

Arab Development Challenges
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The ADCR 2011: Structural Retardation of Arab Economies: Symptoms and Sources

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Acronyms and Abbreviations

AAGR	Average Annual Growth Rate
AC	Arab countries
ADI	Arab Democracy Index
CoV	Coefficient of Variation
DESA	Department of Economic and Social Affairs
DR	Developing Region
EAP	East Asia & Pacific
ECA	Europe & Central Asia
FDI	Foreign Direct Investment
GCC	Gulf Cooperation Council
GCF	Gross Capital Formation
GDP	Gross domestic product
GDP pc	Gross Domestic Product per capita
GET	Global Employment Trends
GFS	Global Finance Statistics
HDI	Human Development Index
HDR	Human Development Report
HICs	High income countries
ILO	International Labour Organization
IMF	International Monetary Fund
IPCC	Inter-Governmental Panel on Climate Change
ITCB	International Textile and Clothing Bureau
LAC	Latin America & Caribbean
LDC	Least developed countries
LFPR	Labour Force Participation Rate
LICs	Low Income Countries
MD	Multi -Dimensional
MDG	Millennium Development Goals
MICs	Middle income countries
NGO	Non-governmental organization
OLS	Ordinary Least Squares
OPT	Occupied Palestinian Territory
PPP	Purchasing power parity
SAS	South Asia
SNA	The System of National Accounts
SSA	Sub-Saharan Africa
STDEV	Standard Deviation
UAE	United Arab Emirates
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNECA	United Nations Economic Commission for Africa
UNICEF	United Nations Children's Fund
UNSD	United Nations Statistics Division
WDI	World development Indicators

Introduction¹

As in the case of other developing regions, when most Arab countries became independent in the 1960s the dominant approach to effecting development in developing countries was informed by the basic ideas and concepts proposed by development economists of the 1940s and 1950s. These ideas and concepts were based on visionary development strategies that aimed at effecting structural transformation with a central role assigned to the government in planning and programming such a process. The policy content of these models was informed by, among others, the observation that “a less-developed economy was characterized by pervasive market failures. To correct, or avoid market failure, they advocated central coordination and allocation of resources”.² In addition to pervasive market failures, the call for a greater role to be played by governments was based on and indeed justified by reference to, the belief that the supply of entrepreneurs was limited in these countries and that major structural changes, as opposed to, marginal adjustments, were needed to effect development. Thus, the “*government of a developmental state was to promote capital accumulation, utilize reserves of surplus labour, undertake policies of deliberate industrialization, relax the foreign exchange constraint through import substitution and coordinate the allocation of resources through programming and planning*”.³

In the first section of this paper we follow closely the arguments presented in Abdel Gadir (2011), which analyzes the dynamics of growth and structural transformation for the Africa continent. He concludes that a real transformation in the economies of African countries is only possible through the return to these earlier models of development economics where state intervention is not just expected but is seen as a prerequisite to effecting the required structural transformation.⁴ Our results show that this conclusion is equally applicable to the Arab region.

Although necessary, economic growth by itself does not lead to a *'healthy'* structural transformation that alleviates poverty, reduces inequality or creates jobs. Recent experience in both developed and developing countries has shown that economic growth can lead to higher inequality and joblessness. Indeed, Arab economies failed to create well-paid jobs despite fast growth rates in recent years. This failure casts doubt on the conventional view that the fight against wide-spread poverty requires only well-functioning markets. As Fields (2004, p.1) points out, the “poor are poor because they earn too little from the work they do.” If markets do not promote good jobs, poverty is likely to persist in spite of high output growth rates.

The phenomenon of jobless growth has led to a resurgence of mercantilist and classical perspectives on what constitutes pro-poor growth policies and changes in the structure of an economy have again gained prominence in policy debates. For example, UN (2006) emphasized the industrial sector as the engine of economic growth. Manufacturing activities benefit from economies of scale and therefore can experience rapid output expansion, but they also quickly exhaust their ability to create jobs. Ocampo et al. (2009) show that during the past two decades jobs in developing countries have been created mostly in the service sector. Important differences exist across countries. Employment and productivity growth in the service sector occurred simultaneously for the successful economies of East Asia & the Pacific, while for the rest jobs were created at the expense of efficiency. The dissociation of employment and productivity growth is problematic since in the long run wages can grow at a steady pace only if productivity expands as well. The productivity decomposition and sources of economic growth exercises to be presented in the second and third parts of this paper highlights these issues for the Arab region relative to other developing regions.

Economic Transformation and Sustained Economic Growth

Following Abdel Gadir (2011), the fundamental requirement of structural transformation in the development process is embodied in the famous dual economy model.⁵ As is well known such a model looks at a typical economy of a developing country as composed of two broadly defined sectors: a large rural (traditional, or agricultural) sector characterized by low productivity; and a relatively small urban (modern, or industrial) sector characterized by high productivity. Among the highly aggregated descriptive features of such a model economy is an asymmetry in production techniques: that in the low productivity sector is labour intensive relying on an abundant supply of labour and land; while that in the high productivity sector is capital intensive relying on labour and capital. The supply of labour to the modern sector is infinitely elastic at an institutionally fixed wage. In the context of such an economy, development takes place in the form of capital accumulation in the high productivity sector supported by the migration of labour from the low productivity sector. This process is what is referred to as structural economic transformation.⁶

The development process of a typical dual economy of a developing country would show that structural transformation usually takes root in the context of a sustained increase in real per capita incomes over a fairly long period of time. Following Abdel Gadir (2011), in what follows we look at economic growth in the Arab region over the period 1970-2009 categorized in three sub-periods: 1970-1982, where a number of Arab countries posted real per capita growth rates equal to, or in excess of, 2% per annum; 1983-2000, where growth collapsed in a large number of Arab countries; and, 2000-2009, where a recovery of growth in a large number of Arab countries is recorded. In the context of the Arab growth processes we look at the record of structural transformation over the period 1970-2009.⁷

First, we need to define in concrete terms, the thresholds for economic growth and transformation. As is well known what is meant by an economic structure is the relative contribution of the different sectors in the economy in terms of production and factor use. Thus, structural transformation can be looked at as the change in the sectoral composition of output (or GDP) and that of the sectoral pattern of the employment of labour, as the economy develops (i.e. as real GDP per capita increases). The structural transformation process has been the subject of a number of empirical studies included in specialized development literature on the patterns of economic and social development. In this literature a structural transformation indicator, such as the GDP or employment share of a sector, is used as a dependent variable to be explained by the level of development (real GDP per capita as a proxy) and total population. The relationship is usually posited as non-linear in income and population (e.g. quadratic). Focusing on the share of the three production sectors (agriculture, industry and services) in addition to the manufacture sub-sector, the most important results of these studies can be summarized in four stylized facts of economic structural transformation:

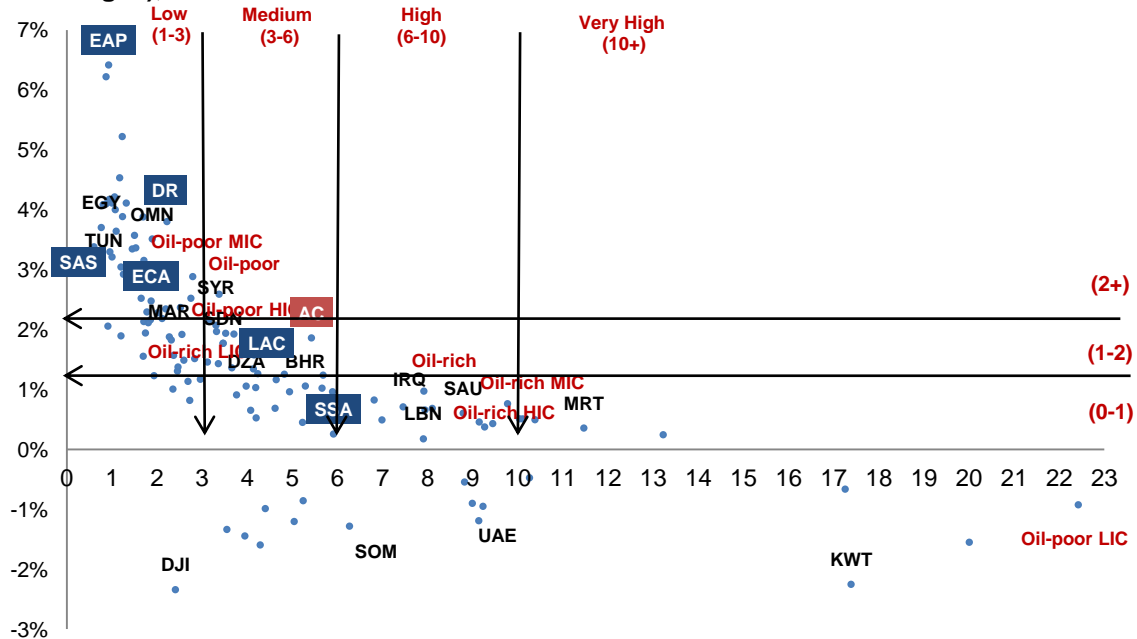
- 1) The Share of Agriculture in GDP: over a long period of time as real per capita GDP increases, it is expected that the share of agriculture in GDP will decline over time and reach a minimum when real per capita income reaches about \$12150 (in 2005 constant prices);
- 2) The Share of Industry in GDP: over a long period of time as real per capita GDP increases, it is expected that the share of industry in GDP will increase over time and reach a maximum when real per capita income reaches about \$13500 (in 2005 constant prices);
- 3) The Share of Services in GDP: over a long period of time as real per capita GDP increases, it is expected that the share of services in GDP will increase over time and

reach a maximum when real per capita income reaches about \$9500 (in 2005 constant prices);

