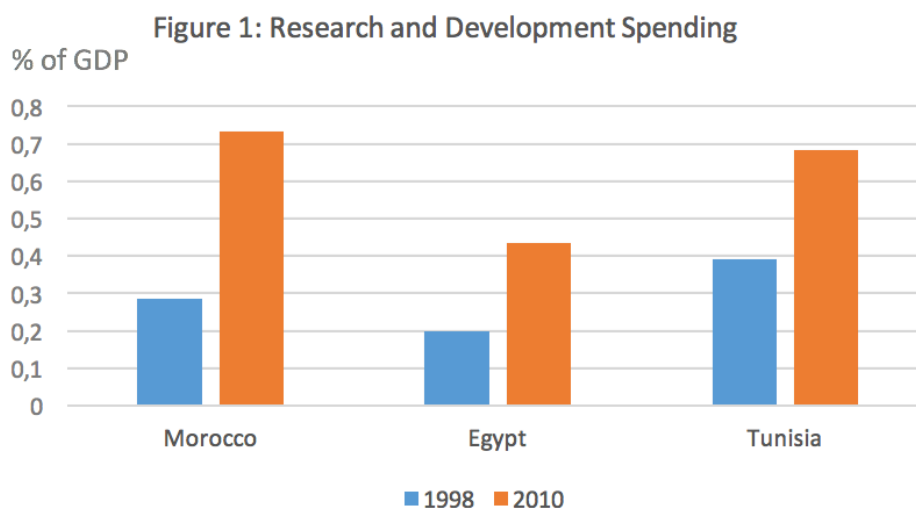
A decade after, this set of countries adopted other types of reforms related to the investment climate in order to encourage the private investment. Egypt, for example, changed taxes and tariffs in 2004, and significantly streamlined regulations to start a business and also has a one-stop shop for investors. Morocco established commercial law courts and opened almost all economic sectors to foreign investment and Tunisia strengthened investor protection and reduced customs processing delays by two days on average.

I-1-2 Education, skills and support to research and development

Structural change occurs when labor moves from low to high productivity sectors. To make this reallocation happen, labor must have the required education and skills to access the more productive jobs. These factors thus determine the dynamics and pace of structural transformation. Recent empirical analysis confirms that one important determinant of productivity growth associated with labor reallocation is education attainment (Lee and Malin, 2013).

Given their demographic structure, all three countries have considerable human capital potential. Definitely aware of this potential, governments of the three countries have spent around 5% of GDP between the 1970s and the 2000s on education and training.

In addition, there is an emerging public policy awareness of the importance of R&D, and to varying degrees, all three countries have made some progress in promoting R&D activities. Morocco and Tunisia have formally adopted a national innovation policy. Furthermore, they have formulated long-term visions compatible with this policy. In Egypt, the Science and Technology Development Fund established in 2007 is estimated to have supported 571 projects with a total budget of 60 millions euro (FEMISE report 2015).



I-2 Vertical policies

Compared to horizontal policies discussed above, policies that are designed to support the development of specific economic activities (be it in manufacturing or other industries) have been the most controversial. Such policies may entail trade protection, directed allocation of credit, various forms of tax incentives or special rules in public procurement that favor domestic suppliers. One common objection against targeted industrial policy is that bureaucrats are not likely to have the necessary competences to identify deserving or winning industries better than entrepreneurs. An alternative view is to see industrial policy as a process through which the public and private sectors collaborate to identify critical interventions that are required to make the industry more competitive (Rodrik, 2008).

Country cases

Morocco

Morocco followed import substitution policies throughout the 1960s and 1970s. Such as in many other countries, this was a period of high protection rates as well as non-tariff barriers such as import licenses and import quotas. The trade regime started to be liberalized in the 1980s, which was paralleled by a number of free trade agreements and in particular an Association Agreement with the European Union signed in 1996 and implemented since 2000.

Industrial policy in Morocco since the 1990s can be divided in three periods. In the 1990s the main focus was on privatization. This was a period of rapid decline of trade protection.

The second period, between 2002 and 2007, was characterized by a multiplicity of investment promotion and tax exemptions schemes. At the same time, there were two initiatives where the private sector was targeted directly:

- The first was directed to large firms and relied on privatization revenues collected at the Hassan II Fund for Economic and Social Development.
- The second was directed to SMEs, and managed by the SME Agency (ANPME). The purpose was to assist SMEs in their “upgrading” (*Programme de Mise à Niveau*).

In the third period, the “Emergence Program” was implemented. The program, targets specific sectors such as automobile, aeronautics, electronics, textile and food industry (African Development Bank, 2012), redirecting exports towards high-growth markets. Investment incentives (to foreign and domestic investment) were granted under the general investment incentives regime (Investment Charter and its implementing decree), under the Hassan II Fund for Economic and Social Development and for large projects through an agreement regime.

Under the Emergence Program, the SME Agency (ANPME) manages two support schemes, one that aims to provide direct subsidies to support the growth of promising SMEs (Imtiaz), and the second to support efforts by SMEs to increase productivity through efforts in areas such as marketing, finance, quality control, as well as supply management design and R&D (Moussanada).

This program was launched in 2005 and updated in 2009, to become the National Pact for Industrial Emergence (PNEI). This pact set specific objectives for increasing industrial GDP, spillover effects of the tradable sector and creating additional jobs by 2015. Six economic sectors – known as Morocco’s Global Jobs (*Métiers mondiaux du Maroc* - MMM) – have been identified and supported due to their strong potential for growth: aeronautics, offshoring (subcontracted activities from outside the country), food industry, textile, electronics and automobiles. The pharmaceutical and chemical and para-chemical sectors were added to the list in 2013. The choice of sectors was motivated by re-casting the country’s natural strategy from being based on geographical location and availability of cheap labor to one based on logistics and competitive offer.

Some significant results from this program can be found in the automobile and aeronautic sectors:

- Morocco’s automobile sector has experienced significant potential for growth for almost a decade, with a double-digit annual growth for investment and exports. One feature of that is the opening of the Renault-Nissan industrial complex in Tangiers in 2012, which has an annual production capacity of 340,000 vehicles, 90 percent of which are intended for export, in particular to Europe. Since the Renault group began operating in Morocco it has continued to implement a policy of local integration aimed at increasing the number of components that are locally sourced.
- Another example is the development of the aeronautic sector, where a promising global value chain has been aided by specific government measures. With 100 percent of its production aimed at exports, the Moroccan aeronautics sector comprises nearly 100 companies of international scope (such as Boeing and EADS), involved in activities covering production, services and engineering, which are the main components of the global value chain for aeronautics.

To ensure the success of the PNEI, the Moroccan government has set up a direct assistance device for training for the main four sectors (offshoring, automobile, electronic and aeronautics). These aids concern essentially the vocational training. More precisely, the state will for example support the establishment of training institutes, which are intended for management by professionals from these sectors. From direct aid to training, key elements of the PNEI, the main objective is to strengthen the attractiveness of Morocco as a country of industrial investment. These aids are one of the essential elements of the MMM development project in the coming years.

Figure 2: Export value of Morocco's "Emergence program key sectors"

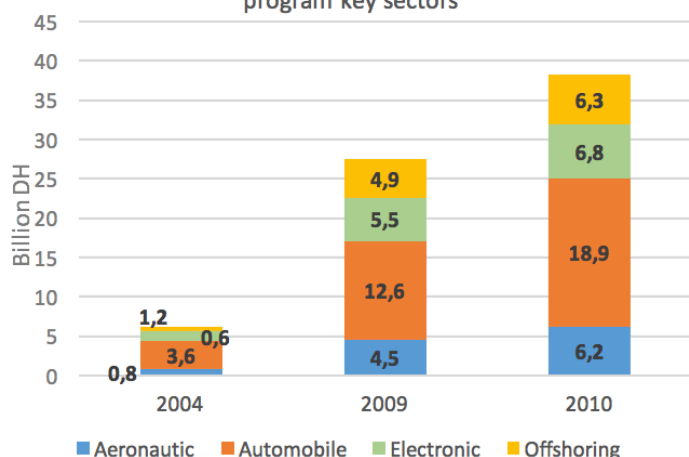
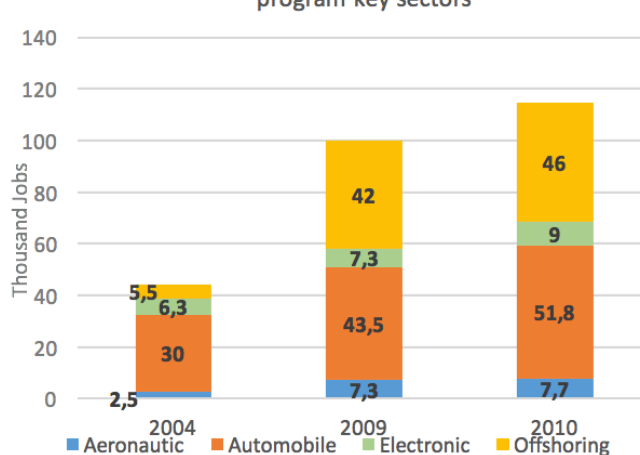


Figure 3: Job creation in Morocco's "Emergence program key sectors"



Source: Ministry of industry, commerce and new technologies morocco 2012.

Tunisia

An interesting aspect of industrial policy in Tunisia is the emergence of an export promotion strategy earlier than many other developing countries that like Tunisia had an import substitution policy. However, a major problem that Tunisia faced after independence was a massive departure of foreigners who dominated economic activities until that time. Tunisia first responded by a public-led import substitution strategy. This was a period where nominal and effective protection rates were very high and almost all imports required some kind of licensing and/or administrative approval (World Bank, 2008; Nabli and al., 1999).

In the early seventies, this policy was replaced with one that emphasized both import substitution and export promotion along with private sector development. Specifically, the government created an “offshore” sector in 1972 and put in place generous fiscal and financial incentives to attract foreign direct investments and boost exports. There was a particular focus on manufacturing, especially of textiles. Firms that exported all of their products enjoyed duty-free raw materials and equipment imports, a 10-year corporate tax holiday, free repatriation of profits and trade facilitation services. Heavy industry, transport, water and electricity were still reserved for the public sector (African Development Bank, 2012, p. 160).

The policy framework of import protection started to change in the 1990s and the government started to reduce trade barriers. The initial trigger was the launch of the Economic Recovery and Structural Adjustment Program (ERSAP) in 1986. This program involved the reduction of tariffs and easing of quantitative restrictions on imports. Tunisia became a member of WTO in 1995 and signed an association agreement with the EU in 1995.

An upgrading program aimed at increasing the technological, marketing and organizational capacities of firms increasingly facing EU competition accompanied the liberalization in industry. There were also some measures to facilitate integration into global markets, such as streamlined technical controls, improved customs procedures, and increased access to information on standards and technical regulations to raise transparency and meet international trade obligations (World Bank, 2008).

Ghali and Rezgui's (2013) provide an overview and assessment of the two main components of industrial policy in Tunisia. The first is the manufacturing upgrading program and the second is export promotion policy. The upgrading program (*Programme de mise à niveau de l'industrie*) was launched in 1996 with an aim of preparing enterprises for the requirements of free trade with the EU.

