
Main drivers of economic growth: a sectoral approach to GDP growth in Egypt

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Abstract: The increasing attention of the Government of Egypt, since the 2011 revolution, to achieve sustainable and inclusive growth has given a renewed stimulus to research on economic growth from a sectoral perspective. In this paper, we investigate the main sectors that drive economic growth in Egypt in various time periods by adopting an econometric modelling strategy. In particular, we attempt to answer the following questions: what are the sectors that led economic growth in Egypt during the high-growth period? Were these sectors resilient to shocks? What are therefore the sectors of high priority that policy makers should direct efforts to in order to achieve sustainable inclusive high growth rates? The findings of the regression model reveal a significant role for both the manufacturing and the agriculture sector in promoting economic growth, with a 1% increase in the output of the manufacturing sector being capable of increasing GDP by 0.17%, while, the same increase in the output of the agriculture sector resulting in an increase in GDP by 0.15%.

Keywords: Egypt; economic growth; sectoral analysis; growth scenarios; econometric modelling; linear regression.

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1 Introduction

Economic growth is considered one of the main pillars required to achieve human development. It is a necessary condition to reduce poverty and increase the living standards of citizens in any country. Thus, high and sustainable economic growth is one of the most crucial targets of economic policy in any economy. Given the importance of economic growth, the literature is abundant on the drivers of growth and the strategies that have to be implemented to enhance it. However, the available literature focuses more on the macroeconomic determinants of growth like capital accumulation, labour productivity, financial development and other crucial variables, while only a few studies attempted to investigate the sources of growth by economic sector and the required sectoral growth rates to reach a target growth rate of the economy, especially in developing countries.

In this regard, it is crucial to note that the Egyptian Government has ambitious plans to promote economic growth and sustainable development. This is evident in the five-year national plan and the sustainable development strategy of 2030. This strategy aims at achieving sustainable and inclusive growth, enhancing the competitiveness of the Egyptian economy, providing job opportunities, and increasing per capita income to reach middle-income countries by 2030.

Hence, this paper attempts to investigate the main sectors that drive economic growth in Egypt by studying the contribution of different sectors to gross domestic product (GDP) growth rates in various time periods. In particular, it attempts to answer the following questions: what are the sectors that led economic growth in Egypt during the high growth periods? Did these sectors differ from one period to another? What are the sectors of high priority that policy makers should direct efforts to in order to achieve sustainable and high growth rates? In order to answer these questions, this paper relies on

descriptive analysis, in addition to econometric modelling to quantify the impact of different sectors on economic growth.

The paper is divided into four sections. Section 2 presents a review of literature highlighting the importance of economic growth on any policy agenda to achieve sustainable development. Section 3 provides some descriptive statistics for the contribution of economic sectors to GDP in Egypt, and the growth rates of these sectors along different time periods. Then Section 4 discusses the methodology utilised in the model and presents the results of the econometric analysis. Finally, Section 5 concludes with the main findings of the study along with policy implications.

2 Importance of targeting economic growth in a macroeconomic framework: a review of the literature

According to economic literature, both theoretical and applied, the most powerful tool to reduce poverty and improve people's standard of living is economic growth. However, the differing economic structures and policies of countries lead to different effects. The contribution of growth to poverty reduction thus depends largely on the degree to which the poor contribute to the process of growth and share its returns, in what is called 'inclusive growth'. For instance, an examination of the Asian countries, especially India, shows that the agenda in their development plan aims at high growth and containment at the same time (DFID, 2008). Consequently, the challenge for developing countries is how to integrate policies that aim at promoting growth with policies that allow the poor to participate fully in the opportunities created by growth, such as adopting policies that increase labour market efficiency and transparency, promote gender equality, and increase funding opportunities.

According to Roemer and Gugerty (1997), economic growth is positively reflected on all citizens of the country, even if not equally, thus contributing to poverty alleviation. Specifically, the trickle-down theory states that economic gains from growth will move to the poor through different channels such as creating new jobs and providing higher-quality services by the government (e.g., health, education, infrastructure, etc.), thus providing economic opportunities for the poor to improve their situation (Parel, 2014). This theory is based on the holistic demand mechanism inherent in the Keynesian theory, where growth generates new jobs, thus increases the demand for labour, which is the main and only asset for the poor.