- 4) The Share of Manufacturing: over a long period of time as real per capita GDP increases, it is expected that the share of manufacturing in GDP will increase over time without necessarily reaching a turning point in terms of real per capita income;

Given these stylized facts, we now examine patterns of growth and structural transformation in the Arab region. However, it is important to note that the Arab region is composed of highly diverse economies. Hence, there appears to be a number of ways of classifying the countries of the region. In this section, we group the countries of the region into four broad categories: oil-rich economies (GCCs plus Sudan, Yemen, Iraq, Algeria and Libya) and oil-poor economies (Egypt, Jordan, Lebanon, Morocco, Syria, Tunisia, Comoros, Djibouti and Mauritania). Within each of those categories we further divide countries into three sub-groupings: High Income countries (HIC), Middle Income Countries (MIC) and Low Income Countries (LIC) depending on their level of GDP per capita. It is worthy to note that these thresholds are only intended for the purpose of our analysis in this paper and are not necessarily consistent with international definitions and criteria.

Figure 1: Distribution of Arab countries versus rest of the world according to volatility (Coefficient of variation) and Average annual real per capita GDP rates of growth (in percentages), 1970-2009



Source: Authors estimates based on data from National Account, UNSD

Using GDP per capita in 2005 constant prices, average annual real GDP per capita growth rates, over the period 1970-2009, reached 1.9 per cent per annum for 20 countries and fast growth in excess of 2.8% per annum (implying a doubling of real per capita income in two and a half decades or less) was recorded for 3 Arab countries. During this period seven countries recorded negative average annual real GDP per capita growth rates, while 9 countries recorded positive, but less than 2%, average per capita growth rates.

Since 1982, however, growth faltered. Thus, for example, over the period 1982-2000 real GDP per capita recorded an average annual rate of growth in excess of 2% in 3 countries only and the number of countries recording negative average annual real per capita GDP growth rates reached 13. The remainder of the 20 countries recorded positive, but less than 2%, average annual growth rates.

Recently an improved Arab growth performance was recorded for the period 2000-2009. Average annual growth rates in excess of 2.8% were recorded for 10 countries with none of the Arab countries recording negative average annual growth rates except Comoros. From the remaining 9 countries, only five recorded positive but less than 2% average annual growth rates and 4 recorded growth rates between 2 and 2.8%.

Over the entire period 1970-2009 average annual growth rates in excess of 2% were recorded for 4 Arab countries (accounting for about 36% of the Arab population); 4 countries (accounting for less than 8% of the Arab population) recorded negative average annual per capita growth; and 13 countries recorded positive, but less than 2%.

Table 1: The distribution of Arab countries versus rest of the world according to volatility (Coefficient of variation) and average annual real per capita GDP rates of growth across three periods (percentages change), 1970-2009

Country/ Region	1970-2009		1970-1982		1983-2000		2001-2009	
	Growth	CoV	Growth	CoV	Growth	CoV	Growth	CoV
Bahrain	1.1%	5	2.7%	5	-0.4%	22	4.0%	0
Kuwait	-2.3%	17	-8.0%	1	-0.1%	11	3.5%	2
Oman	3.5%	2	5.7%	2	2.3%	2	2.8%	1
Qatar	0.0%	34	-1.7%	3	-0.5%	55	3.7%	2
Saudi Arabia	0.6%	9	7.6%	1	-2.9%	2	1.1%	3
United Arab Emirates	-1.2%	9	-1.7%	5	-3.0%	3	4.8%	1
Algeria	1.1%	4	2.5%	3	-0.2%	14	2.4%	1
Iraq	0.7%	8	7.1%	2	-1.4%	31	0.8%	8
Libya	-0.5%	52	2.6%	21	-2.0%	4	2.8%	2
Sudan	1.8%	3	0.4%	8	0.9%	6	4.5%	0
Yemen	-	-	-	-	-	-	1.5%	0
Jordan	1.3%	4	3.2%	2	-1.3%	4	3.5%	1
Lebanon	0.2%	8	-3.6%	17	0.6%	7	3.7%	1
Tunisia	3.2%	1	4.9%	1	2.2%	1	3.6%	0
Egypt	3.7%	1	4.1%	1	3.5%	1	3.5%	0
Morocco	1.9%	2	2.7%	2	1.5%	3	2.2%	2
Syria	2.1%	3	6.2%	1	0.0%	28	2.0%	1
Comoros	0.0%	336	1.4%	2	-0.6%	4	-0.5%	6
Djibouti	-2.3%	2	-5.4%	2	-2.7%	2	2.2%	1
Mauritania	0.4%	11	-0.2%	93	-0.7%	7	3.5%	3
Somalia	-1.3%	6	-2.7%	5	-1.6%	5	0.6%	1
Oil-rich countries	1.0%	8	3.3%	5	-0.6%	13	2.6%	3
Oil-rich HIC	0.4%	9	5.1%	2	-2.1%	5	2.0%	3
Oil-rich MIC	0.8%	10	4.3%	4	-0.8%	20	1.8%	4
Oil-rich LIC	1.8%	3	0.4%	8	0.9%	6	4.5%	0
Oil-poor countries	2.6%	3	3.3%	3	2.0%	5	2.9%	1
Oil-poor HIC	2.1%	3	2.4%	5	1.0%	3	3.6%	1
Oil-poor MIC	3.0%	1	4.0%	1	2.5%	5	3.0%	1
Oil-poor LIC	-0.9%	22	-2.1%	23	-1.4%	5	1.3%	1
Arab countries	1.9%	5	3.3%	4	0.8%	8	2.8%	2
East Asia & Pacific	6.4%	1	4.2%	1	7.0%	10	8.3%	0
Europe & Central Asia	2.5%	2	4.1%	1	1.5%	6	3.8%	2
Latin America & Caribbean	1.6%	4	3.7%	3	0.5%	13	2.2%	3
South Asia	2.9%	1	0.5%	5	3.1%	1	5.6%	0
Sub-Saharan Africa	0.3%	6	0.2%	6	-0.9%	108	3.4%	3
Developing region	3.8%	2	2.6%	3	3.8%	18	5.7%	1

Source: ibid.

Among the major features of the Arab growth processes, especially those of the low income and oil-rich groups, is their relatively high volatility. Measuring volatility by the coefficient of variation (i.e. the ratio of the standard deviation to the absolute value of the mean of the per capita GDP growth rates) and using a value of one or less as a benchmark for very low volatility, it is found that, with the exception of Egypt and Tunisia, none of the growth processes of the Arab countries was characterized by very low volatility over the entire

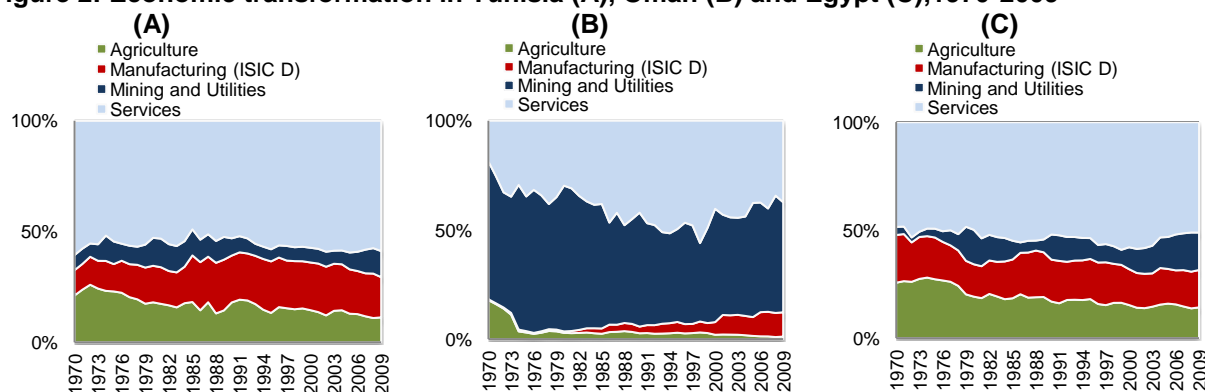
period 1970-2009. Low volatility, arbitrarily defined by a coefficient of variation of greater than one but less than three is recorded for 3 countries. The lowest volatility in this group is recorded for Oman (with a coefficient of variation of 1.9). Moderate volatility, arbitrarily defined as a coefficient of variation of three but less than six, is recorded for 5 countries; high volatility, arbitrarily defined as a coefficient of variation of six but less than ten, is recorded for 5 countries; and, very high volatility, arbitrarily defined as a coefficient of variation of 10 and greater, is recorded for the remaining 5 countries, with the highest volatility recorded for Comoros with a coefficient of variation of about 335 (resulting from an average growth rate of real GDP per capita of -0.02% per annum and a standard deviation of 0.02).