According to Ghali and Rezgui, the upgrading program went through three phases. In the first phase (1996-2000) the program helped consolidate the physical and intangible investments of all firms. In the second phase (2000-2005) there was an effort to improve the business environment that supports industrial activities. The program aimed at providing financial support to upgrade about 2,000 private firms between 1995 and 2005 (Goaied and Jendoubi, 2007). Enterprises went through an external audit focusing on finances and competitiveness; they also were required to submit an upgrading plan that could make them eligible for government financial support to modernize equipment, raise quality standards and strengthen balance sheets. The third phase, after 2005, was characterized by the promotion of certification and standardization of products and processes and promoting innovation, allowing the Tunisian industries to become more competitive for better integration into the Global Value Chains (GVCs).

Egypt

Egypt embarked on import substitution industrialization (ISI) in the 1930s, in the aftermath of the 1929 great depression and the ensuing sharp decrease in world cotton prices. ISI intensified in the post-independence years starting the 1960s, with a complete shift to a planned economy where the state took direct control of industrial production. This orientation was accompanied by a massive wave of nationalization in industry and trade. During this period, industrial policies were highly selective: the state not only indirectly influenced flows of labor and investment into different economic sectors through discriminatory incentives (such as differential tax rates) but also very directly as the country's largest investor (Galal and El-Megharbel, 2005).

The period 1974-1990 was often called the “Open Door” (*Infitah*) policy period. During this period, central planning policies were partially reversed with the adoption of partial liberalization. Reforms concentrated on the liberalization of the foreign exchange market and consumer imports.

Yet, some features of the old economic regime remained in place, in particular with respect to pricing and subsidy policies, import restrictions to protect domestic industry, the overwhelming public sector that remained a primary actor in production and maintained tight control over state enterprises and continued to monopolize public utilities.

In 1991, a structural adjustment program was adopted and some elements of the industrial policy were phased out or reduced. With the adoption of the joint World Bank-IMF Economic Reform and Structural Adjustment Program (ERSAP), the government undertook a first phase of reforms that helped to shift the economy partly from central planning towards market-based mechanisms, more trade openness and a more leading role for the private sector. This included macroeconomic stabilization reforms, the introduction of a competitive exchange rate, and partial price liberalization (including agricultural prices). This phase also witnessed the privatization of some public enterprises but not the financial sector.

In 2004, a new wave of reform was launched. The aims were to stabilize the exchange rate, reduce and rationalize the tariff structure, make drastic cuts in income tax rates, streamline tax administration and employ more efforts to reform the business environment and promote the private sector. Nevertheless, the shift to the market economy was never complete with the remaining important role of the public sector, protection of domestic industries through both relatively high tariff rates (e.g. in the textile and clothing and food industries) as well as the substantial energy subsidies which primarily benefit capital intensive sectors.

In terms of the trade regime, Egypt considerably liberalized its economy and opened it up to foreign trade during the 1990s and efforts intensified as of 2004. During the 1990s, reductions and exemptions from custom duties were given to certain industries (particularly consumer durables and assembly industries) as well as the use of local content requirements. In 2004, the government implemented significant across-the-board tariff cuts and a reduction in the number of tariff bands.

An Industrial Development Strategy (IDS) was developed in 2005 with the goal of transforming the industrial sector into an engine of growth. The Egypt IDS takes a vertical approach to industrial policy, focusing on selected manufacturing sectors that the government should support. The EIDS defines eight fields of action: (i) human resources and entrepreneurship, (ii) access to finance, (iii) infrastructure, (iv) innovation and technology, (v) quality upgrading, (vi) enterprise competitiveness, (vii) export promotion and (viii) FDI attraction.

Under the IDS, strategic sectors were identified to benefit from special investment and export promotion efforts: engineering, food processing, chemicals & pharmaceuticals, textiles and clothing, building materials, furniture, paper & paperboard and leather. The strategy explicitly excludes (i) companies in the tourism and hydrocarbon sectors, (ii) microenterprises (with fewer than 10 employees) and (iii) small companies (with fewer than 50 employees) – as well as (iv) non-manufacturing companies.

II- How did North African countries perform in terms of structural change?

In this section, we conducted analysis of changes in the economic structure of the three countries in terms of productivity patterns and export performance. As a first step, we measured the contribution of labor reallocation between below average productivity and above average productivity to overall productivity growth. Then, we analyze export performance using two new indices: export variety and export quality at an aggregated level and per sector.

Structural change: how to measure it?

We tried to assess the structural change in Morocco, Tunisia and Egypt since 2000 to 2013. Due to data availability, we cannot extend this analysis prior to 2000. Besides, and in order to explore any effects of the crisis on the economic structure of these countries, we divided our period to two sub-samples 2000-2008 and 2008-2013 and give our view on any signs of break in the economic transformation that have been witnessed elsewhere (Riley, Bondibene and Young, Bank of England 2015). The sectoral desegregation of employment does not allow an extensive analysis to be performed. Besides, data inconsistency between national accounts and employment poses several problems during this

work. As a result, our analysis is aggregated to five sectors (agriculture, manufacturing, mining and utilities, construction, and services).¹

II-1 Labor movement and contribution to overall productivity growth

We follow the methodology described by Rodrik and Macmilan (2011) to measure the contribution of employment reallocation to productivity growth. A key element to economic prosperity in the developing world is about channeling the employment force from the agriculture sector, generally less productive, to sectors that experience larger productivity. As labor move towards modern sectors, the catching up process of these countries is launched insuring expanding incomes. If this economic transformation is observed generally in the long run, what matters most is the speed in which reallocation takes place.

$$\Delta P / P^0 = (\sum_i (P_i^T - P_i^0) S_i^0 + \sum_i (S_i^T - S_i^0) P_i^T) / P^0$$

Where S_i is the share of sector i in overall employment, P_i is the labor productivity level of sector i , and superscript 0 and T refer to the initial and final period. The first term is the within effect, that measures the productivity growth of each sector induced by sector-specific factors (increasing capital deepening or/ and increase in total factor productivity). The second term, which is related to our issue known as between effect, measures the contribution of the reallocation to labor factor to productivity growth. Productivity could increase in fact simply through moving employees from low productive activities to above average productivity activities. In some economies, Africans in particular, the reallocation of factors was observed in the opposite direction, meaning that the labor factor moved to below average productivity (Rodrik and Macmilan, 2011).

We also measure the dispersion between sectoral productivity along our sample. We expect that the productivity gap is supposed to shrink with economic development making agricultural productivity comparable to other sectors in the economy. This dispersion indicator refers to the coefficient of variation that would be compounded in two versions, with and without the mining and utilities sector.

$$\sigma(P_i) / \text{mean}(P_i)$$

II-1-1 Morocco structural change: positive contribution of labor reallocation to productivity growth especially toward services.

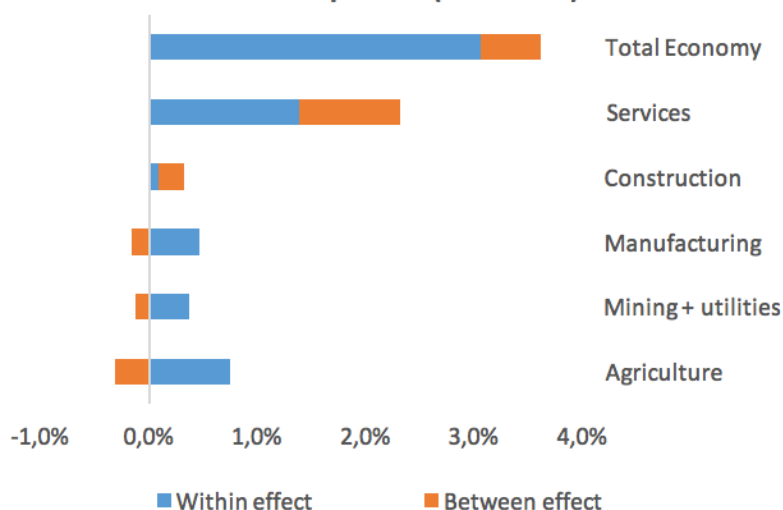
Between 1999 and 2013, the Moroccan economy experienced an annual increase in its overall productivity by 3.7% on average, almost 13% of this increase was due to the labor reallocation effect toward sectors with productivity above average and the rest was generated through capital accumulation and technological upgrade (within effect). By sector, it seems that services have been attracting more and more employees in this period and was, with its above average productivity, the major contributor to the structural change. Besides, productivity within this sector has witnessed an average increase of 2.6%, accounting for 40% of intra-sectoral gains, so the effect of reallocation has been amplified by the intra-sectoral productivity gains. Gaaitzen de Vriese, Marcel Timmera, Klaas de Vries (2013) pointed out this issue and proposed a new methodology for productivity decomposition that considers “dynamic productivity gains” triggered by the combination of two effects at the same time “reallocation and intra-sectoral gains.”

$$\Delta P = \sum_i (P_i^T - P_i^0) S_i^0 + \sum_i (S_i^T - S_i^0) P_i^0 + \sum_i (P_i^T - P_i^0) * (S_i^T - S_i^0)$$

Gaaitzen de Vriese, Marcel Timmera, Klaas de Vries (2013) suggested to decompose the between effect also into two components. The first component (The second in this equation) measures the contribution of labour reallocation across sectors, being positive (negative) when labour moves from less (more) to more (less) productive sectors, with the fact that productivity in this *case refers to levels observed in the initial period*. The third term represents the joint effect of changes in employment shares and sectoral productivity growth. It is positive (negative) if workers are moving to sectors that are experiencing positive (negative) productivity growth. Hence, the second term in equation measures whether workers move to above-average productivity level sectors (static reallocation effect) whereas the third term measures whether productivity growth is higher in sectors that expand in terms of employment shares (dynamic reallocation effect).

¹ In the final version of this paper, we plan to base our structural change analysis over a deeper employment breakdown.

Figure 4 :Yearly average productivity growth, decomposition (1999-2008)



Source : HCP and authors' calculation

In the Moroccan case, using this approach for overall analysis does not result into different outcomes when it is aggregated at the national level. In terms of sectoral breakdown, the aggregated result however hides sectoral gaps. For the service sector, it shows an important fact related to the ability of this sector to generate more employment and at the same time increase efficiency in the sector. Our analysis is quite descriptive, yet it reveals that capital accumulation and/or technological change can go hand in hand with jobs creation in the service sector. If we go deeper analyzing services by sub-sectors, results revealed that, services to corporations and personal services, followed by telecommunications and finances are the main contributors to the between effect. These sectors have witnessed in fact an slight increase in their employment shares during that period but with their productivity hugely above average and agriculture levels, the effect has been amplified leading to an increase in overall productivity.