From an empirical perspective, there are studies showing that globally, a 1% increase in growth has led to an increase in employment by 0.3% between 1999 and 2003, compared with 0.38% in the period 1995–1999 (Krongkaew et al., 2006; DFID, 2008). There is, therefore, a positive relationship between growth and employment opportunities, although the strength of the relationship is declining due to the evolution of the technology used, which requires further growth to accommodate the annual increases in the labour force. A study carried out on 14 countries in the 1990s showed a decline in poverty rates only in the 11 countries that had high growth rates during the study period (Vietnam, Tunisia, India, Uganda and Ghana as examples of the most successful countries), while poverty rates increased in the remaining three countries (Zambia, Indonesia and Romania), which had experienced a slowdown in economic growth rates (The World Bank, 2005).

Taking Vietnam as an example of the most successful country in this context, it was at the beginning of the 1990s one of the poorest countries in the world (per capita GDP was \$240), where poverty rates were close to 60% of the population. However, the policy package adopted in the 1990s by liberalisation of trade and the subsequent increase in exports of labour-intensive manufactured goods due to a mix of export stimulus policies with replacement of imports, economic reform policies and increased spending on education and infrastructure led to a growth rate of 5.7% annually. This reduced poverty rates by 7.8% annually (and 11% in urban areas) from 1993 to 2002, leading to the reduction of the poverty rate from 58% to 29%. This growth was accompanied by an increase in domestic demand for labour-intensive goods and services, particularly in rural areas whose incomes rose with land reform policies, farmers' incentive policies, and a competitive exchange rate (The World Bank, 2005). China is another example of a country that has made significant progress in reducing poverty level. It has managed to raise 250 million people above the poverty line since 1978, in the context of economic growth of over 9% during the 1980s and 1990s (Lin, 2003). As for Egypt, the percentage of Egyptians below the poverty line dropped from 35% in the low-growth period (2000–2004) to 24% in the high-growth period (2005–2010) (authors' calculations).

With regard to the role of sectoral growth, being the main focus of this paper, some studies analysed the impact of sectoral growth on poverty reduction in order to identify sectors that contribute more to poverty reduction. The results of those studies indicated that the largest contributions to poverty reduction have come from the labour-intensive sectors, particularly agriculture, construction and manufacturing. This means that while overall economic growth is an important factor in poverty reduction, the greatest positive outcome of growth on poverty depends on prioritising development policies so that they are directed more efficiently to that end. This requires a deep sectoral analysis of the sectors constituting output (Krongkaew et al., 2006; Loayza and Raddatz, 2010; Cervantes-Godoy and Dewbre, 2010). This study will address this point for the Egyptian context in Sections 2 and 3.

A second important impact of economic growth is that on human development indicators. Here we find two relevant channels; one related to the macro side of the economy, and the other is related to the micro one. Looking at the first channel, growth leads to an increase in the tax base, thus providing the financial resources that enable the government to increase spending on basic public services, like health and education (Wilhel and Fiestas, 2005).

As for the second micro channel, it is to achieve growth in the income of the poor, which will increase their ability to spend on education and health. A stark example here is that of Vietnam between 1993 and 1998. The high growth rate achieved in this period (approximately 6% annually) led to a significant increase in the incomes of individuals (7%), which led to an increase in the demand for education (the average number of years of schooling rose from 7.5 to 8.1 and the secondary enrolment rate increased by 8%). Regarding the impact of growth on different health aspects, there is a strong positive correlation between growth and mortality rates among children. In India, 10% growth has led to a 5%–7% reduction in child mortality.

In the same context, Amartia Sen, a Nobel Prize laureate, links economic growth to the expansion of freedoms enjoyed by individuals. In this regard, we find that the third crucial impact of growth is linked to fertility rates, which decrease with growth. This decrease in fertility rates results in significant social changes, such as enabling women to

work, children to get a better education, and the resultant increase in the middle-income voting class, which is a pressing force on the systems to adhere to the principles of governance. It is worth mentioning that this negative relationship between living standards and fertility rates is not a relationship between countries only, but it is a confirmed and established relationship within one state among its different regions. If we look at a country like India, Bihar, India's poorest city, has a high fertility rate of four, while a city like Kerala is as low as two (Nair, 2010). Moreover, the Egyptian case well emphasised this negative correlation, in which the fertility rate reached its lowest point (0.3) during the period of high economic growth (2005–2010).

