United Nations
Economic Commission for Africa
Office for North Africa

ECA POLICY BRIEF

Misallocation of resources, structural transformation and productivity growth in North Africa

Summary

North African economies are characterized by slow economic diversification and persistent unemployment, especially among educated youth. Labour productivity has registered only a moderate increase compared with more dynamic emerging countries like India or Turkey. These patterns share a common origin, which lies in the existence of many distortions in the economy that prevent an efficient allocation of resources between firms and sectors. These distortions are caused by market and institutional failures. Inefficient institutions can be at the origin of potentially severe distortions. Reforms designed to tackle these distortions could generate substantial productivity gains and promote structural transformation in North Africa.[1]

Introduction

Economic growth theories emphasize that technical progress and physical and human capital accumulation are all key drivers of gross domestic product (GDP) growth. However, at earlier stages of development, growth is concentrated in a limited number of low productivity sectors, with limited technological improvement. Growth then occurs mainly through the emergence of new and more productive activities. This process, called structural transformation, involves the reallocation of resources from old to new activities and from less to more productive sectors. This is an old idea in development economics, going back at least to Arthur Lewis, who drew attention to large productivity gaps between economic sectors in developing countries (rural and urban sectors, for example) and indicated that the reallocation of labour from traditional to modern activities would lead to substantial productivity increases.

Productivity growth can be decomposed into two components: within and between sectors. The former is the productivity growth from productivity improvements within sectors. The latter is what is called structural transformation. From available data on labour and value added for the period 1994–2013, both slow labour productivity growth and little structural transformation can be observed in North Africa (see table 1), compared with other emerging countries. Over the same period, labour productivity increased by 4.16 per cent, with structural transformation accounting only for 11.2 per cent. This can be contrasted with the performance of Turkey, for example, with a labour productivity of 7.7 per cent and a structural transformation component accounting for 44 per cent. Table 1 includes Sweden, with a small and negative structural transformation component over this period. This is a general feature of developed countries, with growth mainly driven by productivity gains within sectors. Indeed, productivity gaps between sectors in developing countries are much lower than in emerging and poor

1 For further reading, see *Quality of Institutions and Structural Transformation in North Africa*, 2019 Economic Commission for Africa report.

countries, leading to a weak contribution of structural transformation.

Another fact about North Africa is the persistence of a high unemployment rate, reaching 11.5 per cent in 2018. One salient feature is the high unemployment rates among youth (29.5 per cent in 2017). Moreover, among youth, the educated are those most affected by unemployment. In Egypt, for instance, in 2015, the unemployment rate for youth with a basic education was 14.9 per cent and for youth with an advanced education, the unemployment rate was 56.7 per cent (International Labour Organization (ILO) statistics database). Similar patterns hold in Algeria and Tunisia. Finally, labour force participation is remarkably low (41.3 per cent in 2017, compared with 59.3 per cent on the whole African continent).

Table 1: Labour productivity growth decomposition in North Africa

	Panel A: All Sectors				*Panel B: Excluding Mining Sector*		
	(1) GDP/capita Growth	(2) Productivity Growth	(3) Within Growth	(4) Between Growth	(5) Productivity Growth	(6) Within Growth	(7) Between Growth
Algeria	1.75%	-1.24%	1.08%	-2.32%	3.4%	3.18%	0.22%
Egypt	2.49%	6.23%	11.08%	-4.84%	6.93%	6.78%	0.14%
Libya	-2.37%	-9.05%	-12.45%	3.39%	-3.1%	-2.85%	0.24%
Morocco	3.08%	5.4%	5.39%	0.03%	5.7%	4.4%	1.32%
Tunisia	2.87%	5.4%	5.69%	-0.24%	7.8%	7.19%	0.65%
NA Countries*	1.9%	1.35%	2.16%	-0.8%	4.16%	3.74%	0.42%
Turkey	2.97%	7.9%	7.3%	0.6%	7.7%	4.3%	3.4%
India	5.2%	16.8%	15.6%	1.2%	16.8%	13.7%	3.1%
Sweden	2.06%	6.55%	7.99%	-1.44%	5.89%	6.19%	-0.29%

Source: GDP/capital: World Bank. Employment: ILO. Period 1994 – 2013.