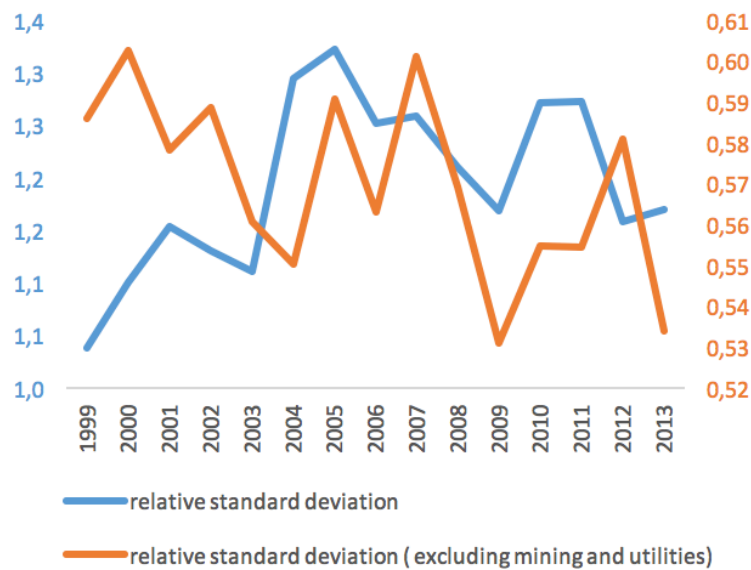
Taking for example telecommunication and finances, their productivity level are respectively 40 and 23 times higher than agriculture. Therefore, if 40 employees in agriculture are being dismissed but one of them is heading to telecommunications sector (39 are unemployed so their productivity is zero), overall productivity would not change. This hypothetical example shows clearly the importance of the reallocation of labour between low productive sectors and high productive sectors and the leeway of welfare improvement in the Moroccan economy.

Agriculture, a sector that creates between 14% and 18% of total VA and employs around 40% of the total labor force, has made great progress in terms of intra-sectoral productivity gains, and contributed to 1 third of intra-sectoral gains in the economy. This sector also witnessed a shrink in its labor force, standing at 40% in 2013 compared to 48% in 1999, meaning that the labor force was pulling out of agriculture. In spite of this important progress, productivity in agriculture is still considerably below average and represents only half of the overall productivity. This situation demonstrates the potential extent of labor reallocation between agriculture and other sectors of the economy.

For manufacturing, its share in terms of wealth creation has steadily decreased over time, from 19% in 1980 to 13.5% in 2013. Employment share has witnessed also the same pattern with a decline to 10.4% in 2013 instead of 12% in 1999. Regarding productivity, the manufacturing sector experienced almost the same pattern as agriculture, with a positive contribution to overall growth but much less than services or even agriculture, estimated at 0.5% percentage points. Compared to the productivity level in the service sector, it represents 90% of productivity. What come out of this analysis is the process of deindustrialization of the Moroccan economy at an early stage. This process which is not specific to Morocco but observable in the most of the developing world, should not be tackled as negative issue (at least according to this simple methodology), as long as new entrants in the labor market are channeled to the highly productive sector or at least above manufacturing productivity levels. Moreover, what is contrasting compared to services is the behavior of the sector in terms of productivity growth that was achieved without attracting much employment. In this case, capital deepening has contributed to increased productivity at the expense of employment. Labor was pooled out of manufacturing in relative terms (shares) and reallocated to services.

Are productivity gaps declining?

Figure 5 : Coefficient of variation



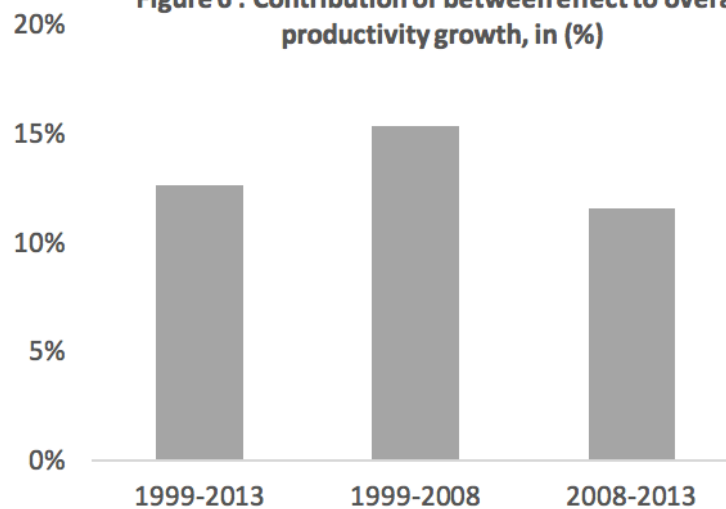
Source : HCP and authors' calculation

The structural change that the Moroccan economy experienced during this period apparently did not lead to a decline in productivity gaps, as measured by the coefficient of variation. Actually, the opposite is true; Gaps are showing an upward trend. This quite ambiguous result should be nuanced, given the increased volatility shown by the mining sector, for which the productivity level is six times bigger than average. The mining sector, along with utilities, is known for its high capital-deepening ratio. Excluding this sector, it is evident that gaps have shrunk during our sample from 0.58 to 0.52.

Overall, the reallocation of labor between the agriculture sector towards services in general combined with the increase in intra-sectoral productivity growth driven by capital accumulation and technological upgrade has led to expanding incomes in Morocco. GDP per capital as a measure of development has more than doubled in this period, reaching 7.3 thousand dollars (PPP) compared to 3.4 thousand dollars in 1999.

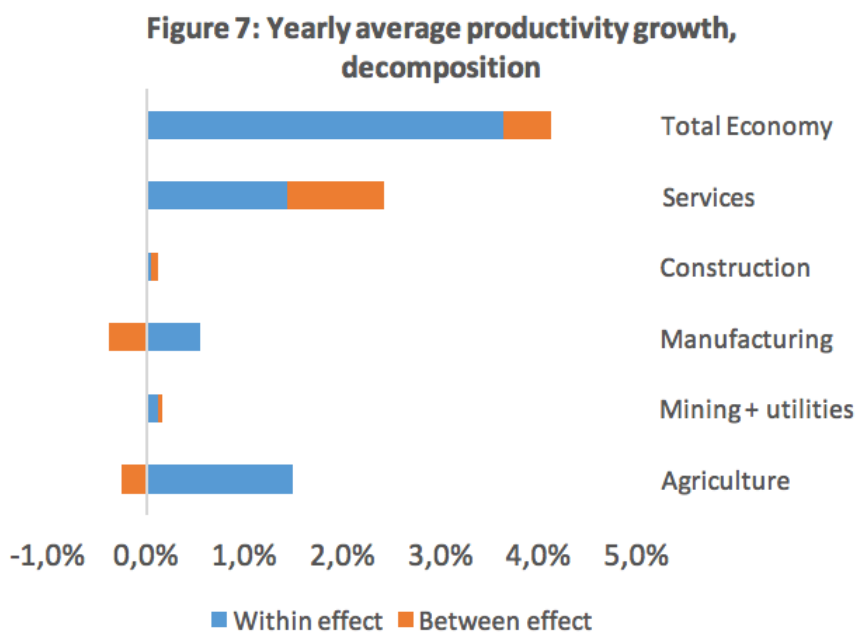
Any impact of the crisis on the productivity pattern?

Figure 6 : Contribution of between effect to overall productivity growth, in (%)



Source : HCP and authors' calculation

Almost 8 years after the onset of the crisis, economists are still puzzled by the pattern of labor productivity in some advanced countries that is still below its pre-crisis level and does not grow at its pre-crisis potential growth rate (Oulton and Barriel, Bank Of England. (2013)). The severity of the shock resulted in permanent damage to the supply capacity and risks of misallocation of resources including labor between high and low productive companies and sectors. The objective of this session is to consider whether the crisis have compromised the structural change in the Moroccan economy.



Source : HCP and authors' calculation

We conducted the same approach above, this time for two sub-samples 1999-2008 and 2008²-2013. At a first glance, the figure above shows that the reallocation effect is still contributing positively to productivity growth, meaning that the process of optimal labor allocation is still going on. Compared to overall productivity growth, it seems although that the contribution has slightly slowed down, to 11.8% of total productivity growth compared to 15.3% prior to 2008. What is striking in this case, is the within component that is supposed to shrink after the crisis. The relative rigidity in the labour market in Morocco, leading to higher firing costs, should have contributed to a lower elasticity of employment to added value evolution. In fact, sectoral within contribution to overall productivity growth did not show any sign of decrease. Quite the contrary, it has increased to an average growth per year of 4% instead of 3.5%.

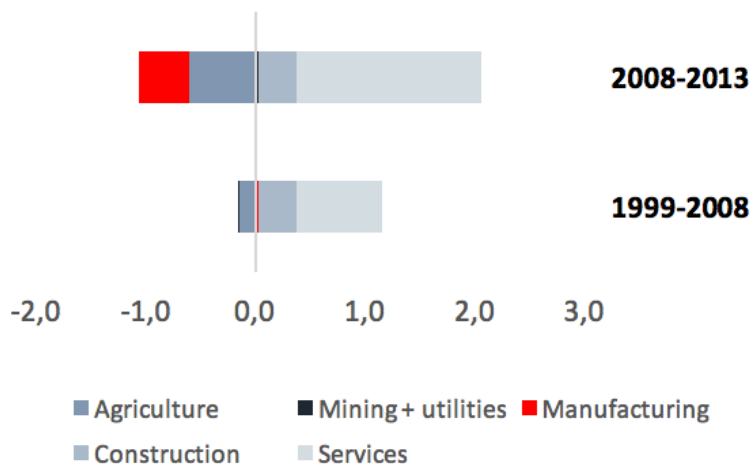
By sector, the biggest contribution was due to the dynamic evolution of productivity within agriculture that experienced a growth pace in 2008-2013 beyond the performance during 1999-2008, which in particular reflects exceptional rainfall conditions. Studies identified in Morocco great implications of rainfall over labor productivity and total factor productivity (TFP) in the agriculture system (Haut-Commissariat au Plan, 2016). This study estimated that the growth rate of TFP in the agriculture sector reached an average of 9.5% after 2008 while before that, it improved yearly by only 2.5%. Thus, near half of the increase in within the productivity effect has been driven by an improvement in agriculture productivity.

Except for mining and utilities where productivity gains have decreased, other sectors did not show any specific behavior after the onset of the crisis and kept their previous trend. In fact, studies over the capital accumulation by sector in Morocco identified clearly that growth rate of capital per worker has improved between 1998-2007 and 2008-2014, from 4.8% to 5.1% on average in industry and from 4.6% to 5.9% in services, while the TFP growth rate in services rose to 2% on average instead of 1.4% before. One explanation of the small effect of the crisis over the structural change is the nature itself of the crisis. While in advanced countries, the crisis started in the banking sector and then spread to the real sector, in Morocco, the banking sector has been spared and the crisis affected mostly the

² 2008 has been chosen as point of reference for the crisis; it might be argued that the implications of the crisis did not materialize until 2012 with a decrease in non-agricultural output growth rate. However, in order to harmonize all the sections of different northern countries and to have enough data for comparison, we decided to keep it as a turning point.

tradable sector. Riley, Bondibene and Young (2015) explained that when the banking sector took a hit, it might lead to a misallocation effect and then ultimately inefficiencies in resource allocation across firms and sectors.