From the above, it is clear how growth contributes to people's well-being. Now comes the question of how to achieve growth. There is no agreement on one set of policies that will always lead to higher levels of growth. However, there are some factors that must be met in order to support a successful growth strategy in developing countries. First of all, growth requires investment. The proportion of investment in GDP has a significant impact, not only on the level of productivity of the worker, but also on the level of growth in the long-term (Bond et al., 2004). Countries that have managed to achieve high and sustainable growth rates are those that have attracted large foreign and domestic investments as a proportion of GDP. This is because these investments usually include state-of-the-art technology. This investment, nevertheless, requires the provision of financial resources. Limited and high-cost financing is the biggest impediment to investment. There is therefore a need for an efficient financial sector to promote economic growth.

The investment decision is however closely related to the risks surrounding the investment environment. A stable macroeconomic environment is therefore an important factor in reducing the risks associated with investment. This environment should include an effective monetary policy that maintains low and stable inflation rates (Bassanini and Scarpetta, 2002) and ensures a competitive exchange rate regime (DFID, 2008). It also includes a fiscal policy that is effectively managed to ensure a sustainable deficit, thus helping to keep interest rates low and limiting government competition for private investment (BIS, 2010). Political instability, corruption and crime are factors that can threaten all potential returns and make investment unattractive and thus ruin growth prospects (DFID, 2008). Surveys of the business environment in low-income countries have shown that the biggest factor that negatively affects business profitability is 'contract activation' costs.

Good infrastructure in transport, communications, and public utilities are important factors that encourage investment and then growth. High levels of infrastructure spending in Vietnam, Indonesia and Bangladesh have contributed significantly to increasing growth rates, especially in rural areas, by improving market access and reducing transaction costs. Vietnam has also prioritised investment in infrastructure for areas with high poverty rates, as well as sectors with high growth potential. Investing in human capital (such as expenditure on education, training and health) has a more sustainable impact on the growth process as noted earlier (Bassanini and Scarpetta, 2002). Moreover, the existence of public institutions to guarantee property rights and reduce corruption are also very important. In Vietnam, for example, the activation of the land rights law has stimulated owners to invest in high-value crops that have contributed to economic growth.

Another very important factor is related to market competitiveness and openness. Regarding the former, governments must make sure that they do not interfere with open and fair competition, either deliberately (as a result of satisfying established or unintended stakeholders) as a result of institutional obstacles, such as expensive and time-consuming business processes, Private sources of funding). National governments must also ensure that companies can enter and exit markets relatively easily, which stimulates greater productivity and thus increased growth (DFID, 2008). As for the latter, no country could grow at large and sustainable rates without being integrated into world markets. Irrespective of the benefits of exploiting comparative advantages, international trade provides additional benefits from economies of scale, technology transfer and increased competition. These gains are manifested in a higher level of efficiency and a higher level of investment (Bassanini and Scarpetta, 2002). In Vietnam, the liberalisation of international trade (with a trade-to-GDP ratio of 81%) and export promotion for labour-intensive industries has helped expand employment for unskilled labour. The EU experience indicates that a 1% increase in economic openness leads to a 0.6% increase in labour productivity in the following year (European Commission, 2016).

Based on the above theoretical and empirical evidence on the importance of economic growth, it is crucial to examine the sectors that contribute more to economic growth and thus to poverty reduction. As shown above in the presented literature, several studies investigated the required macroeconomic policies to achieve growth (see for example: Bassanini and Scarpetta, 2002; Bond et al., 2004 and European Commission, 2016). However, there is a lack of the studies that attempted to investigate the main economic sectors that lead economic growth, especially in developing countries (see for example, Hussin and Yik, 2012). To our knowledge, there are no comprehensive studies that conducted sectoral analysis for the sectors that derived growth in Egypt over time. El-Shamy (2016) is one of the few studies in this regard, however, he focused more on the structural change in economic sectors, and how their share to employment changes over time. Thus, this paper attempts to fill this gap in literature and analyse the contribution of various sectors to economic growth using time series analysis. Accordingly, the paper shall identify the required sectoral growth rates for the specified sectors to reach a target economic growth rate, under different growth scenarios. Having said that, the paper now proceeds by performing a sectoral growth analysis in Egypt using first descriptive analysis, then applying an econometric model to measure the contribution of each sector to growth.