Low productivity growth and structural transformation combined with persistent high unemployment, especially among educated youth, might have a common origin in the misallocation of resources. Misallocation has recently been documented in academic literature as an important source of low productivity growth in developing countries. By preventing resources from being efficiently allocated to most productive firms and activities, misallocation pushes overall productivity downwards. The seminal work of Hsieh and Klenow (2009)[2] estimated that the elimination of distortions could lead to productivity increases of 30 to 50 per cent in China and 40 to 60 per cent in India. By preventing an efficient reallocation of resources from lower to higher productivity activities and firms, misallocation hinders structural transformation. To better understand the effect of misallocation on both structural transformation and job creation, the sources of misallocation must first be considered.

Sources of misallocation: the role of institutions

Misallocation is the result of distortions in the economy, which have their roots in three sources: (a) Market imperfections; (b) Statutory provisions, including features in the tax code and regulations; and (c) Discretionary provisions made by a Government or other entity (such as a bank) that are referred to as "crony capitalism".

Correcting market imperfections is a prominent role of the State, but State intervention in the economy may itself be a source of distortions in the economy. Following in particular the impact of the two world wars, the Great Depression (with the emergence of Keynesian theory) evolved to include macroeconomic stabilization and the welfare state. With the failure of the so-called "Washington consensus" to promote economic development in poor countries and the advent of the "East Asian Miracle", the "developmental state" emerged, leading to a rapid extension of the domains of State intervention. Active development policies to foster economic development have since spread widely. State interventions range from social or welfare policies, such as poverty alleviation policies, to economic development policies, such as active industrial policy. Active industrial policy is an example that highlights the complex nature of State intervention and its potential distorting effects on the economy. Although industrial policy may be justified by economic theory, because of market failures, for instance, the targeting of specific sectors, activities or even firms may contribute to resource misallocation in the presence of inefficient institutions. For example, when institutions can be captured by private sector interests, there is no guarantee that the sectors or firms receiving preferential treatment by the State are the most productive ones. Moreover, in this context, politically connected firms can have powerful means to influence policies and regulations in their own interests.

2 Hsieh, Chang-Tai and Peter J. Klenow, "Misallocation and Manufacturing Total Factor Productivity (TFP) in China and India". *Quarterly Journal of Economics*, November 2009, vol. 124, issue 4, pp. 1,403–1,448.

State intervention is thus critical to understanding distortions and the deviation of the economy from an efficient allocation of resources. The following two broad categories of how Governments can contribute to the misallocation of resources can be distinguished:

a. A lack of intervention or insufficient intervention by the State, which does not intervene enough to correct market failures;

b. Inadequate or "wrong" policies that may not address a problem in the right way, either voluntarily or involuntarily, which may itself create distortions. This can occur when designing or implementing a policy.

c. In both cases, inadequate actions by the State can be explained by:

d. Policy design reasons, such as firms with political power influencing regulation in their favour;

e. The nature of the instruments used: for example, differentiated taxation and subsidies to some firms can distort a level playing field; and

f. Policy implementation reasons, such as bureaucrats using discretionary power to discriminate between firms and favour some firms over others.

Distortions created by institutions can have huge impacts on all sources of growth, capital, labour and technology, at the macro and micro level. Capital market distortions have been identified by a broad range of academic literature as being a main reason for slow development and sectoral adjustment in developing countries. One central capital market distortion is simply the lack of availability of credit for some firms or the lack of access to private equity markets. Yet, capital market distortions may also be due to (a perceived) insecurity of property rights.

Many studies show that productivity losses due to capital market distortions can be significant.[3]

In addition to preventing incumbent firms from obtaining their desired level of capital, financial constraints have a substantial impact on firm entry and the adoption of new technologies.[4] This is particularly critical in resolving the issue of unemployment, as small high potential growth firms not only drive job creation but are also the ones most affected by financial constraints.

