

What can Algeria learn from global experiences of economic transformation

ماذا يمكن للجزائر أن تتعلم من التجارب العالمية للتحويل الاقتصادي

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الملخص : مرت الجزائر بتحولين اقتصاديين، الأول من الاقتصاد الكولوني المعتمد على الزراعة البدائية، الى الاقتصاد المخطط القائم على الصناعات الثقيلة، ثم من الاقتصاد المخطط إلى اقتصاد السوق، و قد فشل كلا التحولين في بناء اقتصاد مستقل عن الريع، بل أصبحت توازناته و اختلالاته رهينة اسعار النفط الدولية، و عليه تحاول هذه الدراسة في اطار العدد الخاص من المجلة، تبيان التجارب العالمية في التحول الاقتصادي من اجل اعداد خطة ناجحة تمكن الجزائر من بناء اقتصاد متنوع قائم على انتاجية العمل من الدرجة الاولى، إذ خلصت الدراسة أن فلسفة التحول الاقتصادي قائمة على الرفع من انتاجية العمل، بما يتبعها من عملية التحول القطاعي، اما ميدانيا فأشارت التجارب العالمية أن التحول الاقتصادي الناجح يقوم على استخدام التكنولوجيا المحسنة لنمو الانتاجية، تراكم الراس المال السريع، التشابك الاقتصادي بين مختلف القطاعات، فضلا عن تعاون بين الاسواق و المؤسسات و الحكومة. فيما اختتمت الدراسة بمجموعة من التوصيات و الإجراءات اللازمة للتحول الاقتصادي الناجح، اهمها: الرفع من مردودية التربية و التعليم، دعم التصنيع، تشجيع القطاع الخاص، تحديث القطاع الزراعي، تنويع الاقتصاد

الكلمات المفتاحية : التحول الاقتصادي، الاقتصاد الجزائري، التعديل الهيكلي، الاصلاحات الاقتصادية

Abstract: Algeria has experienced two major economic transformations. The first one was from a colonial economy based on agriculture to a planned economy emphasis on heavy manufacturing. The second when Algeria adopted a market economy. However, both of the transformations have failed to create an independent economy on hydrocarbons. Thus far, the impact of oil price shock on economic growth. As a result, the purpose of this paper is to investigate the key lessons on global experience of economic transformation. The results indicate that the philosophy of ET is improving labour from low to higher productive activities; this includes between sectors to higher value activities. In practice; technology-led productivity growth, rapid capital accumulation, the role of linkage, the role of market, institutions and government in transformation, are the four source of ET. Finely, this paper concludes with recommendations to the success economic transformation, which are; education, manufacturing, encouraging private sector, modernized the agricultural sector, the diversification of the economy

Keywords: Economic transformation (ET), Algerian economy, structural transformation (ST), economic reforms

I. Introduction:

Over the past fifty years, Algeria has experienced two major economic transformations. The first one was in the 1960's to 70s, when Algeria shifted from a colonial economy based on agriculture to a planned economy emphasis on heavy manufacturing dominated by large state owned enterprises. The second was in the late 1980s to 90s, when Algeria adopted a market economy, and later under the aegis of the World Bank and the IMF. Consequently, it led to severe economic pain, like high unemployment and hyperinflation.

However, in the past few years, foreign exchange reserve boom boosted the Algerian economy, due to soaring oil prices. As a result, the Algerian economy depends primarily upon revenues from oil sector. It is necessary for Algeria to undergo another economic transformation, especially when the oil prices have been declined again. Moreover, the globalisation of economic development and rapid development of information technology all add impetus to Algeria's economic transformation.

Therefore, this study attempts to extend the literature of economic transformation by considering the following research question: what is economic transformation? Where is the region going, i.e., what the main lessons could summarize from the transformed economies?

Nevertheless, our objective in writing this introductory article has been to place the various contributions to this special issue in the context of economic transformation strategic plan for Algeria 'version 2040'.