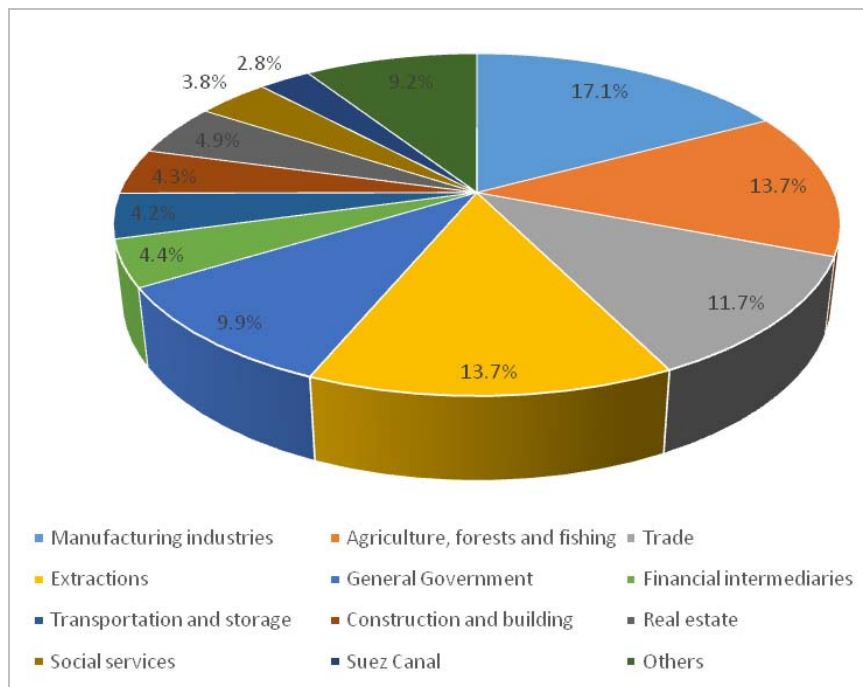
3 Main drivers of economic growth in Egypt: descriptive analysis

The descriptive analysis divides the period of study into three periods. The first period starts from 2002/2003 to 2004/2005, the second one ranges from 2005/2006 to 2009/2010, and finally the last period from 2010/2011 to 2015/2016.¹ The aim of this division is to analyse the pattern of growth rates of various sectors contributing to GDP across time, and identify the main drivers of economic growth in each period.

Before proceeding to divide the period of study into the three aforementioned periods and analyse the growth rates of various economic sectors in those periods, it is useful to have a look at the contribution of economic sectors in GDP. Since this contribution did

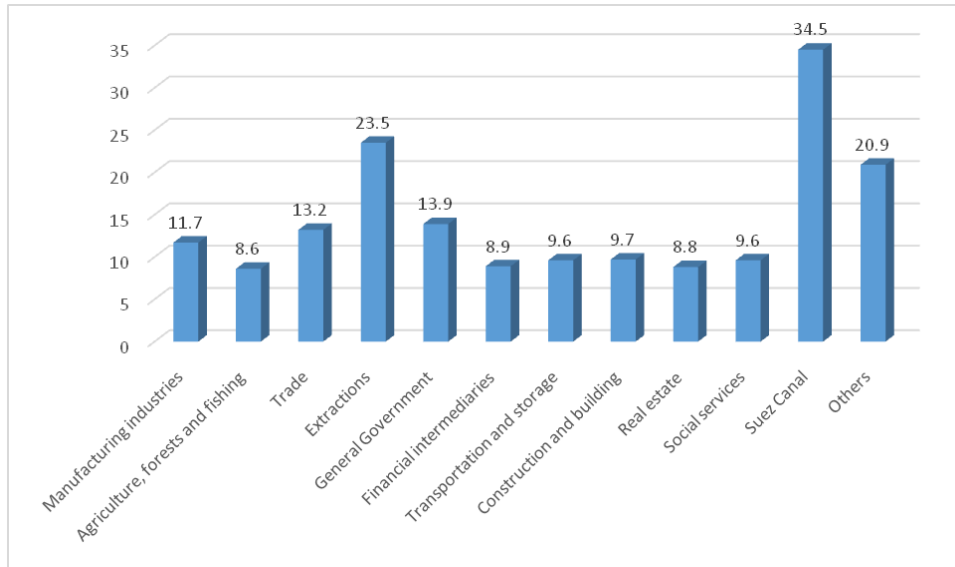
not change significantly from one period to another and the rank of the sectors with the highest contribution in GDP are almost the same, the researchers have grouped them into one chart as shown below in Figure 1. Figure 1 shows the average contribution of the various sectors in GDP throughout the entire period from 2002/2003 to 2015/2016. It is evident that throughout this period, the manufacturing sector constituted the highest share of GDP, as it reached around 17.1% of GDP. This is followed by the agriculture, and extractions sectors, as both comprised an equal share of GDP that reached 13.7%. In the fourth position comes the trade sector (wholesale and retail trade) which accounted for 11.7% of GDP. This highlights the importance of these sectors in deriving economic growth as they constitute the largest share of GDP and their relative importance did not change throughout the different periods. Thus, any efforts to boost economic growth should direct efforts to these leading economic sectors. This provides further support to the findings of the econometric model discussed in Section 4.