Figure 8: Jobs creation or losses in percentage of jobs creation

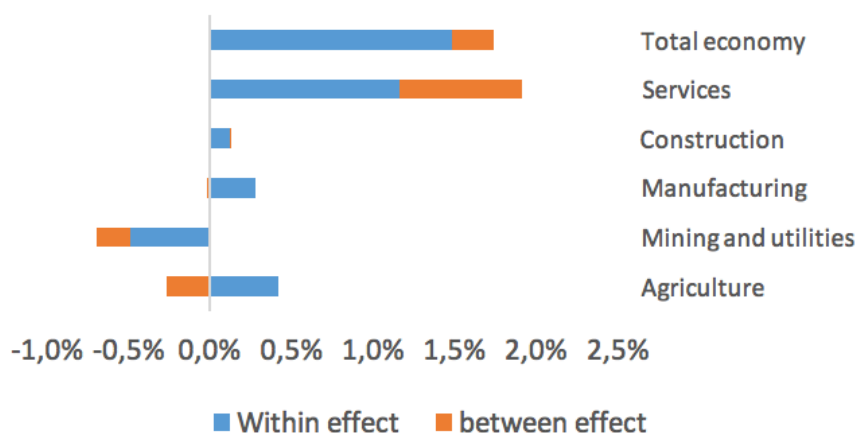


Source : HCP and authors' calculation

While the productivity growth rate did not change after the crisis, it hides interesting fluctuations across employment and value added patterns. In fact, the employment level has decreased in manufacturing by 9.1%. Regarding value added evolution, it has kept the same upward trend with a slight deceleration to 2% on average compared to 3% previously, suggesting that the manufacturing sector experienced a substitution between labor and capital during these 5 years that kept production increasing although at a rate less than before. It might be also that the TFP contribution to added value growth has expanded hugely to offset the decrease in employment. The question to ask is about the nature of this substitution effect, if it has a cyclical component or reflects some major changes in the production process within manufacturing.

II-1-2 Towards structural change in Tunisia:³

Figure 13: Decomposition of productivity growth, 1989-2008

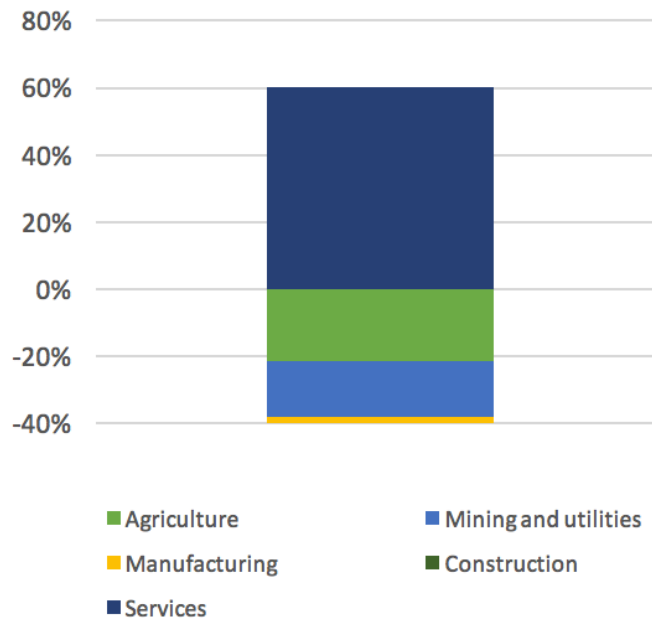


Sources: ILO and the UN, National Accounts Main Aggregates Database and authors' calculation

³ For Tunisia: employment data are available for 1989 as a reference point and not 1999 as for other northern African countries.

Unlike Egypt, structural change analysis for Tunisia revealed that over the period 1989-2008, 15% of productivity growth estimated at 1.7% was attributed to the reallocation effect between apparently below average productivity and above average productivity. A common feature in all these countries is the low productivity in agriculture that still generates an important part of wealth has one of the biggest share in employment. However, Tunisia compared to other countries allocate only 15% of its labour to agriculture, producing around 10% of total value added. Between 1989 and 2008, employees moved from agriculture to services. The service sector was able to attract most of the labor supply out of agriculture, and mining and utilities. In fact, mining and utilities, representing 9 times the average productivity, has witnessed a decline in its employment share, from 1.8% to 1.2%, which keeps the employment level at almost the same level. Productivity growth could be more important if employment was mainly reallocated from agriculture and construction, where productivity is 2 to 3 times lower than average.

Figure 14: Share of between effect by sector



Sources: ILO and the UN, National Accounts Main Aggregates Database and authors' calculation

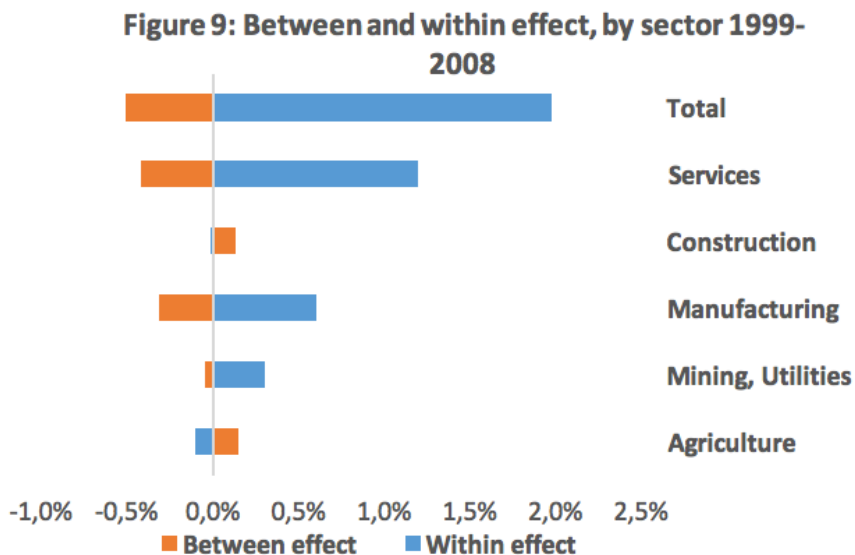
Marouani and Mouelhi (2015) addressed the same issue for the Tunisian economy given a deeper employment breakdown and assessed the contribution of structural change to productivity growth. They showed in fact, that structural change during the period 1983 and 2008 is positive. Labor supply has been heading to hotels and restaurants, and finance, two sectors that have an above average productivity. They also showed that the effect would be much more important if employees were not reallocated from mining and public utilities, which have an average productivity 3 and 6 times higher than average. In addition, their results suggest that transport and communication, manufacturing and agriculture sectors have made important progress in terms of their within productivity growth. For the Tunisian case, manufacturing has been losing its share in wealth creation, shrinking from 17.2% in 1989 to nearly 16% in 2008 and 15% in 2013. The pattern of decline in share of employment is less steep. Its share barely declined from 19% in 1989 to 18.6% in 2008 and 10% in 2013. Unlike Egypt and Morocco where manufacturing is losing employment, in Tunisia manufacturing is still demanding for labor. Even after the crisis, the sector did not seem to be seriously impacted.

Ghali and Rezgui (2013)⁴ extended the analysis of the manufacturing sector and revealed that the apparent steady way of change inside the manufacturing hides some deeper transformations. It has been able to consolidate its strengths by increasing its capacity to attract more skilled labor, which is a signal of technological upgrading and transition towards highly productive industry. A production function has been estimated where manufacturing value added growth is broken down into the contribution of skilled and unskilled labor and capital; the residual is considered as a contribution of technology (TFP). The decomposition suggested that TFP has been the major contributor to growth especially in the recent period (2006 – 2010). By sub-sector, results are quite heterogeneous. In food processing, mechanical and

⁴ Ghali and Rezgui (2013) "Structural Transformation and Industrial Policy" *FEMISE*.

electrical, and chemical and rubber, the contribution of skilled labor approximated by tertiary educated workers is valuable and has been rising since 2006, while the situation is different in the other industries. For example, in the textile and leather industry, the workers with secondary school level of education still represent key sources of value added growth, however in construction material and glass, skilled workers do not seem to fit into the production system and have a negative contribution to growth, indicating that the technology used in this sector is rather intensive in low skilled labor.

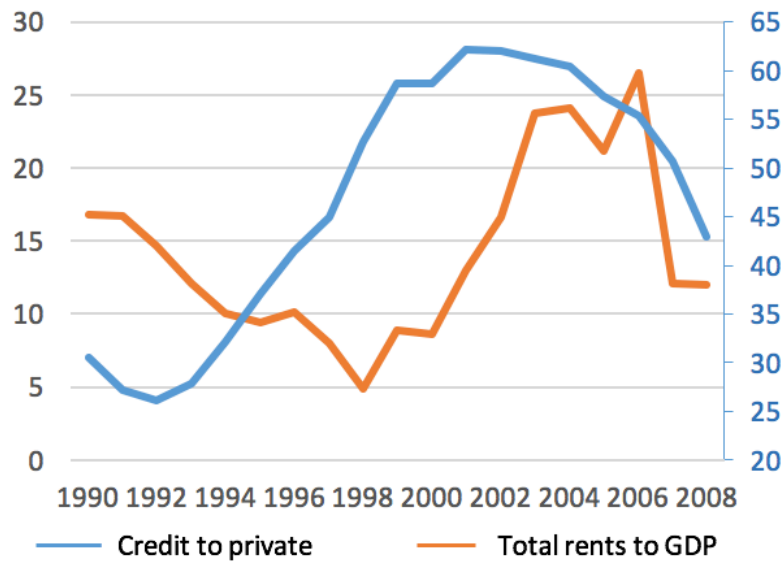
II-1-3 Structural change in Egypt: growth-reducing structural change.



Sources: ILO and the UN, National Accounts Main Aggregates Database and authors' calculation

Following the same methodology applied for Morocco, the analysis for Egypt revealed completely different results in terms of the reallocation effect contribution to overall productivity growth. In coherence with some studies dealing with that issue, (ADB, 2013; EIB, 2014, the between effect has a negative impact over productivity growth. In fact, sectors that have been creating more jobs have a below average productivity level, while above average productivity has witnessed a decreasing employment share, leading to a negative reallocation effect. According to El Haddad (2013), he suggested that the negative structural shift has been triggered since 2002, while before the between effect contributed positively to overall productivity. He also considered that this negative contribution is partially due to reallocation within services from highly productive sectors, such as banking and finance to low productive sectors, like informal trade (e.g. street vendors) and small scale repair shops (ADB, 2012). Simultaneously, it is obvious that the construction and agriculture sectors have been attracting new entries to the labor market more than other sectors in the economy, which is quite challenging for the prosperity of the Egyptian economy. These sectors are undoubtedly low wage activities that seem to be a “forced alternative” for job seekers as long as they cannot integrate into the modern sector of the economy. This situation might be a result of a mismatch between labor supply qualifications and labor demand needs, which is also alarming for long-term growth. In fact, skills represent an important prerequisite for any successful transformation of economic structure and reallocation of labor towards modern sectors of economy. However, this negative reallocation could just be the implications of a negative demand shock that Egyptian economy or in particular, manufacturing and services, witnessed during this period. Besides, some puzzling facts are worth mentioning regarding agriculture. This latter with the lowest productivity level did not contribute that much to overall productivity growth through increasing capital deepening of technology upgrading, in spite of the potential of huge catching up dynamic.