This study is organized in seven sections. The introduction is followed by six. Section 2 presents a brief review of the concept of economic transformation. Section 3 will give an overview on pace of structural transformation in Algeria. However, section 4 analysis the issue of weaknesses in the production system. Thus, section 5 deals with poor labour productivity. Section 6 draws some lessons and highlights the contrast between successful and failed transformation. Finally, discussion and implications presented in the concluding section.

II. What is economic transformation?

Economic transformation involves moving labour from low to higher productive activities, this includes between sectors to higher value activities (for example, from agriculture to manufacturing) and within sectors (for example, from subsistence farming to high-value crops). It is widely accepted that poverty reduction and economic growth cannot be sustained without economic transformation and productivity change¹.

By doing so, there are often five key components: reallocation of factors of production; diversification, upgrading, and deepening of the production and export baskets; use of new production methods and processes and different inputs; urbanization; and social changes²;

- Reallocation of the factors of production across sectors of different productivity. Historically, as income per capita increase, the reallocation involved, (1) a decline in the share of agriculture (where productivity is in general lower than in industry and services, (2) an increase in the share of industry up to a point (the industrialization phase) followed by a decline (the deindustrialization phase), and (3) an increase in the share of services.
- Diversification, upgrading, and deepening of the production and export baskets. Diversification of the economic structure is probably the most conspicuous feature of economic development, and is a chief difference between it and aggregate economic growth. Upgrading refers to the capacity to produce higher quality, more distinctive, and

¹Dirk. W.T Velede, (2013), Economic transformation: where are we heading, post-2015?, the overseas development institute (ODI), London, UK, p1.

² ADB, (2013), Asia's Economic Transformation: Where to, How, and How fast?, Asian Development Bank, Manila, Philippines, p 3-5.

more complex products. Deepening involves the formation of local linkage and complementarities by creating a robust local supplier base and expanding ancillary services.

- *Use of new production methods and processes and different inputs.* Examples are steam and railroads during the first industrial revolution (1750-1830) and electricity and chemicals during the second (1870-1900). The impacts of modern information and communication technology (ICT) as a potential third industrial revolution are still in the formative stages.
- *Urbanization, a key feature of modern development.* Nearly all countries become at least 50 per cent urbanized before they reach middle-income status, and the urbanization rate of the high-income countries is 70-80 per cent.
- *Social changes.* Changes such as in family structure and in the role of women occur. It is impossible to become a modern economy with social structures that do not favour change.

However, on the macroeconomic side, the literature indicates that a variety of factors affect the direction and pace of ST of an economy. First, ST is driven by demand and supply factors. On the demand side are effects related to increase, the relative demand for food and agricultural products decreases, while that for more income-elastic goods and services increases.

On the supply side, differences in the capital stock per worker and in education and skills drive productivity differentials across sectors. Productivity is lowest in agriculture at low income levels, but this differential closes as workers shift to higher productivity sectors. Second, demographic and geographic variables (such as population density and resource endowments) and country size shape the pattern of ET across countries. Third, good organization capabilities allow faster ET, but lack of essential capabilities leads to stagnation. Capabilities encompass all the tacit knowledge necessary to produce a good or deliver a service. Fourth, specific policies and actions (e.g, those that pertain to education and the technological learning needed to compete internationally); institution (that have developed historically and facilitate or retard ET); and politics often work jointly to determine the direction and pace of ET¹.

III. The variable pace of structural transformation in Algeria:

The arrival of modern development and the consequent ST was a slow process in the economies that are currently termed ‘developed’ a process that lasted until well into the 20th century. In 1700, agriculture was the largest employer across the world. In 1700 in the United Kingdom, 60% of all employment was in agriculture. With the Industrial Revolution, the share decline to 40% in 1820 and to 16% in 1890. And it took another 90 years to shrink to 2.5%. Agriculture played a fundamental role in propelling the take-off, as agriculture development freed resources for the birth of new industries and services and lowered production costs outside agriculture. Agricultural development bred the skills and social capital necessary for the nonfarm economy to develop and influenced the socio-political tissue of societies². Today, in most developed