Figure 1 and Table 1 summarize the growth performance of the Arab region. In the figure, the vertical axis marks the coefficient of variation (i.e. the ratio of the standard deviation to the absolute value of the average annual growth rate), while the horizontal axis stands for the average annual growth rate.

Based on the above, we may define a sustained growth process as one that requires an average annual real GDP per capita growth of 2% or more over the entire period 1970-2009, maintained for each of the three sub-periods, with low volatility for the entire period 1970-2009; where low volatility may be defined by a coefficient of variation (CoV) for the growth rates of less than two. Using this definition of sustainability, we note that only three Arab countries recorded sustained growth over the period in question: Egypt (with an average annual real GDP per capita growth rate of about 3.7% and a CoV of 1); Tunisia (3.2% and 1.0); and Oman (3.5% and 2).

Combining the sustainability and volatility of the Arab growth processes, a sustained, low volatility, growth country will be classified as having achieved a classical structural transformation of its economy over the period 1970-2009 if the respective GDP shares of the conventional three sectors of agriculture, industry, services, in addition to that of the manufacturing sub-sector, obey the stylized facts of structural transformation as real GDP per capita increases. According to the available information only two Arab countries, out of the three countries that achieved sustained growth over the period since 1970, were able to satisfy the requirements of a classical structural transformation over the period 1970-2009. The countries in question are Oman and Tunisia. Egypt suffered from an incomplete manufacturing transformation in the sense that despite the classical trend in the GDP shares of the three major production sectors they saw the share of the manufacturing sector decline over the period in question. Egypt's experience is significant in view of the fact that in 1970 the share of the manufacturing sub-sector was about 22% of GDP, which could have classified it as an industrialized country; but declined to about 17% of GDP in 2009 (Figure 2).

Figure 2: Economic transformation in Tunisia (A), Oman (B) and Egypt (C), 1970-2009

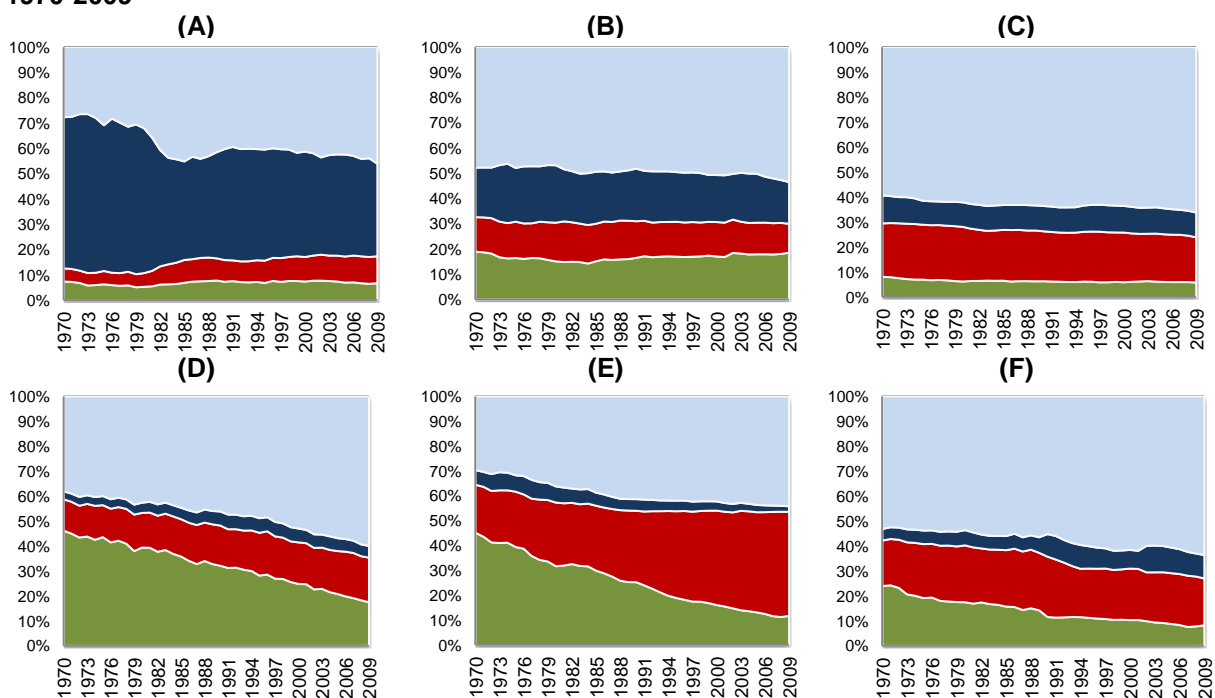


Source: ibid

A more relaxed definition of sustained Arab growth process would require maintaining an average annual real GDP per capita growth rate of 1.9% or more for the entire period, as well as for two sub-periods; together with low to medium volatility for the entire period, where the latter is defined as above 2 but below 5.5. Under such a more relaxed definition two additional countries are added to the group, namely Syria (with an initial 1970-2009 average annual real GDP per capita growth rate of 2.1 percent and coefficient of variation of 3.1) and Morocco (with an average annual real GDP growth rate of 1.9% for the sub-period 1970-2009 and a coefficient of variation of 2.3). It is perhaps clear that the sustained growth processes in both countries were interrupted during the last decades sub-period 1982-2000. Syria recorded significant de-industrialization over the period and the contribution of agriculture showed a counter classical transformation pattern. Morocco recorded an incomplete manufacturing transformation in the sense that despite the classical trend in the GDP shares of the agricultural and services sectors it witnessed the share of the manufacturing sector decline over the period in question.

For the sake of additional insights about the Arab transformation process we could consider the group of countries that recorded an average annual growth rate of per capita GDP in excess of 1% per annum with a record of low or medium volatility. Four countries, Bahrain, Algeria, Jordan and Sudan belong to this group. With the notable exception of Jordan, these countries recorded a distorted pattern of transformation. In the case of Bahrain, the near absence of agriculture from the economic structure over the entire period is understandable given its water scarcity. Sudan's transformation is closer to Egypt and Morocco where deindustrialization was accompanied by declining share of agriculture but -in the more recent period- in favour of the mining sector as opposed to services. It is worthy to note however that for Sudan and to a lesser extent for Syria, agriculture is still a major component of GDP structure.