Figure 1 Average contribution of economic sectors to GDP (2002/2003–2015/2016) (see online version for colours)



3.1 First period: from 2002/2003 till 2004/2005

The average growth rate during this period amounted to 4%.² This growth has been driven by the growth of Suez Canal revenues, in addition to mining activities, as the growth rates of these two sectors reached 34.5% and 23.5% respectively. These rates are much higher compared to the growth rates of other sectors. For example, the growth rates of the manufacturing sector, agriculture and trade reached 11.6%, 8.6%, and 13.2% respectively as shown in Figure 2.

Figure 2 Average growth rates of economic sectors (2002/2003–2004/2005) (see online version for colours)

3.2 *Second period: from 2005/2006 to 2009/2010*

The average annual growth rate during this period was the highest compared to the other two periods as it reached 6.2% (despite the repercussions of the global financial crisis in 2008). This period witnessed a significant increase in the growth rates of most economic sectors, especially the leading sectors that tend to lead economic growth and contribute greatly to poverty reduction as cited in literature in the previous section, and supported by the empirical model findings discussed in Section 3. In particular, the growth rates of the manufacturing sector, agriculture, and trade reached 17%, 15.1%, and 19.8% respectively, compared to 11.7%, 8.6%, and 13.2% in the previous period.

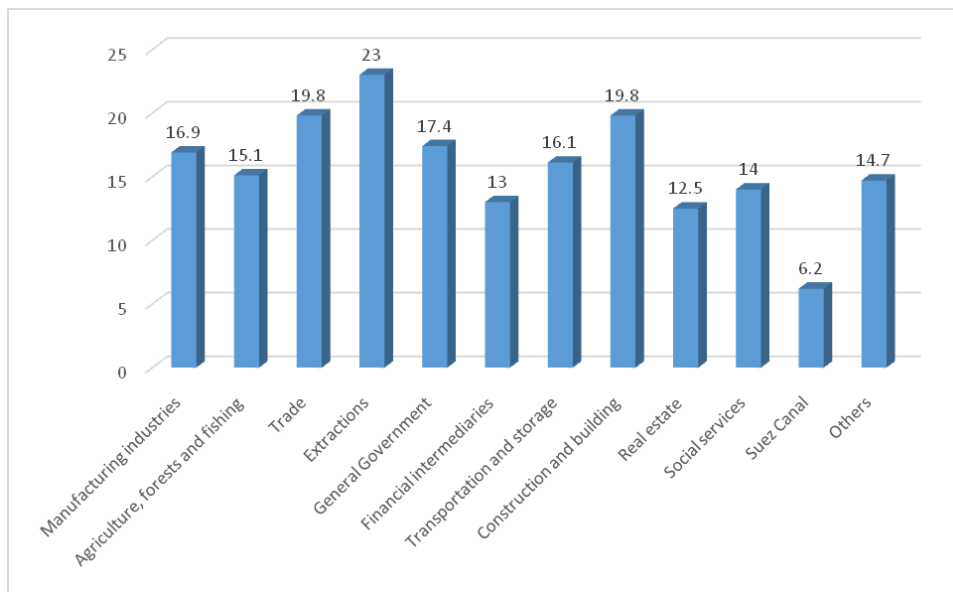
These rates imply that the high economic growth during this period was driven by the growth of leading economic sectors represented in manufacturing and agriculture sectors. Growth in these sectors can lead to sustainable economic growth since the output of these sectors is not much affected by fluctuations in world markets, or seasonal factors, compared to other sectors as Suez Canal.

In addition, services sectors witnessed significant growth during this period, as shown in Figure 3. For example, the growth rates of construction, transportation and financial services reached 19.8% and 16.1% and 13% respectively, as compared to 9.7% and 9.6% and 8.9% during the previous period.