The Global Competitiveness Report 2017-18 of the World Economic Forum shows that access to finance is one of the most problematic factors for doing business in North African countries, as reported by executives. Similarly, in the World Bank Group's Enterprise Surveys, North African firms report that they are severely constrained by access to finance. The results of the Surveys show that firms in Egypt, Morocco and Tunisia – 28.5 per cent, 27.7 per cent and 24 per cent respectively – state that finance is a major or severe constraint. By way of comparison, in other countries such as China, India or Turkey, 15 per cent or less of firms report that they perceive finance as a major or severe constraint.

Consequently, domestic credit to the private sector is relatively weak in some countries. For example, in 2017, credit to the private sector represented only 24.4 per cent of GDP in Algeria, and 28.5 per cent in Egypt, compared with 66,5 per cent in Turkey and 155 per cent in China.

Distortions also impact the efficient allocation of labour and human capital in the economy. Labour markets can be subject to distortions that are due to labour regulations and other public policies, like public employment for example. Many studies have provided empirical evidence that developing countries with rigid employment laws tend to have higher unemployment rates, and especially higher youth unemployment rates.[5]

Stringent labour regulations distort the allocation of jobs and thus have an important adverse impact on productivity levels and growth. Moreover, they can discourage firms from providing formal employment

3 For example, Tasso Adamopoulos, Loren Brandt, Jessica Leight and Diego Restuccia, "Misallocation, Selection and Productivity: A Quantitative Analysis with Panel Data from China". January 2017, Revised November 2017. Working Paper 23039. See https://doi.org/10.3386/w23039.

4 See, for example, Virgiliu Midrigan and Daniel Yu Xu, "Finance and Misallocation: Evidence from Plant-Level Data", February 2014, American Economic Review, vol.104, No. 2, pp. 422-458.

5 For such a survey see Simeon Djankov and Rita Ramalho, "Employment laws in developing countries", *Journal of Comparative Economics*, 2009, vol. 37, issue 1, pp. 3-13.

and push them to hire employees informally with negative consequences for the quality of the jobs created, the social benefits provided, the effective use of skills and job sustainability.

Distortions in the labour market also derive from public employment, which can contribute to labour misallocation within the economy. In North Africa, the public sector, the largest employer, offers a wage premium and stability over time that attracts highly qualified and skilled employees. Consequently, employment in the public sector affects the ability of the private sector to attract and retain highly qualified and skilled employees. Moreover, public sector wage premiums can have a strong negative impact on both skill accumulation and development, the allocation of skills and labour force participation. The fundamental concern is that wages in these distorted markets fail to provide signals about relative scarcity or abundance of certain skills or capabilities.

Inefficient institutions may also have adverse effects on technical progress. For example, regulations that restrict entry and limit competition may have very detrimental impacts on technical progress and productivity. First, they may favour less productive incumbent firms and discourage the entry of talented entrepreneurs who can bring new technologies to the market. Second, they reduce innovation as non-contestability of markets limits incentive to innovate. Third, they may even distort the structure of economic activities towards those more prone to rent seeking.

There are many sources of distortions, particularly capital and labour market distortions. However, there are other potential sources such as political instability or expropriation and predation. Politically connected firms can derive large gains from their connections and potentially have a huge impact on the allocation of resources.[6] Large benefits to political connections imply that unconnected firms cannot compete nor even enter the market, which obstructs innovation, dynamism and, ultimately, even the ability of these economies to export. In Tunisia, for example, data for the period 1994-2010 show that firms owned by the Ben Ali family outperform their competitors in terms of employment, output, market share and profits, as well as employment and profit growth, especially in regulated sectors. The sectors in which these politically connected firms are active are disproportionately subject to authorization requirements and foreign direct investment restrictions.[7]

One potential important distortion comes from the insufficient capacity of the State to support the private sector through a well-functioning transparent and fair bureaucracy, which harms productivity growth and structural transformation. Corruption can substantially undermine State capacity and create distortions in various ways. For example, with arbitrary power, bureaucrats can discriminate between firms in the implementation of policies and regulations. In public procurement, corruption can lead to an inefficient allocation of public funds.