Figure 3: Economic transformation in Arab countries (A), Sub-Saharan Africa (B), Latin America& Caribbean (C), South Asia (D), East Asia& Pacific (E) and Europe & Central Asia (F), 1970-2009



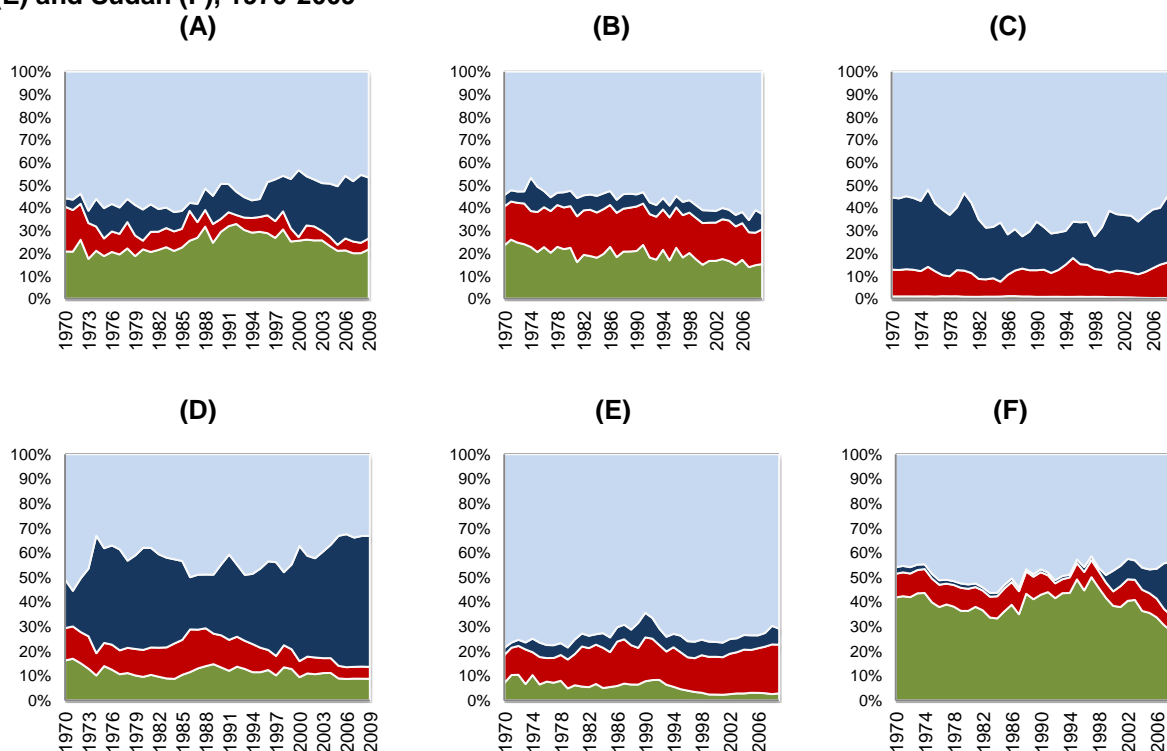
Source: *ibid*

Notes: (1) Legend of figure 2 applies.

(2) Arab countries included are Comoros, Djibouti, Egypt, Jordan, Lebanon, Mauritania, Morocco, Somalia, Syria and Tunisia as oil-poor countries and Algeria, Bahrain, Iraq, Kuwait, Libya, Oman, Qatar, Saudi Arabia, Sudan, UAE and Yemen as oil-rich countries.

Compared to other developing regions; the Arab region witnessed below average rates of real per capita growth. The Arab region is doing considerably better than Southern Africa. However, the Arab region grew on average at a percentage point less than Latin America& the Caribbean and Europe& Central Asia and considerably less than East and South Asia regions. Disaggregation of the regions by oil-rich versus oil-poor countries reveals interesting facts. Economic growth in the oil-rich countries was, subject to the whims of oil prices, highly volatile. It should be noted however that this volatility was stronger in high and middle income countries than in low income countries and that it was reduced significantly in the most recent period which suggests this group of countries have acquired and implemented better counter-cyclical macroeconomic tools. In high income GCCs and in MICs, fast economic growth took place during the 1970s and 2000s when oil prices were high; negative or stagnant performance during the low oil price periods of 1980s and early 1990s. LDCs on the other stagnated during the first period but emerge with very decent growth rates in the last period as the two economies in this group, Sudan and Yemen, increased their production and export of oil.

Figure 4: Economic transformation in Syria (A), Morocco (B), Bahrain (C), Algeria (D), Jordan (E) and Sudan (F), 1970-2009



Source: ibid

Note: Legend of figure 2 applies.

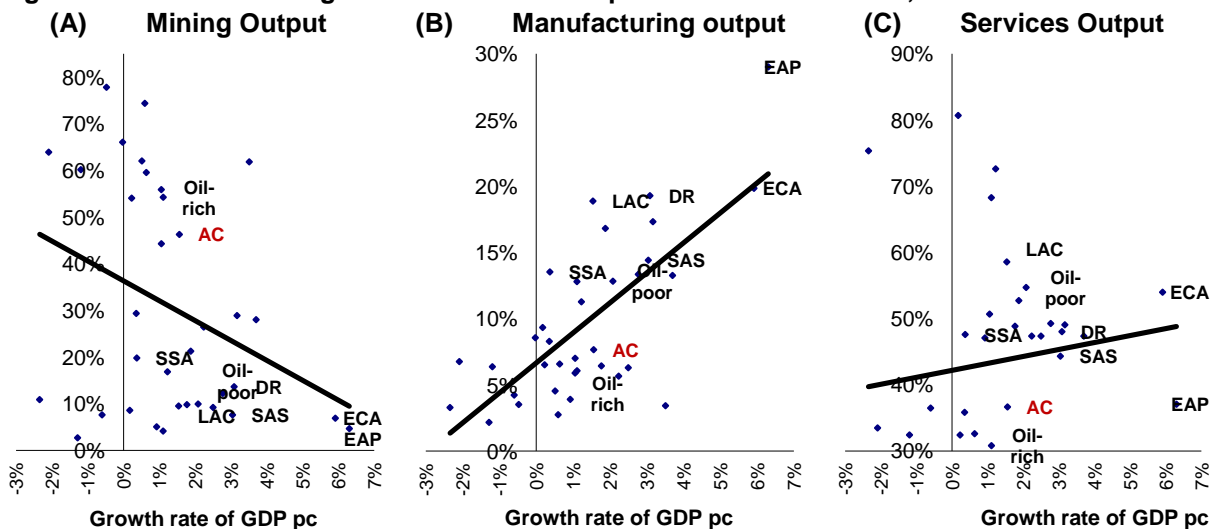
The growth pattern of oil-poor countries has been higher and less volatile than that for oil-rich countries. Thus per capita growth rates averaged 2.1% over the entire period and during the first period. It then declined to 1.7% in the second period before rebounding to 2.9% during the third period, driven in large part by regional spill-overs from the regional oil-led boom. Still, there with large variation within that group. The MICs, led by Egypt, recorded the highest growth rate (2.8%) and lowest volatility. The HICs recorded modest growth (1.1%) and relatively high volatility (CoV of 6), while LICs showed negative growth (-0.9%) and high volatility (CoV of 8).

These results yield a regional structural transformation pattern that contrasts sharply with other developing regions. Herein lies the Arab structural economic problem: stagnating shares of agriculture and manufacturing sectors (albeit with a slight increase in the latter due

to a rise in manufacturing sector contribution -particularly petrochemical industries- in GCCs), a rapidly expanding (but as we shall see concentrated mainly in low value added activities) service sector and a still leading, though rapidly declining, oil sector (**Error! Reference source not found.5.A**).

The gist of the story is that oil revenues have supported a service-led pattern of economic development at the expense of productive sectors which renders the region as the least industrialized among developing regions, including Sub Saharan Africa. The latter, along with Latin America & the Caribbean, did not experience much transformation relative to the three other developing regions. That is perhaps expected given that Latin America's economic transition had started much earlier and had already matured by the early 1970s and that the contribution of agriculture to GDP had already reached at a minimum. The more erratic shape of the Arab economic transformation during the early period is also symptomatic of the large boom in service and construction sectors that ensued in the late 1970s and early 1980s driven by the massive wealth accumulated as a result of rising oil prices.

Figure 5: Structural Change and sectoral decomposition of value added, 1970-2009



Source: ibid

Note: Arab countries included are same as figure 4

These stylized facts suggest a causal relation between overall economic performance and economic structure may exist. Figure 5 explores this hypothesis for the Arab region and developing regions by plotting average annual growth rate of real GDP per capita against the average sectoral share in GDP of manufacturing, mining and services, both over the sample period 1970 to 2009. The line in each of the figures is a simple OLS regression. A first observation is that that the growth rate of GDP per capita tends to be inversely related to the mining sector output share and positively related to manufacturing. No clear relation exists between the service sector's share and growth. The Arab region's situation well above the regression line with respect to the mining sector and below the average for the manufacturing is an expected result of the larger share of mining and smaller shares of manufacturing (and services) compared to all the other developing country groups. Indeed, figures 5.A through 5.C suggest that the Arab region show a significantly different development trajectory. Indeed it would be fair to conclude that oil resources have delayed the normal process of economic transformation, leading to retarded productive capacities and hence a more rudimentary economic structure relative to what one would expect at their level of GDP per capita.

Sources of Growth

These empirical findings place the Arab regions in a category of their own and any effort to understand the dynamics of employment, poverty and human development must take into account the structural specificities of these economies. Evidence suggests that certain country characteristics in the Arab region hamper development of competitive manufacturing industries. In this regard, the lack of diversification away from extractive industries plays an important role. Further relevant are strong dependence on external conditions and limited public capacity to pursue counter-cyclical policies and generally finance development. Results include de-industrialization and heavy reliance on low-skill, service and informal sector employment.