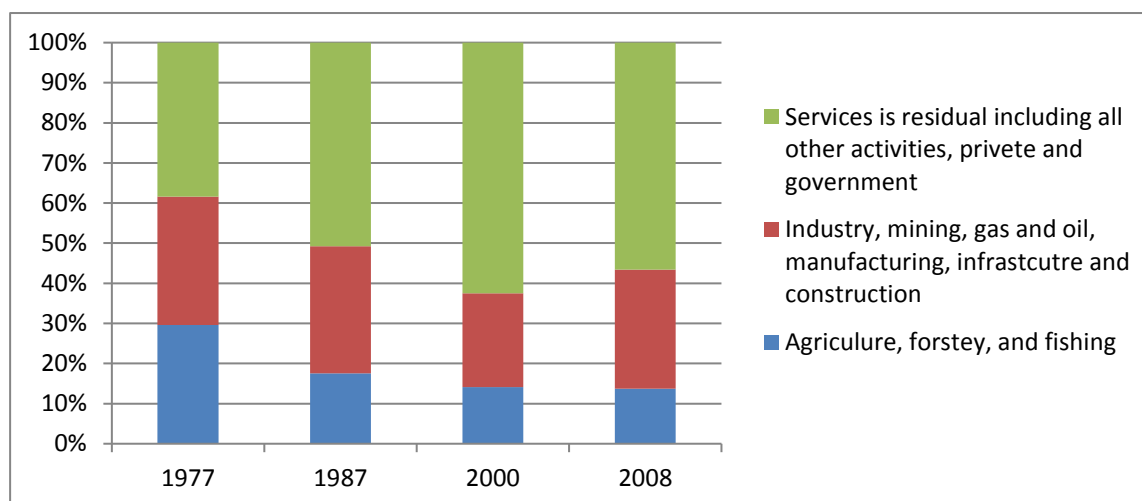
¹ Ibid, p 5.

² Mark Wuyts, Blandina Kilama, (2014), economic transformation in Tanzania: vicious or virtuous circle?, economic and social research foundation, Da es Salaam, Ethiopia, p 1.

countries, the share of agriculture in gross domestic product (GDP) and in employment are below 5%.

Similarly, Algerian economy changed gradual in sector shares, it shifted from agriculture sector in the 1960's by more than 40% to less than 30% at mid-70 towards industry sector. Moreover, this changing continues till 13% last decade. In the contrast, the Algerian economy is characterised recently by high employment absorbed by the strong service sector. Its share rose from less than 40% mid-70 to 50% during 80s, to more than 60% at the end of 2000s (figure 1).

Figure 1: Change in sector employment shares in Algeria:



Source: Authors' elaboration based on 'Retrospective 1963-2011', office national des statistiques, Algeria.

IV. Weaknesses in the production system:

Successful transformation ensures that economic growth forms part of a virtuous circle of cumulative that accentuates productivity and income convergences between these elements. Whether or not growth goes hand in hand with economic transformation, therefore, does not only depend on the rate of growth, but also on the pattern of growth.

Growth, therefore, is a necessary condition for successful transformation. The reverse, however, is not true: economic growth in itself does not necessarily engender successful transformation. Indeed, as Timmer and Akkus argued: 'a country might experience rapid growth, but fail to have an equally rapid structured transformation, in which case both the pattern and the commensurate transformation fail to hold. The lesson is that growth is a necessary but not sufficient condition for effective economic transformation.