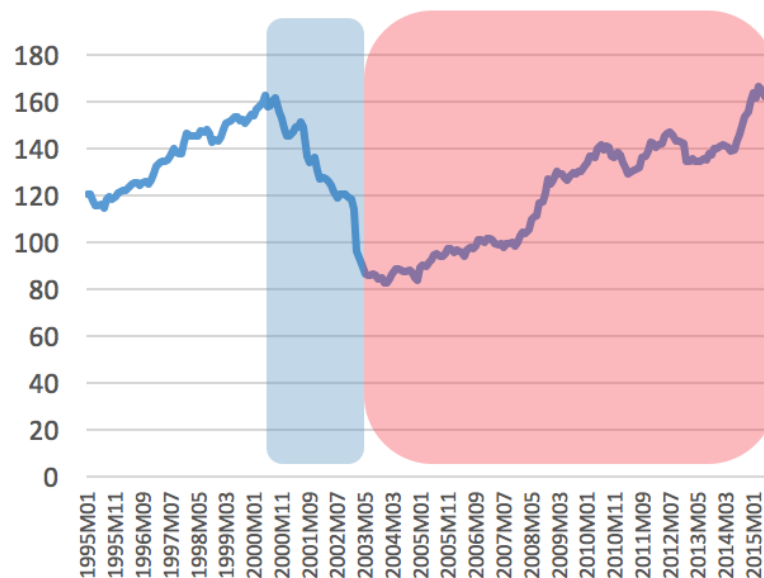
Figure 10: Total rents and credit to the private sector to GDP in %



Source: WDI

Rodrick and Macmillan (2011) have documented this kind of economic transformation that seems not to be going in the right direction. These authors argue that resource driven economies where the extractive sector is a major exporter of the economy, might witness some negative structural transformation. Natural resources curse, which leads to over-dependency on primary commodities, may result in an inefficient resource allocation in the economy. In fact, a revealed comparative advantage in that sector generally leads to a concentration of labor in the mining sector (the easy way), at the expense of sectors with a higher potential for economies in the long run, such as manufacturing or services. Morsy, Levy and Sanchez (2014) found, using the share of commodities in exports, that the extent of structural change is negatively associated with a higher share of commodities in a country’s exports, suggesting that a specialization in commodities is likely to jeopardize the process of structural change. In addition, they also highlighted the role of the efficiency of the banking sector in the promotion of structural change in Egypt. Through a cross-sectional econometric analysis, they found that the low growth of credit in the private sector is one explanation of the lagging structural change in the country compared to some emerging economies.

Figure 11: Real effective exchange rate, change in %



Source: Brugel Real Effective exchange rate database.

Moreover, the exchange rate policy conducted by the central bank⁵ might be the factor to point out in this growth-reducing structural change. In fact, the period where the economy witnessed a positive structural change, the currency experienced a huge depreciation compared to its main economic partners. However, since 2003 the Egyptian currency appreciated steadily in parallel with this negative between effects. Overvaluation tends to put pressure on tradable industries further damaging especially the light-manufacturing sector that operates at tight profit margins and enhances imports of manufactured goods. In addition, liberalization of the economy combined with the appreciation of the currency could be a factor to blame for the case of Egypt. Egypt has gone under a structural reform of its trade regime aiming to open its economy to foreign competitors and benefit from increasing demand coming from abroad. Said and Elshennawy (2015) have demonstrated however that trade liberalization between 1996 and 2005 didn't damage the manufacturing sector, but quite the reverse, manufacturing kept employing people. However, data show that in 2002 manufacturing employment declined in relative terms but also in absolute value. It shrunk in 2002 and 2003 by 2.1% and 4.5%, along with the appreciation and increase in imports ratio. Overall, further studies need to be launched to analyze deeper and understand growth-reducing structural change during that period and assess which factors would shape the most, for the case of Egypt, structural transformation and enhance growth and economic prosperity.

Like Morocco but at a lower extent, the contribution of manufacturing to wealth creation has been decreasing from 17.5% in 2000 to around 16.4% in 2013, while employment has experienced the same pattern with a sensitive decline of almost 3 percentage points to 10.7%. Accordingly, within productivity saw one of the largest increase in the Egyptian economy. Its contribution to total within productivity growth amounted 30% of total within effect estimated at 1.2% per average, while in the service sector it is 60%. In terms of productivity gap, unlike Morocco, productivity was above average levels and it exceeded services in general.

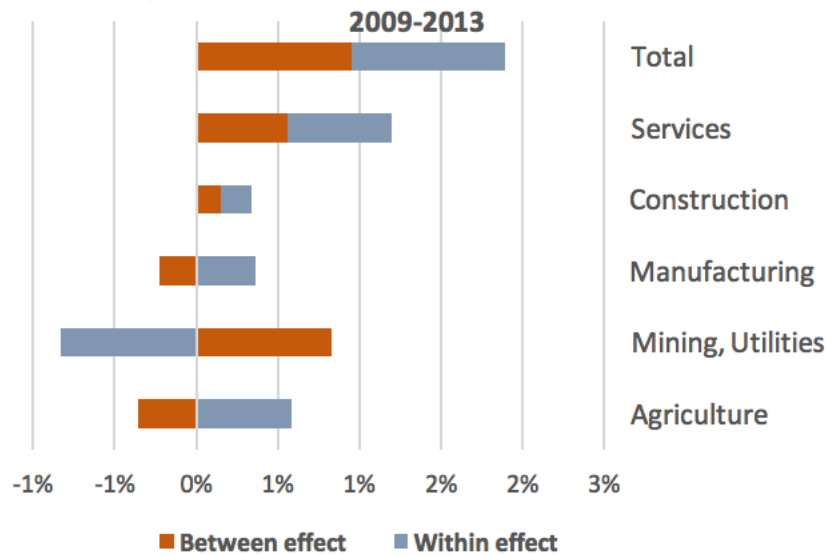
El-Haddad (2013) extended the employment movement analysis to the manufacturing sector. He explained that the structural movement of employment contributed positively to productivity growth which might explain the importance of the within component we generated through aggregate measurement. The decomposition of productivity growth for the 10 most performers in manufacturing during 2004-2006 showed clearly that new sectors have emerged with an above average productivity level and were able to attract more employees. He explained also that classic manufacturing sectors like petroleum refineries, other nonmetallic mineral products, mostly capital intensive, have reached a potential ceiling where absorbing labor supply is not any longer an option.

Any impact of the crisis on the productivity pattern?

At a first glance, structural change analysis before and after 2009 revealed some interesting facts for the case of Egypt. If reallocation effect estimations revealed that for the period 1999-2009, labor has been heading towards less productive sectors, especially since 2002, the results are entirely the opposite applying the same approach for 2009-2013. In fact, labor was moving mainly from agriculture and manufacturing towards mining and utilities, services and at lesser extent construction. Productivity gains inside each sector were also important for sectors that lagged behind, e.g. agriculture and services. Overall, productivity growth in that period was shared equally from within productivity growth and reallocation effect.

⁵ An increase means appreciation, while a decrease means depreciation.

Figure 12: Between and within effect, by sector



Sources: ILO and the UN, National Accounts Main Aggregates Database and authors' calculation

Agriculture and services have thus been witnessing the optimal pattern as economic theory and development path experiences suggest. Productivity is increasing in that sector first probably due to modernization and capital deepening that pushed at the same time employees far from this sector towards the rest of the economy. Services, hopefully in highly productive sectors, are attracting more and more labor and increasing capital use and technology inside the economy. Regarding manufacturing, the same panorama can be drawn for Egypt as in Morocco. Not only did the employment share in manufacturing maintain its declining trend as a sign of premature deindustrialization, but also the number of employees in manufacturing declined by 3,2% between 2009 and 2013. It could be that substitution effects between capital and labor inside manufacturing kept productivity and production generally increasing.

What is amazing in this case is the behavior of mining and utilities for the case of Egypt. In fact, its employment share has increased during this period. In a counterfactual scenario where mining and utilities did not attract more labor, total between effects would be around zero. Unless there was a natural resources discovery in Egypt during that period which is unlikely because of the drop in total value added, this reallocation effect might have altered the competitiveness of the sector that is known for its low labor elasticity and its higher capital-deepening ratio. It also could be possible that the mining sector and utilities could be considered as a way-out option for the public authorities (only possible if mining companies are owned by the public sector) in a time of crisis. In the case of Egypt, the Arab spring is also a factor not to neglect during our analysis that might have pushed towards this employment strategy. Another explanation of the behavior of mining lies in the relation between growth and unemployment. Above we have explained that the Egyptian had witnessed an increase dependency over rents since 2002, which might have relatively increased the labor demand by the sector. This labor demand could have lagged behind and didn't take place until recently.

II-2 Export performance: new measure of quality and variety indexes.

In this section, we propose a new measures of export performance, related to horizontal and vertical dimensions. The measure of export variety is derived from a CES utility function by Feenstra (1994) and has been widely employed recently.⁶ This measure enables both a comparison in terms of changes in product variety over time for two countries and at a same time point.

$$Variety_t^c \equiv = \frac{\sum_{i \in I_t^c} p_i^a q_i^a}{\sum_{i \in I^a} p_i^a q_i^a}$$

⁶ For example, Hummels and Klenow (2005), Broda and Weinstein (2006), Feenstra and Kee (2007, 2008), etc.

This is interpreted as the share of total U.S. imports (country a) from products that are exported by country c. p is the price and q is the quantity of imports.

For the quality index, we constructed a new measure of quality upgrading. The challenge is related to the unobserved component of quality. Economists have always considered prices as a viable proxy for quality. While it is very practical to proceed that way, it however makes strong assumptions about the cost structure around the world indicating that any price differences is driven by quality and not cost (Khandelwal, 2010). Derived from a nested logit demand system that allows correlations among consumer preferences (Berry, 1994), the procedure utilizes both unit value and quantity information to infer quality such as: imports with higher market shares are assigned higher quality, conditional on price. The regression equation is:

$$quality = \ln(s_{cht}) - \ln(s_{0t}) - \alpha p_{cht} - \sigma \ln(ns_{cht}) - \gamma \ln pop_{ct}$$

Where s_{0t} is the market share for outside variety (here taken as the domestic variety), which is set by 1 minus the industry's import penetration. s_{cht} is the overall market share of product h imported from country c .⁷ ns_{cht} is its market share within product h (the nest share) and pop_{ct} is the population of the exporter country and P_{cht} is the price of product h imported from country c .

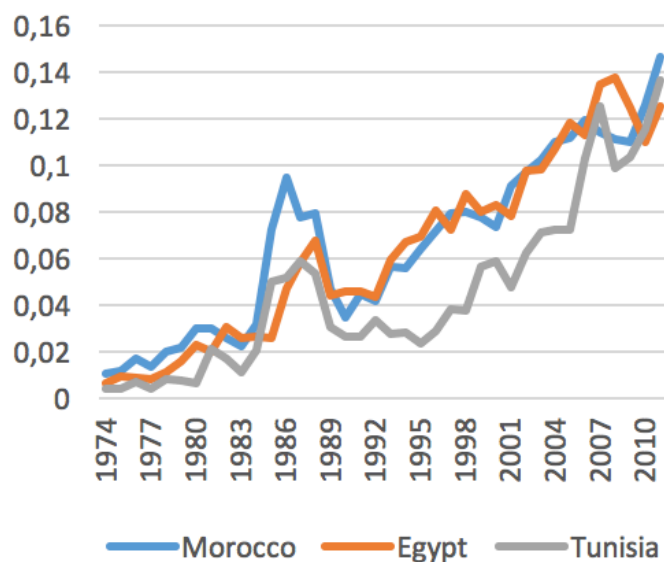
The idea behind the regression is that once you have controlled for the economic and population size, and mainly the prices, the gap reflects quality. A variety's quality will rise if its price can rise without losing market share.