Moreover, this period witnessed a significant increase in the social services expenditures like education, health as the growth rate of these expenditures reached 14%, as opposed to 9% during the previous period. This increase went in line with the high growth rates achieved during this period. This provides support to the theoretical review presented earlier, which argues that high economic growth rates lead to higher levels of expenditure on health and education through macro and microeconomic channels. Hence, economic growth contributes to achieving higher levels of human development.

Finally, despite the increase in the growth rates of most sectors during this period, the growth rate of Suez Canal revenues witnessed a significant decrease during this period as it declined from 34.5% during the period from 2002/2003–2004/2005 to reach 6.2% during the current period. This can be attributed to the global financial crisis in 2008, and its impact on the slowdown of world trade across regions. Thus, the previous analysis reveals that the high economic growth during this period has been sustained by the growth rates of real productive sectors that were capable to drive economic growth despite the unfavourable world market conditions.

Figure 3 Average growth rates of economic sectors (2005/2006–2009/2010) (see online version for colours)



3.3 Third period: from 2010/2011 to 2015/2016

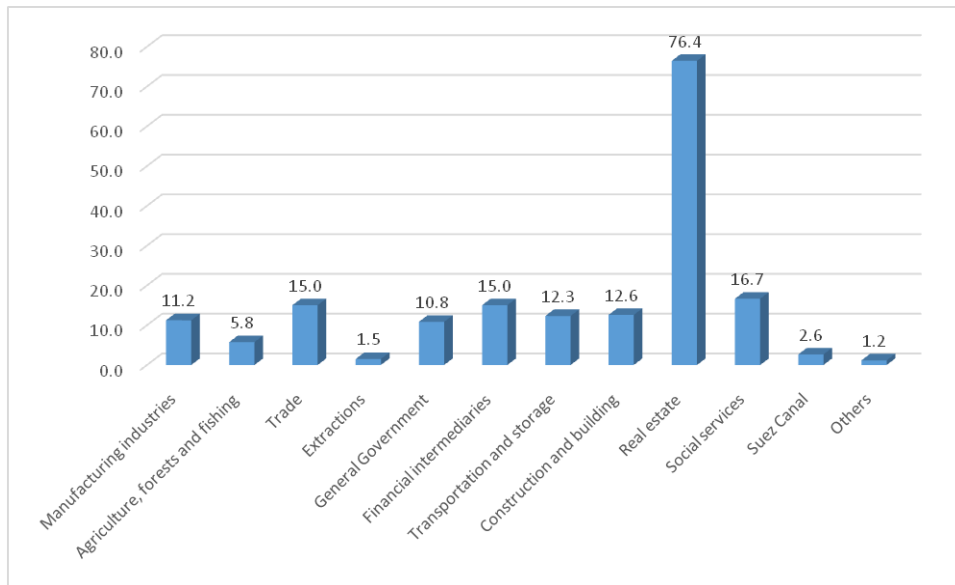
This period witnessed a significant decline in economic growth rates, with an average growth rate of 2.3%. Thus, the growth rates of most sectors decreased greatly, especially the leading sectors that derived growth during the previous periods, as shown in Figure 4.

The growth rates of the manufacturing, agriculture, trade and extractions sectors reached 11.2%, 5.8%, 15% and 1.5% respectively, compared to 16.9%, 15.1%, 19.8% and 23% in the previous period. Despite that, the growth rate of the real estate sector witnessed a huge increase to reach 76.4%. This can be attributed to the tendency of the household sector to invest in real estate as a store of value due to the high inflation rates. This period also witnessed a slight increase in the growth rate of the financial services to reach 15%, compared to 13% in the previous period. This can be attributed to the increase in deposits in the banking sector due to offering products with high interest rates, resulting from the contractionary policy adopted by the Central Bank. Also, the financial sector invested greatly in Treasury-bills and bonds that have been offered with generous amounts to finance the budget deficit, in addition to the role of the banking sector in

financing mega projects like Suez Canal project through offering special tailored products for this purpose.

Lastly, the growth rate of education and health services increased to 16.7%, as opposed to 14% during the previous period. This fact can be explained by the increase in social services expenditures due to setting a minimum price floor for this expenditure as a percentage of GDP in constitution 2014, in addition to the pressures to achieve social justice and improve the quality of these services after January 2011 revolution.

Figure 4 Average growth rates of economic sectors (2010/2011–2015/2016) (see online version for colours)



4 Methodology and model estimation

Following the objective of the paper, we proceed in this section by presenting the empirical methodology intended to identify the leading economic sectors in the Egyptian Economy. We start by presenting the data used in the analysis, followed by the specification of the model, and the empirical results.