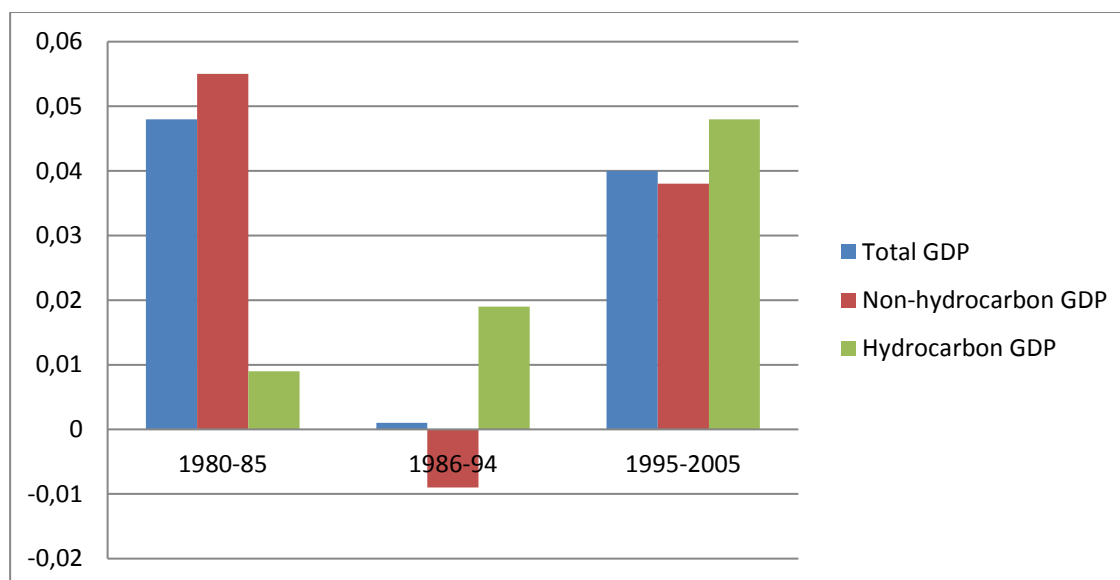
Algeria's growth performance over the past decade has been encouraging. Looking ahead, a key challenge is to place the non-hydrocarbon sector on the path of sustained higher economic growth, so as to boost overall growth prospects further and reduce unemployment.

The non-hydrocarbon sector accounts for two-thirds of GDP and 98% of jobs, but represents only a negligible share of exports. Real non-hydrocarbon GDP growth has increased significantly since 2001, with an annual growth rate of about 5.5% on average over 2002-05. However, this performance has been relatively modest compared to the recent growth of non-

hydrocarbon real GDP achieved by most other MENA oil production and competitor countries, which suggests that there may be scope for achieving higher growth in Algeria.

Although, growth performance in the non-hydrocarbon sector can be divided into three distinct sub-period during 1980-2005 as follow;

Figure 2: Growth Performance in Algeria 1980-2005:



Source: B. Loka, K. Kpodar, (2006), Algeria, selected issues, International monetary fund (IMF), Washington D.C, United States, p 6.

- **Output expansion:** from 1980-85, the non-hydrocarbon sector grew rapidly by 5.1% per year on average, reflecting relative domestic political stability, high oil prices, and rapid growth in public expenditure.
- **Output collapse:** the growth trend was reversed during 1986-94, resulting mainly from the decline in world hydrocarbon prices, slow and hesitant reforms, and civil violence. Non-hydrocarbon GDP (NHGDP) declined on average by about 1% per year between 1986 and 1994.
- **Growth revival:** by 1994, macroeconomic and financial imbalances were large and unsustainable. In response, the authorities, with support from the IMF and other partners, implemented important macroeconomic and structural reforms, resulting in a more outward oriented and liberalized economy. These reforms laid the groundwork for a growth recovery. Following the recent increase in Oil prices, the authorities launched in 2001 the Economic recovery Program and in 2004 the Growth Consolidating Program, which boosted growth again. From, 2002 onward, real NHGDP accelerated substantially to reach an average annual growth rate of about 5.5%. On the demand side, NHGDP growth was mainly domestic absorption-led, excluding oil and gas, exports were worth only 3% of GDP, partly because of the limited domestic supply of goods¹.

¹ AEO, (2016), African Economic outlook 2016, sustainable cities and structural transformation, 15th edition, OECD publishing, Paris, p 86.

The recent growth performance in the non-hydrocarbon sector can in part be attributed to the significant fiscal impulse generated by the implementation of the government's Economic Recovery Program and the Growth Consolidation Program, financed by higher hydrocarbon revenue. However, in the long run, the increase in world hydrocarbon prices may have adverse implications for the non-hydrocarbon sector¹.