In this section we begin with a more in depth discussion of structural change, or the lack thereof, based on sectoral contributions to growth and decompositions of sectoral employment and productivity. Then, we consider the contributions to growth of GDP by private, public and foreign demand, based on data of net borrowing flows as well as decompositions of the growth rate of GDP by expenditure type.

Sectoral contributions and their volatility

6 reports average annual growth rates of value added, decomposed into the contributions of broad sectors. These broad sectors are (1) agriculture, hunting, forestry, fishing; (2) mining; (3) manufacturing; (4) construction and (5) services.

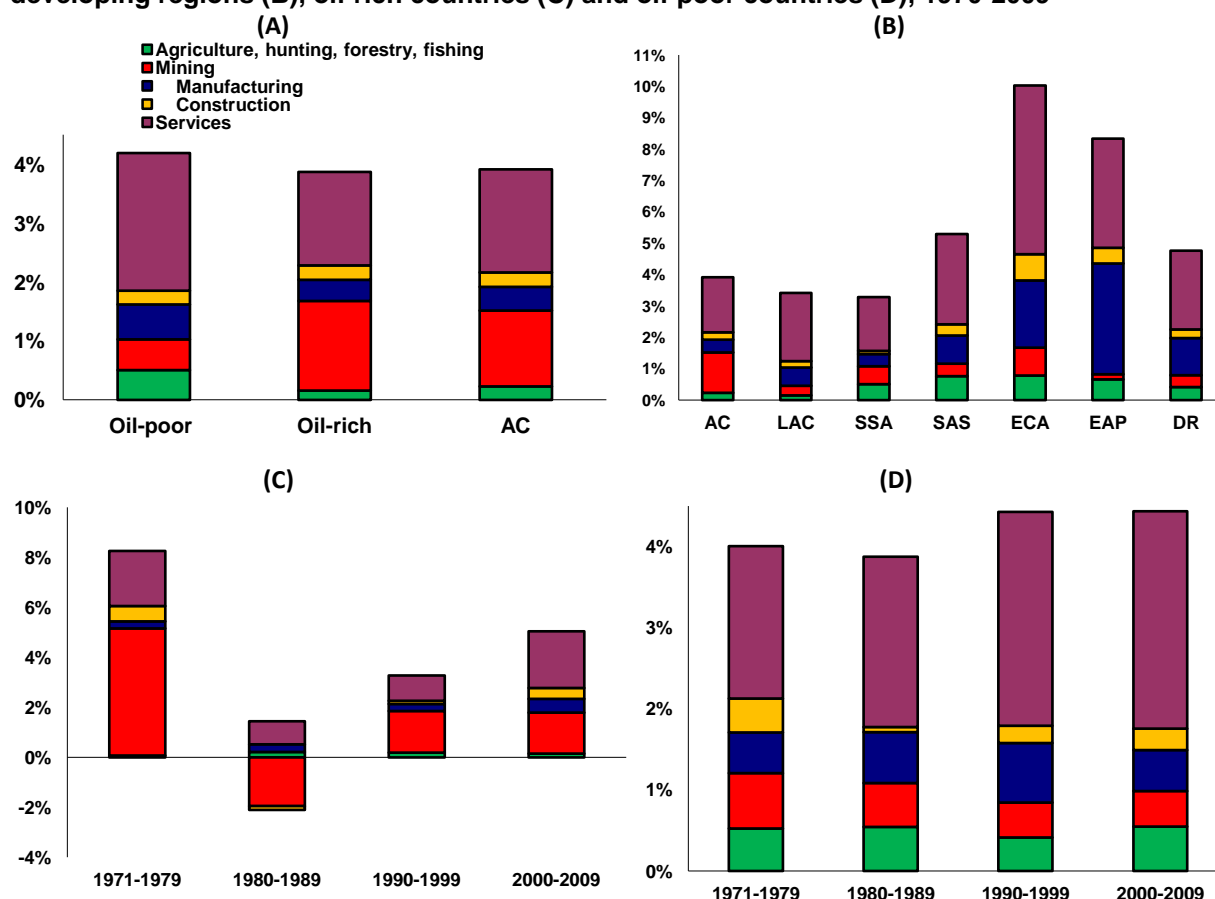
First, figure 6.A-B compares the two main groups and the aggregate of all Arab countries to the aggregate of all developing countries. Services and manufacturing are the main contributors to the expansion in value-added for all developing countries, with 2.3 and 1.1% respectively. In the Arab region, 1.7% of growth of value-added comes from services and only 0.4% from manufacturing. Mining, on the other hand, added 1.3% to growth in the Arab Region, compared to only 0.3% in developing countries as a whole. Agriculture makes a considerably small contribution to growth in the Arab region of roughly one-fifth of one percentage points, compared to one quarter percentage point in the larger group of developing countries. Further, there are important differences among the Arab sub-groups. For oil-poor countries, the mining sector contributes the least to economic growth in LICs and HICs which tend to have fewer oil resources. The manufacturing sector adds three quarters of one percentage point to growth in LDCs, which is the largest contribution by the sector across the four regions. Agriculture also plays a very important role for oil-poor LICs.

However, it is clear that services are the main source of growth for all oil-poor countries. In MICs and HICs, the manufacturing sector had the second largest contribution, though significantly smaller than that from services. For oil-rich countries there appears to be a more even distribution among services, mining and agriculture sectors in terms of their contribution to growth, with the contribution of mining rising since the 1980s owing to oil discoveries in Sudan and Yemen. For MICs and HICs, the mining sector was the principal source for growth and services were a distant second.

Fluctuations in the performance of the mining sector have been driven by oil price movements and have defined the growth performance of the Arab and oil-rich countries. In the 1970s the mining sector alone supported more than five percentage points of total growth of eight percent of that group. In GCC countries the mining sector added almost half of the 11% growth in economy-wide value added during that period. The situation reversed sharply in the 1980s when the collapse of oil prices caused a contraction in the mining sector's output.

Manufacturing has contributed very little to value added growth in the low-income oil-poor countries and in the most recent decade, its contribution was virtually nil. In the past decade, manufacturing in the oil-poor MICs and HICs picked up some momentum. It remains to be seen if this is a sustainable trend or a temporary change. The service sector fairly consistently supports growth of value-added in all regions for most of the periods. Services certainly dominate economic performance in the oil-poor countries and are at par with agriculture in the LICs.

Figure 6: Sectoral composition of rate of growth of value added for Arab countries (A), developing regions (B), oil-rich countries (C) and oil-poor countries (D), 1970-2009



Source: *ibid.*

Notes: (1) Legend of figure 6.A applies.

(2) Arab countries included are same as figure 4

As these trends illustrate, dependence on oil revenues has left Arab economies exposed to the vagaries of international oil markets and structurally weak. Consequently, for most of the last four decades, economic growth has been more erratic than for other developing regions as shown in Table 1. This is also confirmed by data in Table 2 which shows average real growth rate of the economic sectors and its volatility. Accordingly, the mining sector had the highest contribution to economic volatility in the region followed by the agriculture, construction and service sectors, respectively. This is expected given the reliance of many countries on rain-fed agriculture which lead to turbulence in production and prices and the reliance of construction and services on oil revenues in many countries. It is worthy to note however that the country level fluctuations are significantly higher than the regional and sub-regional averages. This is because of the smoothing effect that aggregation has on the sharpness of these fluctuations. Two other observations are interesting to note. First and somewhat counter intuitive, the pattern of volatility is identical for oil-rich and oil-poor countries. The higher overall growth volatility in Table 1 is thus due to the more significant share of mining. Within the oil-rich group, MICs witnessed the highest volatility. The opposite

is true for the oil-poor MICs, which recorded the lowest CoV. Second and perhaps more importantly, despite the structural retardation of Arab economies, manufacturing sector showed the highest growth rate among all sectors and the lowest volatility. Indeed, this is also apparent in

.A where manufacturing sector contribution to GDP is shown to have increased but the problem is that the sector's share is still insignificant in most Arab countries, most of which started with a very low industrial base in 1970.