Institutions can thus create an environment where firms face a lot of distortions that lead to reduced returns on investment, with a potential impact on long-term growth. To understand this, the impact of distortions that weaken the private sector and limit entry of new firms on investment in education will be examined. The combination of a weak private sector and insufficient opportunities for educated workers leads to a vicious circle: (a) Educated young people remain either unemployed or occupying jobs that prevent them from making use of and developing their skills, (b) Incumbent firms do not benefit fully from the human capital in the economy, (c) Returns to education in the private sector are weakened; and (d) Investment in education is biased towards formal education needed in the public sector.

Inefficient institutions, by creating or maintaining various distortions, have a detrimental impact on all sources of growth and structural transformation.

6 See, for example, Raymond Fisman, "Estimating the Value of Political Connections", *The American Economic Review*, 2001, vol. 91 No. 4, pp.1,095–1,102; Chekir Hamouda and Ishac Diwan, "Crony Capitalism in Egypt", *Journal of Globalization and Development*, 2014, vol. 5, issue 2, pp. 177-211; and Mirko Draca, Jason Garred, Leanne Stickland and Nele Warrinnier, "On Target? The Incidence of Sanctions Across Listed Firms in Iran", July 2017.

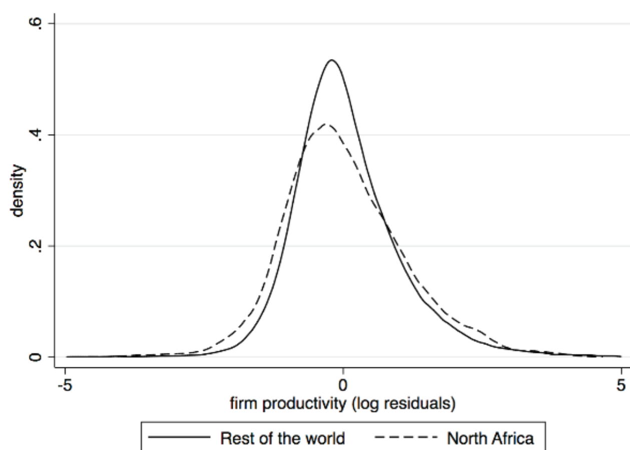
7 Bob Rijkers, Caroline Freund and Antonio Nucifora, "The Perils of Industrial Policy: Evidence from Tunisia". See http://siteresources.worldbank.org/FINANCIALSECTOR/Resources/PerilsofIndustrialPolicy_Tunisia.pdf.

Empirical evidence on the magnitude of distortions in North Africa

Academic literature has shown that firm level productivity dispersion in the economy is a good measure of the magnitude of distortions. This requires access to firm level data, which are not systematically available for North African countries for large samples of firms. We can however gain some insights from the World Bank Enterprise Surveys. Table 2 plots the full distribution of the estimated log-transformed total factor productivity of firms across the North African countries for which data are available (Egypt, Morocco, the Sudan and Tunisia).

Countries in North Africa tend to have a high dispersion of productivity compared with the rest of the world, indicating a potentially high magnitude of distortions in the economy (see figure below).

Dispersion of estimated productivities across firms



Source: Calculations from World Bank Enterprise Surveys

Quality of institutions in North Africa

There exist many indices that reflect the quality of institutions in diverse dimensions. The *Doing Business* reports of the World Bank contain one of the most used indices to assess the quality of institutions with respect to the business environment they create. In *Doing Business 2018*, Egypt ranked 128th, Mauritania 150th, Algeria 166th, the Sudan 170th and Libya 185th. Morocco and Tunisia performed better, ranking 69th and 88th, respectively. A lot remains to be improved in the business environment to create a level playing field for investment.

Table 2 below presents rankings of North Africa countries on a subset of quality of institution indices. The figures suggest that institutions in North Africa are of relatively poor quality.