The main dataset used in the two indexes is the product-level U.S imports from 1972-2012. In particular, U.S. imports are classified under the 7-digit Tariff Schedule of the U.S. Annotated classification (TSUSA) for 1972-1988, while after 1989 imports are classified under the 10-digit Harmonized System (HS).

II-2-1 Variety index

The result for the pooled manufacturing industries from 1972 to 2012 is presented in Figure 15. We also broke down the aggregate manufacturing exports of each country to the US into nine major industries based on the 2-digit Standard Industrial Classification (SIC) (1987 version) and constructed the export variety indexes accordingly.

Figure 15: Variety Index for Pooled Manufacturing industries

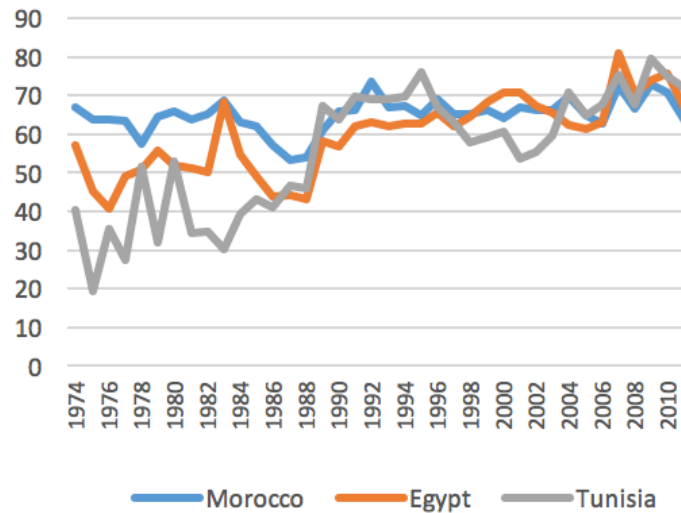


Source: Authors' calculations based on the US merchandise imports

⁷ For further technical discussion, see Khandelwal (2010) "The Long and Short (of) Quality Ladders" NBER.

As illustrated by Figure 15, overall, countries relatively expanded their export varieties in the manufacturing sector over time.⁸ There is no distinct difference in export variety for Morocco, Tunisia and Egypt over time. In particular, not a single country took a dominant role during 1970s and 1980s. Starting from 1990, a slight divergence began to emerge between Morocco and Egypt on one hand and Tunisia on the other hand. By 2011, Morocco achieved to cover 14.67 percent of export varieties relative to the U.S. in the manufacturing sector. While, Tunisia boosted itself to the second position in terms of export variety to the U.S. with 13.68 percent, followed by Egypt with 12.5 percent.

Figure 16: Quality Index for Pooled Manufacturing industries



Source: Authors' calculations based on the US merchandise imports

In the food sector, Morocco and Egypt have followed a broadly similar trend since the 70s. In Morocco, the export variety index went from 3% to almost 12 percent in 2011. Egypt went from nearly 0 percent in the early 1970s to cover 10 percent of export varieties by 2011. As showing in Figure 21⁹, Tunisia was lagging behind since 1990, but in recent years, the variety of its exports improved significantly, reaching the level of Morocco and Egypt. Having a relative comparative advantage in the textile, leather and apparel sector, the three countries similarly increased their share of export varieties to the U.S. in this sector. By 2011, Egypt manage to cover 42.7 percent of export varieties, while Morocco and Tunisia share first place exporting 48 percent of varieties to the U.S. in the textile sector (Figure 22). Figure 23 show that after a rather stable trend for the three countries for the period 1974 to 1998, it was Egypt that records the highest variety rate, covering 4 percent of export varieties to the U.S. in chemicals sector by 2011. Figure 24 shows a clear gap between Morocco and the two other countries since the early 90s regarding electronics. In fact, Morocco reached 21 percent of export varieties to the U.S. sector by 2011.

II-2-2 Quality index

The figure above illustrates how quality indexes of manufacturing products evolved in Morocco, Egypt and Tunisia. It worth mentioning that quality indexes have been computed over the period 1974 to 2011 with regard to exports to the US market. So, for countries like Morocco, that have witnessed an expansion of their automobile sector's exports since 2013, the index is not expected to capture this change. In addition, for these countries, the European market has been the main destination of their exports. Therefore, the interpretation should be treated with care, as it does not really reflect the structure of total exports. Overall, as shown by the figure, aggregated manufacturing exports of the three countries are relatively of the same quality during the estimation period and they did not show any specific behavior in the 2000s. By sectors, results seem to be more heterogeneous. In fact, for the textile, leather and apparel sector that

⁸ There is a discrete fall in 1989, which is due to the change of product classification from 7-digit TSUSA to 10-digit HS system.

⁹ See figures 21, 22, 23 and 24 in appendix.

ranks number 1 for Egypt and Tunisia and number 3 at the top exporter sectors for Morocco, quality improved for the Tunisia economy and slightly deteriorated for the Moroccan textile products, while for Egypt it has kept relatively the same quality level between 2000 and 2011. For the tobacco and food business, no significant changes occurred in the last decade with a quality that seems superior for the Tunisia and Moroccan products compared to the Egyptian ones. Regarding the chemical products, Morocco and Egypt are outperforming the Tunisian economy, but with no significant changes during the 2000 decade.

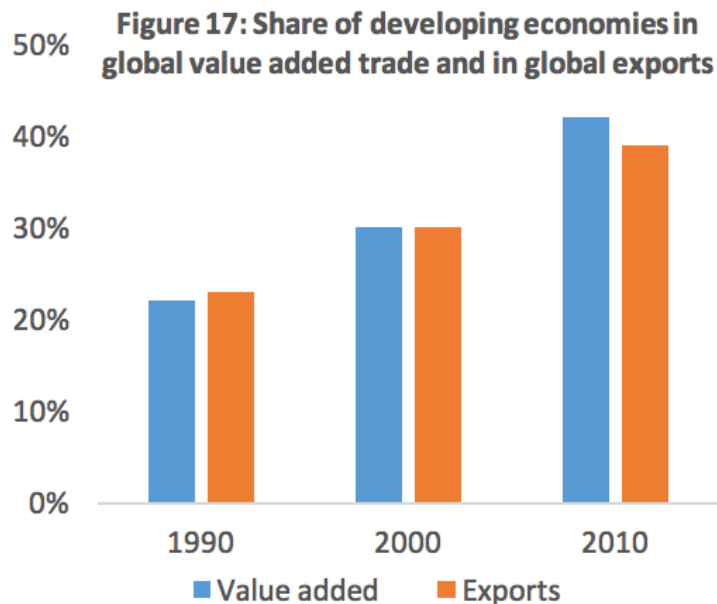
III- Industrialization and integration in the global value chains: opportunities for North Africa

The deindustrialization process in the case of Morocco, Egypt and at lesser extent Tunisia could be overcome through increased integration in global value chains (GVC). GVC offer opportunities to smaller economies like these to specialize in production segments in which they have a comparative advantage without developing the domestic platform to perform all steps of complex manufactured products. Opportunities for countries to generate a manufacturing value added are more possible than ever through joining an international production network. In fact, International firms seeking competitiveness have completely changed the landscape of the International trade in the last decades through an increased fragmentation of production systems. The technological progress and a sharp decline in trade barriers and transport costs have made it possible and pushed towards setting new ways of production all over the world. One indicative feature is the rising flow of trade in intermediates that increasingly constitutes one of the major components of trade.

This section aims to establish the facts related to the degree of integration of these countries into GVCs, explain the opportunities launched by this form of specialization to enhance their structural change, and identify the threats and risks associated to GVCs and implications on their economic development process.

III-1 How much is the domestic value added (DVA) in total trade of these countries?

Developing economies have leveraged the benefits of the increasing flow of trade these last decades. In fact, they were able to capture an increasing share of trade value added by upgrading their production systems and establishing integrated networks domestically. While these countries still do not capture the major part of trade value added, the marginal rise of trade flow is beneficial to these countries and developing economies increasingly produce the needs of the developed world. In fact, domestic value added has increased from 22% in 1990 to 42% in 2010, while the total contribution of developing economies in the total trade did not increase proportionally, standing at 39% in 2010 compared to 23% in 1990. Regarding our sample countries, the domestic trade value added has slightly increased compared to the total domestic value added in the world. It has almost doubled from 1990 to 2012, reaching 0.4%. While it is still very small compared to the global economy, given their economic size this increase would yield in major economic performance.



Source: UNCTAD-EORA GVC database (2014) based on UNCTAD. 2013. "Global Value Chains: Investment and Trade for Development." World Investment Report

In terms of captured value added to gross exports, the three countries have experienced a slight decrease in their domestic value added in the last two decades, especially since 2000. It is estimated at 71% in Tunisia, 80% in Morocco and 84% in Egypt. This feature should not be considered as a negative evolution but rather as integration into GVCs and optimization of the production system. Nowadays, competitiveness requires the optimal production system, which goes hand in hand with specialization through an international division of labor. An economy like Korea with a GDP per capita over 21,000 USD, PPP is capturing only 58% of exports.

Figure 18: Participation in GVC and domestic trade value

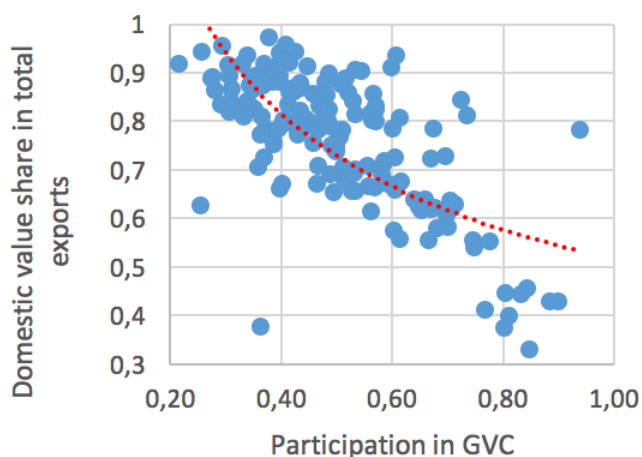
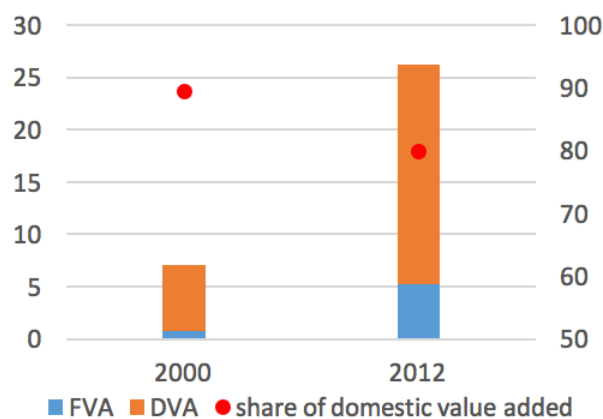


Figure 19: Exports goods and services of Morocco in billions of dollars



Source: UNCTAD-EORA GVC database (2014)