Table 2: Volatility (Coefficient of variation) and average real rates of growth of economic sectors for Arab countries and developing regions,1970-2009

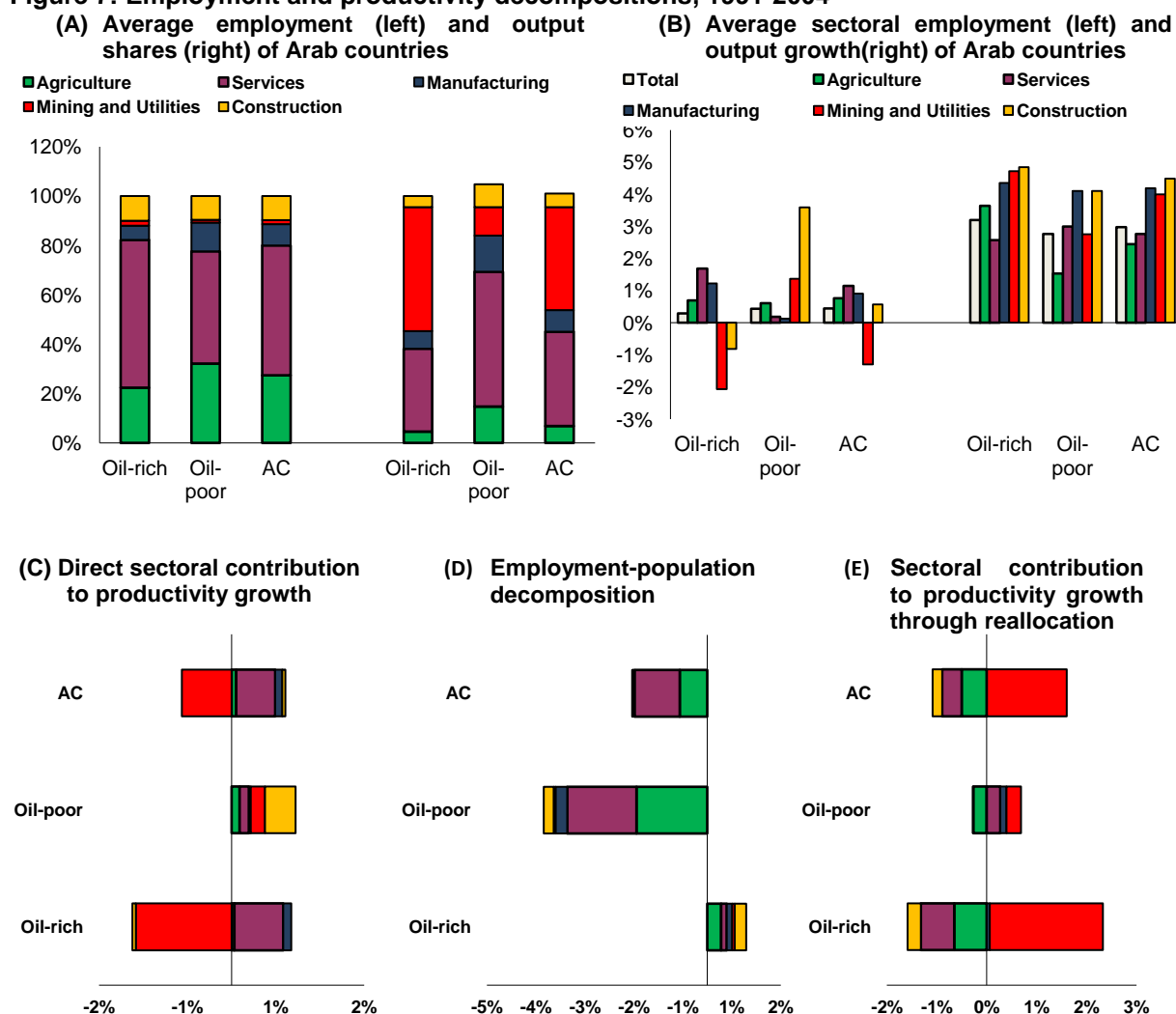
Country/Region	Agriculture		Manufacturing		Mining and Utilities		Construction		Services	
	Growth	CoV	Growth	CoV	Growth	CoV	Growth	CoV	Growth	CoV
Bahrain	3.1%	3	6.8%	2	1.4%	6	4.3%	4	6.1%	2
Kuwait	4.7%	3	3.7%	3	-0.8%	13	4.1%	4	5.7%	2
Oman	1.0%	6	15.9%	1	5.8%	2	5.4%	3	10.2%	1
Qatar	1.8%	5	6.5%	2	5.9%	2	7.6%	3	8.1%	1
Saudi Arabia	5.2%	2	6.0%	1	2.7%	4	5.0%	3	5.1%	1
United Arab Emirates	9.8%	1	13.2%	2	4.2%	3	7.5%	2	8.3%	1
Algeria	3.7%	3	3.3%	2	2.8%	3	3.6%	2	4.0%	1
Iraq	2.0%	5	1.8%	5	1.5%	5	10.5%	2	6.0%	3
Libya	4.2%	2	6.0%	2	1.2%	6	5.0%	2	5.0%	1
Sudan	3.8%	3	5.1%	2	10.1%	2	3.5%	4	4.7%	2
Jordan	3.2%	4	6.2%	2	6.5%	2	4.5%	3	4.4%	1
Lebanon	2.0%	5	1.1%	6			2.4%	4	0.8%	6
Tunisia	3.5%	3	6.3%	1	2.3%	3	4.2%	2	5.2%	1
Egypt	3.6%	0	6.0%	0	6.4%	2	6.7%	2	6.3%	1
Morocco	2.0%	5	3.6%	1	3.8%	2	3.6%	3	4.7%	1
Syria	4.6%	3	2.8%	3	5.9%	2	5.2%	3	5.9%	1
Comoros	3.5%	1	3.2%	1	3.6%	4	1.1%	8	2.4%	2
Djibouti	2.5%	2	2.0%	3	1.6%	5	1.5%	6	2.7%	2
Mauritania	1.0%	7	3.5%	3	2.5%	5	5.5%	3	4.7%	2
Somalia	0.6%	9	1.2%	6	2.4%	4	1.3%	6	2.8%	3
Oil-rich countries	4.0%	2	6.4%	2	2.3%	5	5.4%	3	5.7%	1
Oil-rich HIC	5.1%	2	6.9%	1	2.4%	5	6.0%	3	6.1%	1
Oil-rich MIC	3.4%	3	3.9%	2	1.9%	4	4.1%	2	4.5%	1
Oil-rich LIC	3.8%	3	5.1%	2	10.1%	2	3.5%	4	4.7%	2
Oil-poor countries	3.0%	3	4.6%	2	5.3%	2	4.1%	3	4.2%	1
Oil-poor HIC	3.0%	4	3.9%	3	2.9%	1	3.2%	3	2.4%	3
Oil-poor MIC	3.2%	3	5.0%	1	5.8%	2	4.9%	2	5.7%	1
Oil-poor LIC	0.9%	7	2.7%	5	2.4%	4	2.4%	5	3.3%	2
Arab countries	3.5%	3	5.7%	2	2.4%	4	5.1%	3	5.1%	1
East Asia & Pacific	4.0%	1	9.7%	1	4.9%	0	8.7%	1	8.7%	1
Europe & Central Asia	1.4%	4	4.0%	2	3.1%	3	3.3%	3	4.2%	1
Latin America & Caribbean	2.6%	2	3.0%	2	3.1%	3	2.7%	3	3.7%	1
South Asia	2.5%	2	6.1%	1	6.2%	2	5.4%	1	6.3%	0
Sub-Saharan Africa	3.0%	4	2.7%	3	2.8%	55	2.8%	4	3.5%	2
Developing region	3.1%	2	6.0%	2	2.9%	6	4.6%	2	5.1%	1

Source: ibid.

Employment and productivity: labour transfer or labour shedding?

Sectoral data on employment for developing countries is notoriously difficult to find. Here, we use an ILO data set that covers employment between 1991 and 2004 for economic sectors. The data are based on the ILO's Global Employment Trends model (GET), which uses various estimation techniques to fill the gaps where official data is not available. Unfortunately, the estimated data provided by GET can differ significantly from the few available data where comparison is possible. The analysis based on these data therefore has to be taken with a grain of salt, even if plausible

Figure 7: Employment and productivity decompositions, 1991-2004



Source: Authors estimates based on ILO's Global Employment Trend model (GET) and National Account, UNSD for output.

Notes: (1) Legend of figure 7.A applies for figures 7.C, D and E.

(2) Arab countries included are same as figure 4.

Figure 7.A presents averages of employment and output shares for each sector of the economy between 1991 and 2004. It is based on employment data from GET and output data from the National Accounts. Where employment shares are larger than output shares, the level of labour productivity is lower than average economy-wide labour productivity. Both agriculture and services fall in this category, whereas industry contributes more to overall output than to employment. Average labour productivity in industry tends to be higher than economy-wide labour productivity. It should be emphasized here that in this aggregation, industry covers manufacturing as well mining and quarrying. The oil sector contribution generates few employment opportunities relative to its output contribution whereas manufacturing employment share is generally commensurate to its output share. Agriculture, on the other hand, employs still a large chunk of labour in LICs and MICs (both oil-rich and oil-poor countries). The MICs show a higher degree of diversification. Overall, the service sector provides most employment.