Therefore, sustained higher real oil prices are expected to result in an appreciation of the real effective exchange rate with adverse implications for the non-hydrocarbon sector 'Dutch disease'. As a result, it is crucial to implement policies and productivity enhancing reforms that support sustainable growth of the non-hydrocarbon sector. Moreover, once hydrocarbon revenues start to decline, job creation and growth will depend on expansion and diversification of activities in the non-hydrocarbon sector.

V. Poor Labour Productivity:

Despite a significant increase in the labour productivity in Algeria since the 1960's, Algeria's labour market's outcomes still was very poor if was compared to other regions in the world such as East Asia. The real difference between the two regions, is that East Asia's labour force growth was accompanied by enormous increase in real output, which is not the case for Algeria. Real GDO growth in East Asia averaged 7.6% a year between 1970-80 more than doubled its labour force growth rate for the same period. As for Algeria, economic growth during the 1990;s has only averaged 1.9% inly half less than the growth of its labour force, implying a strong deterioration in productivity per potential labourer in the country².

Many reasons are behind the poor behind the poor labour market outcomes in Algeria, namely;

- Delays in completing the transition to a market economy.
- Relatively weak institution.
- The small size of the private sector.
- An unfavourable investment climate.
- Distortions in the labour market.
- A difficult political environment, market by continuing civil strife since 1992 and the ensuring loss (migration) of skilled workers and managers.

It must be highlighted, since the reduction in public expenditures allocated to education sector in the mulled of the 1980's, human capital losses in terms of its quality which adversely affected the competitiveness of the Algerian economy. Moreover, the waste of human capital is another source of inefficiency in Algeria. This waste was encouraged by the incentives offered by the public sector to the workers and the importance of rent seeking in this sector³.

Serious challenges are facing the Algeria's economy in order to turn the human capital as a growth factor and not as an impediment which reduces the efficiency of its productivity resources.

¹ Koranchelian. Taline, (2005), the equilibrium real exchange rate in a commodity exporting country : Algeria's experience IMF working paper 05/135, Washington DC. p 4-9.

² M.A. Chemingai, (2003), what macroeconomic factors explain Algeria's poor economic growth performance?, GDN working paper explaining growth in developing countries the case of Algeria, p 15.

³ B. Loka, K. Kpodar, ibid, p 6.

VI. Lessons from the global transformation:

Many development economists summarize the source of transformation into different groups, but these groups are often interlinked and sometimes hard to separate. Based on a review of the development economics literature of the past 40 to 50 years, we group the source of transformation into four different aspects and focus on different authors' views on the roles of these aspects in the transformation process¹.

- **Technology-led Productivity Growth:** productivity growth characterized the process of transformation and the move from a tradition to modern economy. Advancing innovation and technology adoption is therefore a 'permissive' source, i.e a necessary condition for development. Entrepreneurship and human capital plays an important role in this process. Technology-led, rapid productivity growth typically occurs during the industrialization process; hence, early development theorists discussed this process mostly in the context of industrialization. Less emphasis has been given to the transformation of agriculture through productivity growth during economic transformation.

The difference between a leading modern sector (often the industrial sector) with higher productivity and a lagging tradition sector (often the agricultural sector) with lower productivity, combined with an unlimited supply of labour from this traditional sector, allows production to grow in the economy through the migration of labour from the traditional sector to the modern sector. Led by productivity growth in the modern sector, the dual economies will eventually coverage to a mono economy with equalization in the economy-wide marginal productivity of labour and full employment.

Productivity-led agricultural transformation can make a much more important contribution to economy-wide transformation than merely providing surplus labour and savings to support industrialization.

- **Rapid capital Accumulation:** technology-led productivity growth is typically accompanied by rapid capital accumulation, as most technologies are embodied in modern capital goods. The deepening of the capital in the overall economy as well as in agriculture has been observed in all successfully transformed countries.

To finance these investments (and subsequent industrialization), early development economists paid special attention to increasing a country's saving rate.

The transfer from agriculture to industry often hurt growth in agriculture, particularly under the urban-biased growth strategies of the 1970s to 1990s.