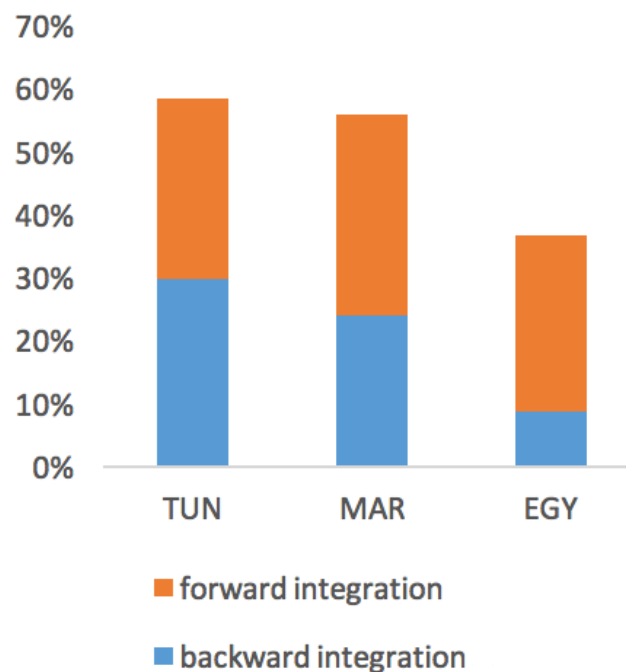
The figures above clearly confirm this fact and suggest that participation in the GVC¹⁰ comes at the expense of domestic added value. Countries that were able to capture a higher share of trade value added are less integrated in the GVC. There are two separate cases of relatively unintegrated economies. The first case is whether the economy is

¹⁰ This indicator will be explained later.

relatively closed, that exchanging mainly final goods, and the second case is whether they, mainly developed economies, have reached a level of maturity in which they are able to develop a domestic network through increasing attractiveness to foreign investments. Similarly, economies that tend to resist this changing landscape of trade and production networks are not admitting that increasing domestic value added requires importing foreign value added, and are therefore doomed to failure.

Measuring the share of domestic value added is the wrong way to assess integration in the GVC and its implication on economic growth, at least at the beginning of the process of integration. It is understood that countries that rely less on foreign value added (FVA) in exports – would see their economic activity increasingly grow, but this holds true only once a development level has been reached. Small countries like in North Africa are constrained to letting part of the value added produced abroad to sustain their growth model and insure their competitiveness. For the case of Morocco, in 2000 the share of domestic value added was about 90%, and 12 years later it decreased to 80%. What is interesting in this case is the value of domestic value added in dollars that tripled during the same period. It is difficult to assume that the Moroccan economy could be able to increase the domestic value added exported relying only on domestic capacities without integrating the international production network system. Thus, keeping in mind only the share as the most relevant indicator of domestic implication on growth and development might be misleading especially in the first stages of integration.

Figure 20: GVC participation, in 2011



Source: UNCTAD-EORA GVC database (2014)

III-2 Participation in the GVCs?

In order to understand the degree of participation in the GVC, an indicator has been constructed to quantify the extent to which each country is integrated in the GVC. This indicator shows the portion of a country's exports that is part of a multi-stage trade process, by adding to the foreign value added used in a country's own exports (the upstream perspective) also the value added supplied to other countries' exports (the downstream perspective) (UNCTAD, 2014). As explained, they are different forms of participation, either at the first stages of production generally commodity exporters or economies that process crude materials and thus are located at the final stage of production. Regarding our sample, it is clear that the upstream component is relatively prevailing, meaning that these countries operate more at the beginning of the value chains, maybe as providers of commodities and raw materials. Egypt seems to be less integrated than Morocco and Tunisia in the GVC, a difference mainly induced by the upstream component. Compared to 1995, it is clear that these countries, especially Morocco and Tunisia, are increasing their reliance on GVC as a trade

locomotive, while Egypt is more focused on the upstream component as a driver of GVC integration. The rise of the flow of the intermediate goods of these countries is focused more on Europe as the destination and provider of intermediate goods. The historic trade relations between these regions, the increasing trade agreements, and the flow of FDI entering these economies represented most GVC participation and was achieved along with European partners and companies (ADB, 2014).

These figures related to 2011 do not show the increased reliance of these economies on GVC as a trade driver for North Africa. Morocco's automobile sector has been considered as one the successful stories in the region, with double-digit annual growth rates for FDI and exports. In 2014, automobile exports represented over 20% of total Moroccan exports. The opening of the Renault-Nissan industrial complex in Tangiers in 2012, which has an annual production capacity over 300,000 vehicles, the major part of which is for export, to Europe and North Africa. Certainly, domestic value added generated by this sector is still not important and does not meet expectations, but as a strategy that keeps in mind the long run effect of technology transfers and quality upgrading, domestic implications on income and employment should be significant.

III-3 After entering GVCs: what is the next step?

The location of each economy in the GVC (downstream or upstream perspective) can be misleading for policy makers who intend to assess the economic performance of a country. Economies might be requested at the beginning of a production chain as a commodity provider, which tends to be not highly desirable for an economy that strives to process its natural resources and generate more domestic value added. Furthermore, developed economies might be involved in the GVC at the first stages of the process as leaders in research and development or design, activities that create more value added. Accordingly, economies could be also located downstream doing the assembly for example in the car industry, which is low in domestic value added.

Entering the GVC itself could be considered as a success especially if it is not related only to the comparative advantages in a commodity. However, the challenge for each economy is the capacity to upgrade and climb GVC ladders from low value added to high value added activities. As explained above, countries that integrate GVC should be able to admit domestic value added losses especially in the beginning of the process. Mastering low value added activities is a prerequisite to target upgrading and climbing the GVC. The technological transfer and the accumulation of new capabilities could trigger the "climbing process" if the right industrial policy is implemented. Escaping the "low value added trap" requires combining several success factors, related mainly to the supply of skilled labor able to leverage the challenge and migrate the economy towards highly value added activities. The logistics and infrastructure framework are relevant ingredients of success in order to keep the economy competitive and highly driven by international movements.

The right dose of trade openness is a factor to also consider while implementing the adequate industrial policy for a country striving to sustain its competitiveness. Nowadays, it is not admissible that countries put some strong trade barriers on imports and the idea that importing comes at the expense of employment and output does not hold anymore. We addressed this issue above, explaining that in order to increase local production we need to increasingly rely on imports. Competitiveness requires more specialization and a rising division of labor. Nevertheless, over-reliance on imports can systematically damage the local production system and compromise any attempts to move the economy away from low value added activities. Some developing countries have seen their structural transformation being jeopardized due to increased imports. This refers in fact to the exchange rate policy adopted by the monetary authorities. We have seen for the case of Egypt that the appreciation of the currency might have altered the structural transformation of the economy and led to the issue of the growth-reducing structural change (Rodrick and Macmillan, 2011).

GVC participation should be able to benefit the whole economy and not only the operational sectors of firms. Increasing linkage between these sectors and the rest of the economy is a relevant task that policy makers should keep in mind. Tunisia is considered as a concrete example of this lack of linkage. While exports of electrical machinery, business services and tourism are performing and well connected to international markets, implications over the rest of the economy are not meeting expectations. These activities operate in isolation from the local economy, because of the dualism in regulations between the offshore and onshore sectors, which significantly limits the potential for further upgrading (ADB, 2014).

Besides, GVC integration is not only about manufacturing. Services are representing a rising share in trade in manufactured goods. OECD confirms that over 30% of manufactured goods traded globally is created by services. The larger part of this supporting activity is related to transport and logistics, finance, and communications. These services are relevant to supporting manufacturing. Furthermore, services are being traded now and their production system is fragmented in different locations. Banking, education, health and communications services are all types of sectors that are traded more frequently but are less prone to research and interest from policy makers. Accordingly, insuring performance in the manufacturing sector and taking full advantage of GVC integration is not dissociated from upgrading the service sector, where value added is hidden inside manufactured goods.

Concluding Remarks and Directions for Future Research

The countries of North Africa have always considered the industrial policy an important means to upgrading their manufacturing sector and path to development. In an era of premature deindustrialization, the manufacturing sector is expected to offer job opportunities for the population and absorb unemployment in the region especially for young people. That is why, based on the recognized success of East Asian countries in terms of implementing the “*right*” industrial policy, these countries were very involved in implementing active policy interventions, aiming to promote some activities in the manufacturing sector, like electronics, transportation equipment, or textiles, expected to insure the economic convergence, welfare and prosperity for their population. These countries suffer from an over-reliance of their economy on the agriculture sector that still employs 40% of the employed population in Morocco, 28% in Egypt and 15% in Tunisia, which operate at very low productivity levels.

In relation to the objective of an industrial policy that aims to promote structural change and economic convergence, we thus analyze the pace of their structural transformation in the last decade using two approaches. We analyze labor reallocation between five sectors of the economy for the three countries and assess to what extent this movement contributes to the overall productivity growth. Achieving the reallocation of the labor factor from agriculture to highly productive sectors (at least sectors in which productivity is above agriculture) is expected to generate important outcomes, in terms of GDP growth and welfare.

First results show that for the case of Morocco and Tunisia, performances are comparable with a reallocation effect that was positive and contributed around 18% and 21% to overall productivity growth. Except that for Moroccan economy overall productivity increased by an average rate of 3.7%, while for Tunisian economy, productivity growth was 1.7% for the sample period. The service sector has been the main contributor to this shift by being the first employer with a productivity level above average. For manufacturing, not only its employment share is decreasing but for the case of Morocco, since 2008, employment is declining as perhaps a sign of deep changes occurring in the manufacturing sector that experienced a rise in the capital deepening ratio. Manufacturing in Tunisia however was able to keep its share in total GDP relatively constant. For Egypt, the period 1999-2008 experienced a negative contribution of the reallocation effect to overall productivity growth, meaning that the labor factor was moving from high productivity sectors to low productivity sectors. This growth-reducing structural change could be the result of a combination of many factors as studies suggested, such as the exchange rate appreciation, over-dependence on commodity exports and inefficiency in the banking sector.

The second approach applied in this study is related to the construction of new measures for exports performance, quality and variety dimensions. For the quality index, it seems that not much improvement has been noted in the 2000s for the three countries, even for industries targeted by the policy makers in each country. For the variety index, some facts are worth mentioning. In fact, the overall performance of the three countries has improved steadily in the last decade, but driven mainly by classic sectors such as textile or food and tobacco. While for electronics, a sector targeted by the public authorities, Morocco was able to diversify its supply to the US markets and outperformed Tunisia and Egypt.

Taking full advantage of the changing landscape of the production systems and networks may allow North African countries to accelerate their structural change and enhance their manufacturing sector. As shown, these countries are increasing their participation in the GVCs as a remedy to their deindustrialization. Specializing in niche manufacturing activities may allow them to promote manufacturing knowledge and capabilities without developing the domestic platform to perform all steps of complex manufactured products. The challenge for each economy in this case is the capacity to upgrade and climb GVC ladders from low value added to high value added activities. At a starting point, it could be enough for a country to integrate the GVC in low value added activities, which is apparently the case for these

countries, but beyond a certain level, these economies must aim to climb the GVCs ladders and move away from low value added activities. Describing the right ingredients for any industrial policy is, in my viewpoint, the best way to deceive, but economists agree on the importance of upgrading the logistics and infrastructure framework, which are relevant to keep the economy competitive and highly anchored to international markets. In addition, a success in climbing the GVC ladder is contingent on capacity to insure the supply of skilled labor to leverage the challenge and take off the economy to highly value added activities. Besides, it is important for the countries to tap the benefits of the GVC participation for the rest of the economy through building linkages between export oriented activities and non-tradable sectors.