Figure 7.B compares growth rates of labour productivity and employment. For oil-poor countries and for the oil-rich LICs and MICs, an inverse relation between employment and productivity growth is apparent in manufacturing. The same is true for construction in oil-rich and oil-poor HICs. This signals that either employment growth comes at the expense of

productivity growth – or, alternatively, that productivity growth leads to labour shedding. Manufacturing experienced decent growth in both labour productivity and employment only in high-income oil-rich countries. The sub-regional differences in economy-wide productivity and employment growth rates are thus striking (see annex figures 2). Still, it is easy to conclude from figure 7.B that job creation did not happen simultaneously with labour productivity growth.

Productivity growth can be decomposed into two parts: (1) a direct contribution measured as a weighted average of sectoral rates of productivity growth, where the weights are the output shares; and (2) reallocation effects, which capture the impact of transferring labour among sectors on economy-wide productivity. For example, positive employment growth in sectors with output shares higher than employment shares (and therefore higher than average labour productivity) will increase productivity overall through positive reallocation effects, in line with established theories about dualism in development economics. Figure 7.C and 7.D capture productivity decomposition exercises for the four Arab regions. Direct contribution of industry to overall productivity is negative for all regions but LDCs, while its reallocation effects are positive for all regions. The result suggests a transfer of labour from lower to higher productivity sectors. Although these trends are in line with structuralist and classical views on development, the transfers of labour took place without an expansion in labour productivity.

In other words, labour productivity in these regions is higher in industry than in services or agriculture – but industrial activities appear not sufficiently dynamic to contribute to labour productivity growth beyond these reallocation effects. The opposite occurred in the service sector. It contributed directly to overall productivity, but had negative reallocation effects across all regions. Figure 7.E suggest why the service sector generated net employment in all regions except Maghreb. However, with an overall lower level of productivity of services, the movement of labour into this sector contributes negatively to aggregate labour productivity.

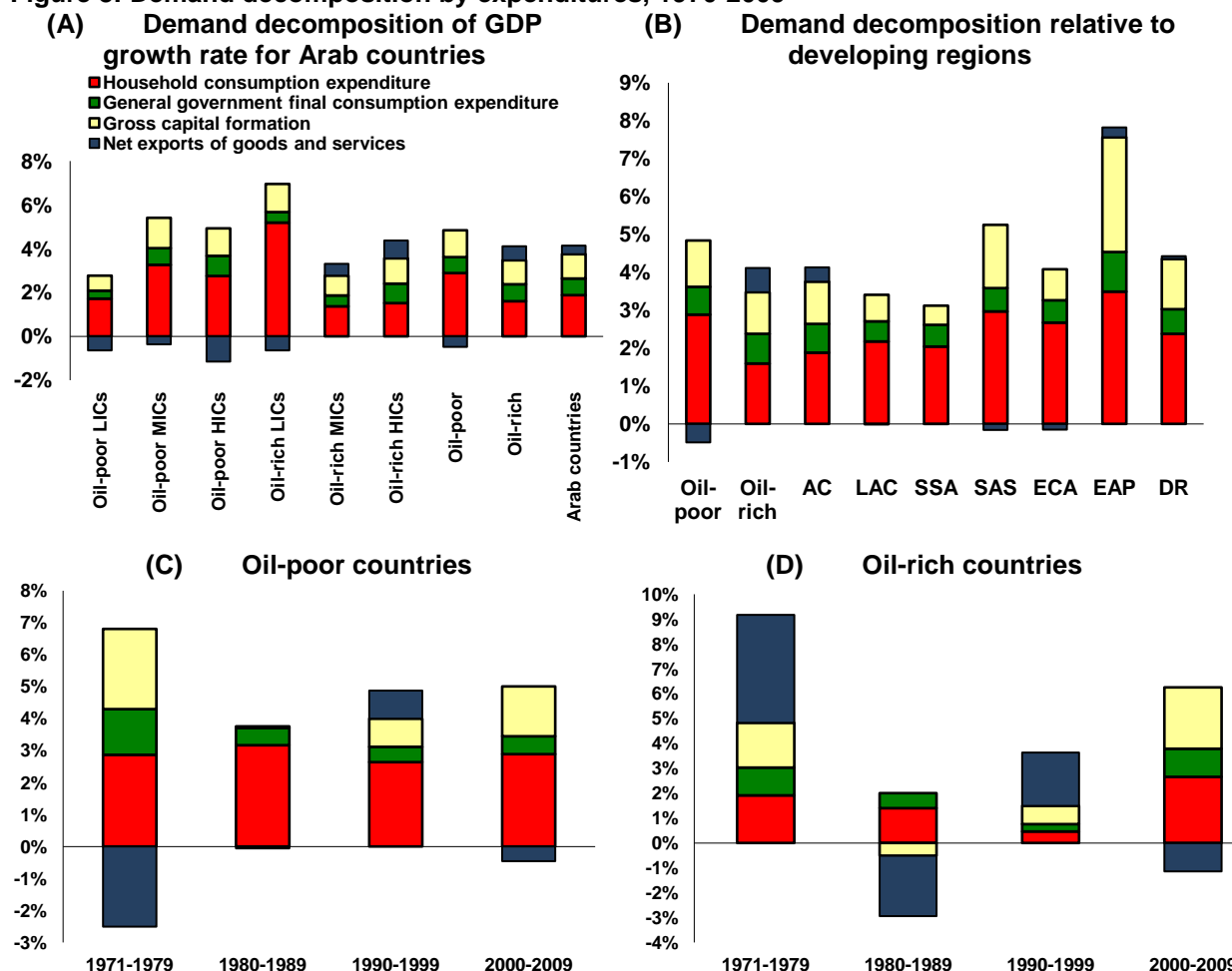
Growth contributions by expenditure

In this section we further discuss the historical evolution of the macro-economies of Arab States. We focus on the contributions to overall GDP of private, public and foreign demand. The analysis is based on two sets of statistics, (1) decompositions of the rate of growth of GDP by expenditure – consumption, public, investment and foreign demand – and (2) net borrowing flows of the private, public and foreign sector. The first method represents GDP growth as a weighted average of growth of demand by institutional sector, the second is introduced here in a bit more detail (see annex figures 1 and 2). Following Taylor (2001) and Vos et.al. (2002), the main economic agents are the private sector, the public sector and the foreign sector. Firms and households form the private sector and make decisions about (residential and business) investment and savings. The difference between gross private investment I and gross private savings S is private net borrowing. In other words, private net borrowing is the flow of debt newly incurred to finance investment plans. Government entities at national and sub-national levels form the public sector and raise revenues through taxation to finance public expenditures. The difference between public expenditures G and revenues T represents the flow of public net borrowing. Obviously, in any given period, the flow of public net borrowing is equal to the public deficit. Lastly, the foreign sector comprises the “rest of the world,” and describes transaction between it and the country under consideration across borders. Hence, the difference between exports E and imports M is foreign net borrowing.

Since the sum of net borrowing flows of the private, public and foreign sector always adds to zero, a surplus in one sector must be offset by a deficit in another sector. Positive net

borrowing implies a deficit, i.e. public or private sector spend in excess of revenues or savings and the foreign sector – the rest of the world – spends in excess of its export revenues on the countries' goods and services. Hence, the country under consideration runs a government or private surplus when public or private net borrowing is *negative* and an external surplus, when foreign net borrowing is *positive*. In the following paragraphs, we discuss data on net borrowing flows for selected countries and sub-groups of the Arab states.

Figure 8: Demand decomposition by expenditures, 1970-2009



Source: Authors estimates based on data from National Account, UNSD

Notes: (1) Legend of figure 8.A applies.

(2) These figures show the contribution of institutional sector demands to GDP growth in Arab countries relative to the same statistics for all developing countries. A positive value indicates strong reliance on the sector's demand contribution; negative values are due to the negative average contribution to growth.