Key Recommendations

North African countries suffer from many distortions, either induced by markets or institutions. It is of primary importance to address some critical aspects of the poor quality of institutions that are key to tackling distortions. Emphasis should be placed on core reforms that will reduce distortions related to: (a) Design and implementation of public policies; (b) Efficiency of public spending; (c) Competition policy; and (d) State capacity. The spirit of these reforms should be to make public policies and their implementation less susceptible to creating a discriminatory environment for firms and investors, on the one hand, and to strengthen the ability of the State to deliver policies and public services

Table 2: Some indicators of the quality of institutions

	Corruption Perception Index (2018), rank over 180	World Bank Governance Indicators (2017), maximum score = 100	International Crisis Group Indicators; Bureaucratic quality 2015; maximum score = 4	International Crisis Group Indicators; Government accountability 2015; Maximum score = 6	World Economic Forum – Institutions, 2018; rank over 140	Mo Ibrahim Foundation Governance index 2018, maximum = 100	Economic Freedom of World index 2018, rank over 186
Algeria	105	21	2	3.5	120	50	171
Egypt	105	23	2	2	102	50	144
Libya	170	3	1.5	2		28	
Mauritania	144	42			133	43	119
Morocco	73	25	2	4.5	54	58	75
Sudan	172	5	1	2		31	166
Tunisia	73	44	2	4.5	75	64	125

more efficiently and be more supportive of private sector growth, on the other. The following key recommendations are therefore proposed.

Increase transparency in public decision-making and in the implementation of public policies

Transparency is critical to alleviate information asymmetry issues and build credibility in policymaking and implementation. It is important to reduce discretionary power at all levels of public decision, and transparency is a critical prerequisite. This could be achieved through a systematic publication of information related to public policies (including objectives, costs, expected impacts and targets). On the implementation side, information could be published related to policies (including budgets, locations, targets and criteria). Moreover, a list of all privileges received by any firm could be made available in an open access database.

Build an inclusive governance for public policy design

Transparency goes hand in hand with inclusion. Inclusion allows all interests to be considered and all available information used, in particular private information. Inclusiveness means that policies should be designed in a participatory way with all stakeholders. A period of open discussion with civil society for the design of policies could be systematized.

Strengthen executive constraints

Excessive control of the policymaking processes within the Executive leads to: (a) Political uncertainties; (b) Policy uncertainties; and (c); Biased policies toward private interests. This is especially true if there is a lack of transparency. The strengthening of executive constraints is of primary importance in order to address the institutional sources of distortions.

Digitalization of the administration for a more transparent and less discriminatory business environment

Differences in administration decisions can be due to heterogeneity of competencies of bureaucrats, inequality of resources between local administrations or other factors. Using new information and communications technologies may be a good way to tackle these issues.

Reduce conflicts of interests in public procurement

Corruption in public procurement is an important issue and an important source of distortions. Policies to build a transparent and accountable procurement process are critical.

Increase State capacity

State capacity is critical for the ability of States to design and implement appropriate policies. Civil service reform is an important issue. Significant dimensions of such reforms include strengthening a merit-based recruitment process free of political influence, improving recruitment standards, increasing transparency in the recruitment processes and making promotion more based on performance.

Strengthen competition

A lack of competition is highly detrimental to growth and the efficient allocation of resources. Competition policy should be reinforced to make markets contestable and fight anti-competitive practices. The regulation of entry is often a means used by incumbent firms with political power to protect their position, or by bureaucrats to extract rents. Eliminating barriers to entry is very important for North African economies.

This policy paper was prepared by Zoubir Benhamouche under the supervision of Khaled Hussein, Officer in charge. ECA Sub-regional Office for North Africa.

Contact

Khaled Hussein
Officer in charge
Economic Commission for Africa (ECA)
ECA Subregional Office for North Africa
Secteur 3 - A5, Rue Attine, Hay Ryad, Rabat
P.O.Box 2062, Rabat Ryad, Morocco
Telephone : +212 (0)37 54 87 40/ (0)37 54 87 12
Email : husein44@un.org
www.uneca.org/sro-na

Ordering information

To order copies of ***Misallocation of resources, structural transformation and productivity growth in North Africa*** Policy brief by the Office for North Africa of the Economic Commission for Africa;

Please contact

Publications, Economic Commission for Africa,
P.O. Box 3001, Addis Ababa, Ethiopia,
E-mail: ecainfo@uneca.org
Web: www.uneca.org

Printed in Addis Ababa, Ethiopia by the ECA Printing and Publishing Unit. ISO 14001:2015 certified.
Printed on Chlorine Free Paper