4.1 Data

The paper uses nominal³ quarterly data for Egypt over the period (2002/2003–2015/2016). The variables used are as follows: both level and quarterly growth rate of GDP, in addition to the level and quarterly growth rates of the private output of the following economic sectors: manufacturing, agriculture (in addition to forests and fishing), trade, extractions, general government, financial intermediation, storage and transportation, construction, real estate, health and education, Suez Canal, and other sectors.⁴

4.2 Model specification

We follow the model adopted by (Hussin and Yik, 2012) through estimating a linear regression model, where GDP is the dependent variable, and the private outputs of the different economic sectors are the explanatory variables. All variables were estimated at their stationary level.⁵ Table 1 presents the results of the estimated model.

The results indicate that the four leading sectors in Egypt are in order

- 1 manufacturing
- 2 agriculture, forests and fishing
- 3 extraction
- 4 trade.

Therefore, we suggest that these sectors are the more promising ones to drive the targeted growth rate in Egypt. This is also in accordance with the results we obtained from the primary investigation of the data in the previous section of the paper, and supports our main conclusion in identifying the leading economic sectors.

Table 1 Results of the estimated linear regression model

<i>Dependent variable: log GDP</i>	
<i>Explanatory variables</i>	
Log manufacturing	0.1724 <i>18.70</i> (0.000)***
Log agriculture, forests and fishing	0.1499 <i>21.67</i> (0.000)***
Log trade	0.1089 <i>19.97</i> (0.000)***
Log extractions	0.1274 <i>25.99</i> (0.000)***
Log general government	0.1142 <i>12.40</i> (0.000)***
Log transportation and storage	0.2336 <i>2.81</i> (0.008)***

Notes: The table reports the value of parameters, the t-statistic (in italic), and the p-value (between parenthesis where, ***, ** and * indicates 99%, 95% and 90% confidence degrees respectively).

Table 1 Results of the estimated linear regression model (continued)

<i>Dependent variable: log GDP</i>	
<i>Explanatory variables</i>	
Log financial intermediation	0.033 <i>3.54</i> (0.001)***
Log construction	0.7659 <i>6.4</i> (0.000)***
Log real estate	0.0492 <i>10.58</i> (0.000)***
Log health and education	0.6674 <i>6.92</i> (0.000)***
Log Suez Canal	0.0474 <i>4.67</i> (0.000)***
Log others	0.0679 <i>8.07</i> (0.000)***

Notes: The table reports the value of parameters, the t-statistic (in italic), and the p-value (between parenthesis where, ***, ** and * indicates 99%, 95% and 90% confidence degrees respectively).

More specifically, a 1% increase in the output of manufacturing sector is capable of increasing GDP by 0.17%, while, the same increase in the output of agriculture shall increase GDP by 0.15%. As for mining and extraction, a 1% increase in its output is expected to increase GDP by 0.13%, and finally, a 1% increase in trade shall increase GDP by 0.11%. In each case, we are assuming that the other sectors remain unchanged.

4.3 Reform scenarios

This study is based on a main hypothesis which is overcoming the current economic crisis that Egypt is suffering from requires pushing the economic growth rate to the highest level that we could reach and sustain given the current level of available resources, and the different obstacles that could constrain reaching this rate. Given this hypothesis, the study presents different growth scenarios, each target a different growth rate for the FY 2018/2019 based on the intensity of reforms employed to reach this target. Those targets were identified by taking into account the announced government's growth vision over the same period, though we consider it as not sufficient to solve the current economic problems.

In this regard, we present three growth scenarios, one of them is consistent with the government's vision of achieving a 6% real growth rate, and we call it the weak reform

scenario. The average reform scenario targets an 8% real growth rate, and the strong reform scenario targets a 10% real growth rate. Hence, one of the main contributions of this paper is identifying the needed sectoral growth rates to achieve the target growth rate in each of the three reform scenarios.

After identifying the four leading economic sectors capable of driving economic growth rates in Egypt, we proceeded further and calculated how much our four leading sectors should grow together in real terms under the three reform scenarios, as shown in Table 2. This was calculated based on the contribution of each sector to GDP, while assuming that all other sectors remain at their current state. For example, Table 2 shows that in order to achieve a growth rate of 10%, the required sectoral growth rates for the manufacturing, agriculture, extractions, and trade sectors are represented in 19%, 15%, 19% and 23%.