Active interventions in selective sectors are not enough to build a strong manufacturing sector and a competitive economy. A “policy mix” between vertical and horizontal policies is to be kept in mind. Maintaining a sound macroeconomic framework is also crucial, especially regarding monetary policy decisions, exchange rate movements and the fiscal policy stance. Long-term strategies related to innovation, labor market, and trade policies are not to be neglected when implementing industrial policy. The case of Egypt is quite revealing in this case. Focusing on direct interventions and targeting a specific sector while not implementing the right short-term policies like monetary and fiscal policies could be threatening for the growth path of the economy and lead to mis-allocation of resources and all the efforts engaged by the policy makers can go up in smoke.

Further studies need however to be launched to better understand the functioning of the North African economies, the underlying dynamics and the divergence compared to some success stories in the East Asia region. In addition, micro simulation should be run to conduct some impact analysis of different incentives provided by the governments for the targeted sectors.

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Appendix

Figure 21 : Variety Index for Food and Tobacco Industry

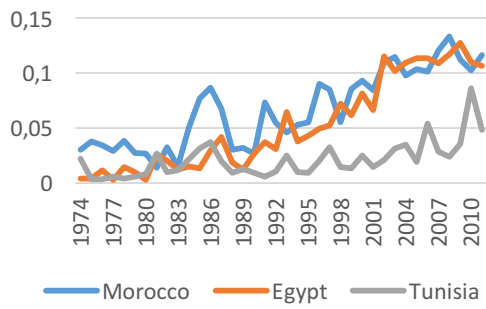


Figure 22: Variety Index for Textile, Apparel and Leather Industry

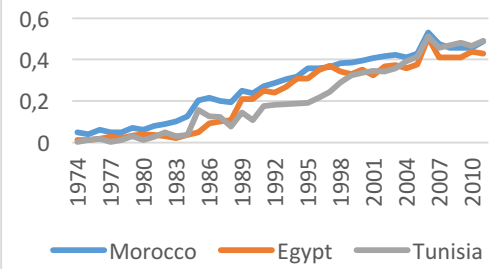


Figure 23: Variety Index for Chemicals Industry

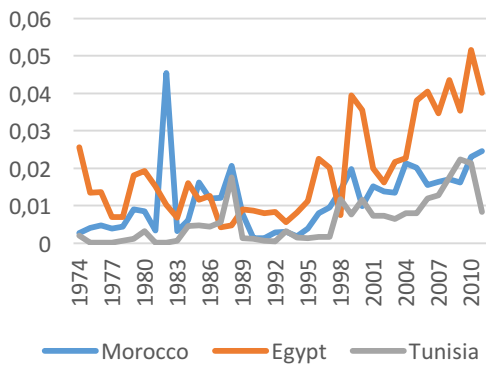
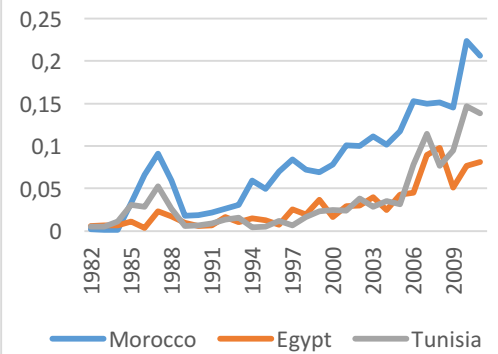
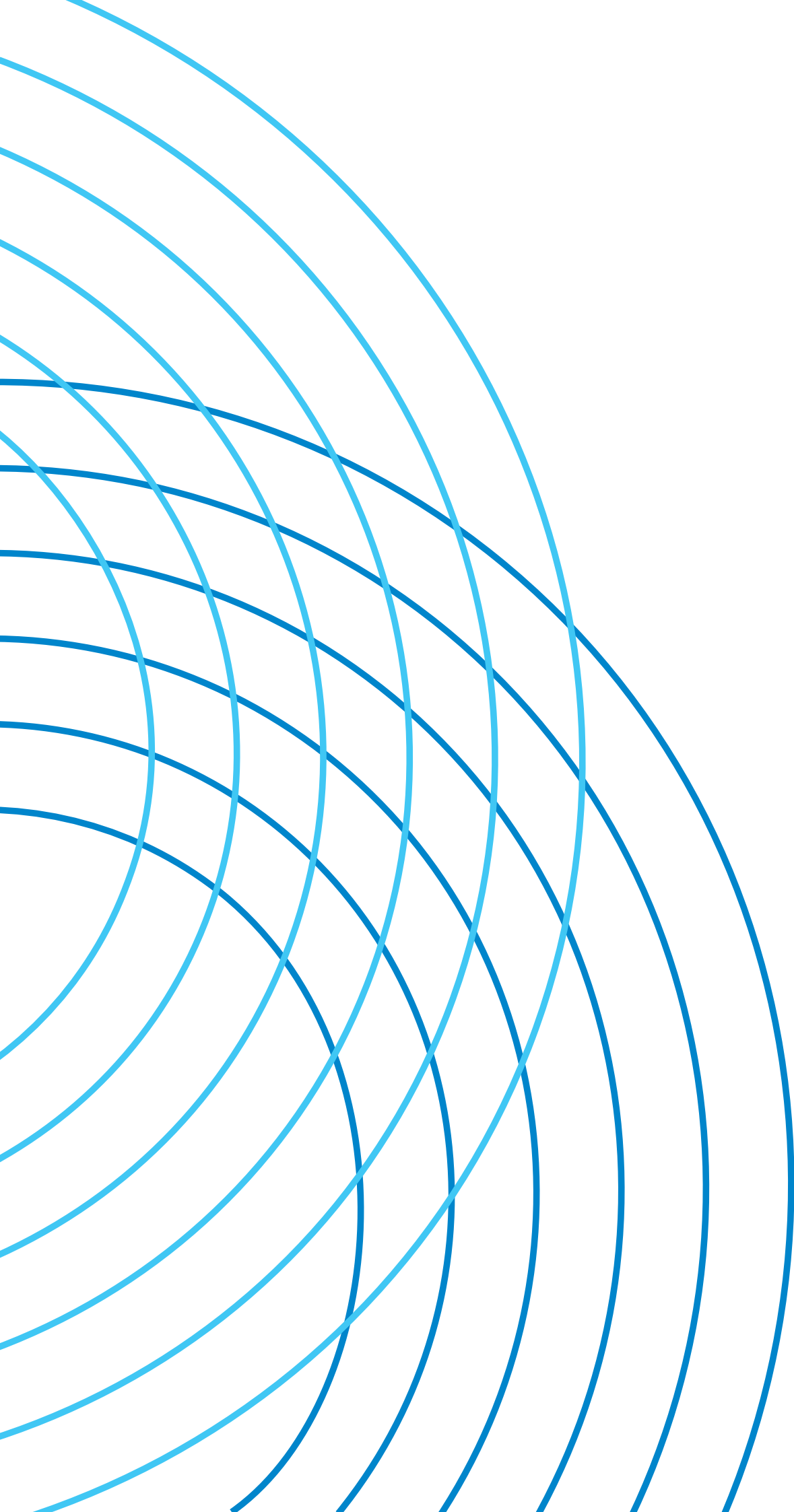
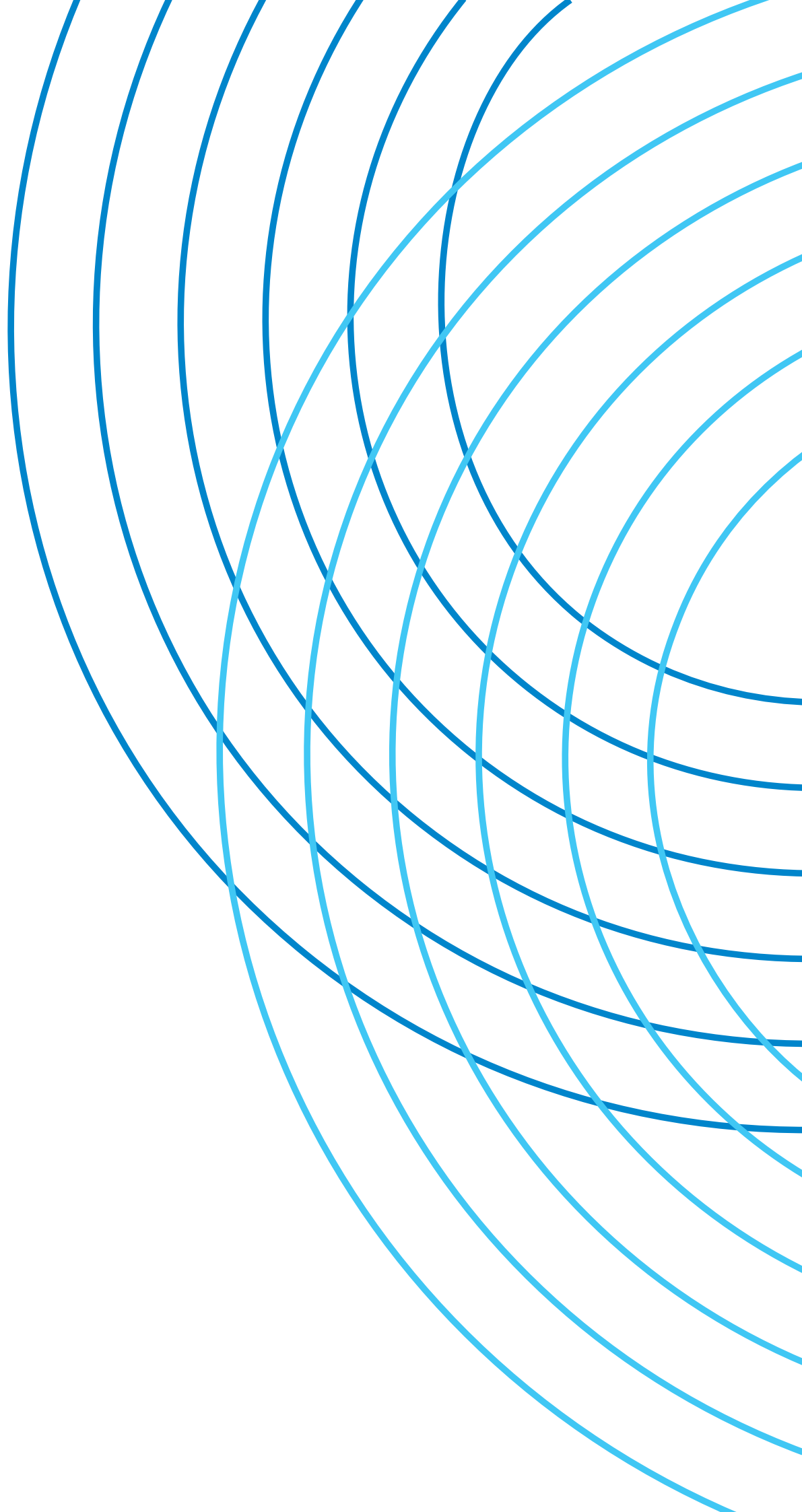


Figure 24: Variety Index for Electronic Industry









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ISSN N° 2421-9479

Dépôt légal N° 2015PE0055