The accumulation of capital is a necessary but not sufficient condition for transformation, especially in the case of agriculture. In this view, the profitability in the agriculture sector is low when agriculture employs only tradition factors. Low returns to agriculture investment explain the minimal saving behaviour of farmers and the low accumulation rate of traditional factors.

- **The role of linkage:** while productivity growth and capital accumulation are important elements of transformation, together with changes in consumer demand, they also further enhance economic inter-linkages during the transformation process.

¹ C. Breisinger, X. Diao, (2008), 'economic transformation in theory and practice, what are the messages for Africa?', International food policy research institute (IFPRI), Washington, DC, p 4-9.

Hirschman (1958) was among the first development theorists to emphasize that backward and forward linkages created by capital investments in the industrial sector. Johnston and Mellor (1961) thereafter extended this concept by going beyond industrial sectors. IN this view, agriculture should not be seen merely as a source of surplus to support industrialization, but as a dynamic source of growth, employment and more equal income distribution. Inter-sectorial relations between agriculture and non-agriculture will likely determine the course of transformation progresses; successful agriculture development is the short- and medium-run is a prerequisite for transformation. This dynamic role of agriculture is embodied in the process of transforming traditional agriculture into a modern sector, as this this process enhances both consumption and production linkages between agriculture and non-agriculture and rural and urban areas.

To the short, the existence of these linkages between a modern agriculture sector and the rest of the economy also poses several transformation challenges.

- **The role of Market, institutions and government in transformation:** institutional change in general and market development in particular are necessary parts of transformation.

The choice of technique or institution may affect both institutional change and market development, although in opposition directions. Most economists agree that the quality of institutions can explain differences in growth and transformation processes by sharing incentives to develop new technologies and innovation.

Technology-led productivity change involves the intensive use of modern inputs purchased from markets. The availability of seasonal financing, more developed marketing systems, and supply chains built around smallholder farmers becomes increasingly important in agriculture transformation, requiring simultaneous and complementary investments in all links of the supply chain. However, coordination, opportunism, rent-seeking costs, and risk can all complicate the effectiveness and efficiency of such simultaneous investments. The lack of market institution development and investment in infrastructure and information systems results in high transportation and transaction costs, forcing farmers to remain within a tradition, subsistence mode of production. Moreover, increased use of modern inputs and growing agricultural production can significantly increase the market and profitability risk of small farmers in the process of transformation, further lowering their incentive to adopt any new technology¹.

VII. Discussion and implications:

There is no one-size fits all package of policies that countries can readily implement to develop certain industries. Thus, we do not propose specific policy for Algeria's structural transformation. There are very general policy recommendations, such as maintaining a stable macroeconomic environment, investing in infrastructure and human capital, assuring good governance, facilitating free trade, and supporting a good business environment;

- **Education:** While education is indeed helpful for industrial upgrading, its value seems to derive mostly from the fact that a better educated workforce is more capable than an uneducated one of rapid transitions from one product into another.

¹ Acet, (2014), African transformation report, growth with depth, the African centre for economic transformation, Accra, Ghana, Washington, DC, p 10.

If faster transition across products are driven by better educated workers' higher capacity for rapid learning, then public-private partnership can play a very important role in skills' development.

- **Manufacturing:** historical analysis indicates that, with few exceptions, countries have been unable to achieve a high-income economy without having a significant manufacturing sector. In our view, to be a high-income economy requires attaining a manufacturing output and employment share of 18% or more for a sustained period. As a result of investing in high-quality education is essential to upgrade its manufacturing sector.
- **Encouraging private sector:** in many developing countries public sector action is required to remedy market failures such as insufficient provision of public goods (i.e. infrastructure and education). However, across the world, some of these interventions have succeeded, while others have failed.
- **Modernized the agricultural sector:** promoting agricultural productivity will be essential for this transition, and the transition will contribute to the improvement of labour productivity.
- **The diversification of the economy:** high natural resource prices can dampen incentives to diversify the manufacturing base. Thus, the diversification of the economy has to be a gradual, medium-term objective, as it will be difficult to become a high-income economy while depending almost exclusively on natural resources.

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