Table 2 Targeted sectoral growth rates under the three reform scenarios

<i>Targeted real growth rates</i>	<i>Strong reform (10%)</i>	<i>Average reform (8%)</i>	<i>Weak reform (6%)</i>
Manufacturing	19%	15%	11%
Agriculture, forests and fishing	15%	12%	9%
Extraction	19%	15%	11%
Trade	23%	18%	14%

Source: Authors' calculations based on model results

It is with no doubt that given any of the three scenarios, there is utmost need for directing the government's attention towards the four main leading sectors. These sectors have the higher probability of driving growth rates, and therefore require the appropriate set of reform policies.

5 Conclusions and policy implications

The previous sections revealed the significant role of the manufacturing and agriculture sectors in promoting economic growth. Thus, it is crucial to explore the required sectoral policies to upgrade these sectors and maximise their contribution to value added, productivity and growth. For the industrial sector, successful country experiences reveal that industrial upgrading should be in line with the comparative advantage possessed by each country. For example, if a country has abundance in labour, it should focus on labour-intensive industries rather than heavy, capital-intensive ones. This capitalises on the comparative advantage and provides benefits to a gradual upgrading in the manufacturing sector.

Thus, the Egyptian government should provide incentives to labour-intensive industries like textiles, and food and beverages, while at the same time, achieving a gradual shift in the manufacturing structure from resource-based and low-tech activities to medium and high-tech industries.

Another crucial aspect is represented in the intra-industry trade. Supporting forward and backward linkages among industries lead to the expansion of the manufacturing sector, the emergence of new industries and the gradual upgrade to more advanced and

capital-intensive industries as the manufacturing sector starts to grow. Therefore, there is an utmost need for an aggressive utilisation of export development and FDI attraction as vehicles for deepening Egypt's regional and global integration drive. At the same time, what is also crucial is effecting a leapfrog in industrial productivity through a carefully-designed set of policies and programs aiming at leveraging industrial competitiveness. Finally, the establishment of special economic zones represents an important milestone that encourages investors to invest in linked industries, and also if the government does not have sufficient resources to upgrade the infrastructure of the entire economy, it can start by building various economic zones that are well-equipped with the required infrastructure and facilities. At the same time, labour abundance in Egypt together with the relatively high population growth requires an equal attention to the agricultural sector. A strong developed agricultural sector does not only help in achieving food security but also in improving the livelihood of the rural inhabitants.

To conclude, it is worth mentioning that the policy exercise, presented in this work, is particularly relevant for policy makers with developmental agenda to determine the sectors with highest priority to direct efforts to. Hence, the methodology presented in this paper has been applied to China and India in previous work, and can be utilised in similar emerging countries seeking to enhance economic growth and development prospects. Future research work can further investigate the particular industries within the manufacturing sector that contribute to this objective and can maximise the contribution to generating value-added, employment and technological diffusion.

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Notes

- 1 The division of periods depends on the actual growth rates achieved. Since the period from 2005/2006 witnessed the highest growth rates, this research attempts to conduct a comparative analysis of drivers of economic growth by comparing this period to a former and successive time period.
- 2 Real growth rates of GDP have been utilised to account for real growth after excluding the effects of inflation, however due to the unavailability of real data on the production of different sectors, nominal growth rates of sectors were calculated. The researchers tried to calculate real values of the production of sectors, but several problems were encountered represented in the unavailability of time series data for a price index covering the time period of the study, and the use of multiple base years for the available CPI and PPI data. The researchers believe that using nominal growth rates for economic sectors will not affect the results of the study as the objective of this part is to identify the leading sectors in achieving high growth rates in each period. Thus, changing the growth rates from nominal to real will not affect the ordering of various sectors.
- 3 As discussed before in Section 2, nominal data was used due to unavailability of real data at the sector level for the period of study.
- 4 We follow the classification of economic sectors adopted by the Ministry of Planning (2016), as being the main source of the data used in this study. Other sectors include an aggregate of all the economic sectors whose contribution to GDP is less than 2.5%. This was done with two objectives; first, to limit the big number of explanatory variables used in the model, and hence maintain the statistical validity of the model. Second, to focus more on the main sectors with the greatest contribution to GDP, and therefore allow us to identify the leading sectors that could drive the targeted growth rate.
- 5 The model was estimated twice; one with level data and other with quarterly growth rates. The significance as well as the ordering of the contribution of sectors is almost the same. Therefore, the paper presents only the results of the model estimated with the level data.