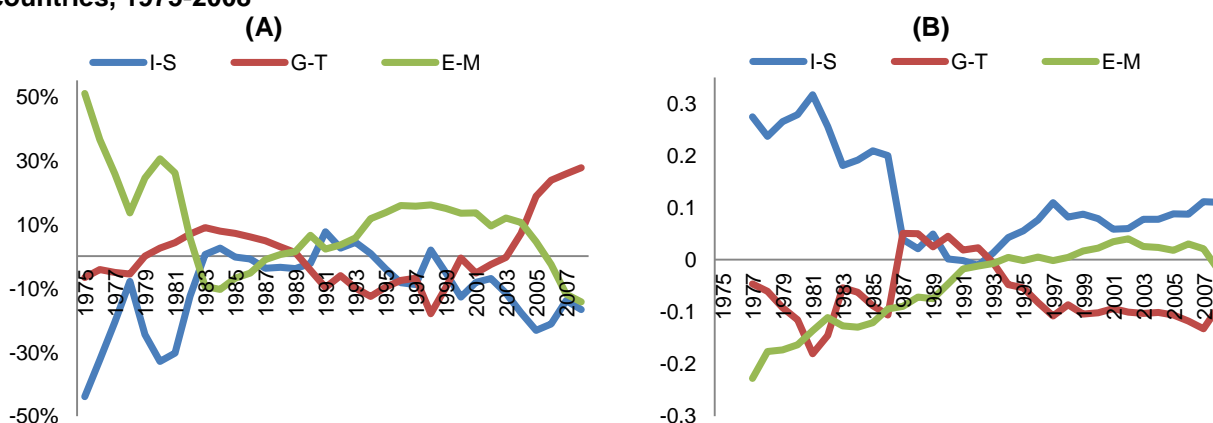
(3) Arab countries included are same as Figure 4

To get started, let us consider two sets of figures. The first set presents net borrowing flows as shares of GDP, for the whole set of countries as well as sub-regions, data permitting. These are Figure 9.A and B. The second set comprises the GDP growth decompositions. These are shown in annex figures NB1 through NB11 and figure 8. The first two report the average annual GDP growth rate between 1971 and 2009 as the total height of each bar and the contribution of each sector – household, government, investment and net exports – as the relative chunk within each bar.

It is immediately obvious from figure 8.B that an important difference between the Arab region and East Asia& the Pacific on the one hand and other developing countries on the

other hand is the importance of foreign demand for growth. Oil-poor countries overall feature a negative contribution from foreign demand; in contrast, oil-rich countries did benefit from net exports. Figure 8.C and 8.D also show that oil-poor countries struggled with sustained external deficits in the decades of 1980s and the 2000s while oil-rich countries sustained deficits in the 1970s and during the past decade.

Figure 9: Net borrowing flows as share of GDP by sector for oil-rich (A) and oil-poor (B) countries, 1975-2008



Source: WDI and UN SNA

Note: Oil-rich countries include: Bahrain, Kuwait, Oman and Saudi Arabia. Oil-poor countries include: Egypt, Morocco, Syria, Jordan and Tunisia.

Summary and Policy Conclusions

The analysis in this paper confirms earlier results in the specialized development literature: over the period since independence, with very few exceptions, the Arab region failed to achieve any semblance of sustained economic growth. Concomitant with that is their failure to effect a meaningful structural transformation.

The evidence corroborates the previous finding that Arab economies tend to have different economic structures than other non-industrial regions. Dutch disease – the negative relationship between the relative size of extractive resource industries and overall GDP growth – appears to hold for the oil-producing regions. Further, exploitation of natural resources crowds out investment and policy interest in developing manufacturing. Oil resources have thus largely retarded structural transformation for the majority of the Arab region.

These results can be easily understood in the broader context of oil-led growth which has created weak structural foundations in Arab economies. Many Arab countries are turning into increasingly import oriented and service-based economies. The types of services found in Arab countries fall at the low end of the value adding chain, contribute little to local knowledge development and lock countries into inferior positions in global markets. This trend, which has been at the expense of Arab agriculture, manufacturing and industrial production, is therefore of concern.

Many of the peculiarities of Arab economies are the result of massive oil wealth which has shaped their economic structure as well as the region's growth performance. As we will see shortly, booms and collapses in oil prices have defined the growth experience in the region.

Still, adverse consequences of high oil price volatility have not been confined to the oil extracting economies. Remittances, export demand and capital flows play a crucial role for the performance of the non oil extracting countries. Certainly, counter-cyclical measures can

support macroeconomic stability even in the face of commodity export dependence. However, such measures have been implemented only recently by several Arab countries, i.e. through the creation of oil-stabilization funds.

The region's reliance on extractive industries has also led to de-industrialization; hence, the inability to take advantage of dynamic returns to scale and technological change. The absence of dynamic industries impedes development of high-skill labour. As long as revenues from oil satisfy needs there are few incentives to invest in high productivity jobs. If, moreover, pay remains commensurate with the (low) level of productivity, the incidence of poverty might increase. Periods of oil-price collapses and strong reliance of low productivity – often informal – service sector jobs underline this issue.

Given the above and excluding the six countries that recorded negative growth rates, the evidence shows that the story of economic transformation in the remaining eleven countries of the region was one of incomplete transformation (mainly due to the influence of resource endowments) and distorted transformation (mainly due to the failure of the modern industrial sector and especially the manufacturing sub-sector, to play its expected role in creating employment). The specialized literature on the development of the region does not have a lot to say about the possible causes of the recorded failure of the transformation process.

One possible conjecture in this respect is that soon after independence the emerging fragile Arab State was bombarded with a litany of development strategies to be pursued. Nine such strategies have now been enumerated, some of them overlapping in terms of chronology: community development, integrated rural development and participatory development (1955-1973); regional integration for industry and national self-sufficiency for food (1960-1979); supply shifters in agriculture (1973-1989); first generation structural adjustment on demand management (1980-1984); second generation structural adjustment on equity with growth (1985-1999); and, sustainable development (1990 to the present).

The proliferation of such strategies, with or without development conditionality, derailed the structural transformation efforts of the emerging Arab State. Significant to note in this respect is that the basic design and mode of implementation of all these paradigms come from outside the Arab region, even though each paradigm undoubtedly has had genuine Arab adherents.

The data discussed in this paper thus support the following stylized facts:

First, the structure of the Arab economies differs substantially from the structure of other developing countries and regions. Well beyond the borders of GCC, heavy sectoral weights of extractive industries lead to dependence on global oil prices. Since tertiary activities often support oil production, strong linkages between (mining) industry and services amplify this dependence. Further, high capital intensity of extractive industries limits the generation of high-skill and well-paid jobs. Low-skill services and informal activities then absorb the labour force, with the corresponding negative effects on aggregate productivity and living standards.

Second, global conditions determine domestic economic performance. The past four decades featured two distinct periods of relatively cheap access to external finance. During the 1970s and during these past ten years, high oil prices, the associated recycling of external surpluses and (in this decade) a global growth boom facilitated expansion of private activity in both oil-rich and oil-poor countries. For the former, oil revenues finance growth; for the latter, external debt and service exports does. Clearly, levels of oil prices are related to the first point above. But especially for oil-poor countries in the region, the pattern of dependence on “easy” tourism receipts and other transfers and the related deficits further emphasizes lack of industrial competitiveness.

Indeed and third, the still lacking or slow emergence of manufacturing and resulting export capacities distinguish the economies of the Arab region from other developing countries. Compared to suitable aggregates, or, more poignantly, the successful Asian emerging economies, manufacturing exports do not contribute sufficiently to growth.

Endnotes

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²Meier 2001.

³Meier (2001: 14-15). Classical examples of development ideas and concepts based on visionary models of development include the “vicious circle of poverty”, the “big push”, the “critical minimum effort” and the “low-level equilibrium trap”. Almost all of these are currently being rediscovered albeit in mathematical formulation. See also Meier 2005.

⁴Abdel-Gadir 2010

⁵Lewis 1954

⁶ For a most recent deployment of such a concept of structural transformation see UNCTAD 2010

⁷The data used for the GDP shares of the various sectors is from the National Accounts Main Aggregates Database of the UN DESA Statistical Division (<http://unstats.un.org/unsd>) as compiled and reported by UNCTAD.

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APPENDIX

Appendix A: Decomposition of valued added by broad sectors

Aggregate value added is calculated by summing value added across sectors:

$$X = \sum_{i=1}^n X_i \quad (\text{A.1})$$

Total differentiation of (A.1) with respect to time allows us to write the growth rate of value added as a weighted average of sectoral growth rates in value-added:

$$\hat{X} = \sum_{i=1}^n \theta_i \hat{X}_i, \quad (\text{A.2})$$

(A.2) allows us to identify the sectors that have contributed most to growth in overall value added. The sectoral contribution to growth is dependent not only on own sector's growth performance but also on the weight of the sector in overall economy.

Two additional decompositions investigate changes in sectoral labour productivity and employment generation. These complement the story on structural transformation and economic performance. The following draws on decompositions proposed by Taylor and Berg, chapter 1 in Taylor (2001), and Taylor and Rada (2006). Let employment shares be defined by $\epsilon_i = L_i/L$ with $\sum L_i = L$. The level of sectoral labour productivity is X_i/X . The (i) (exact) growth rate of labour productivity is

$$\xi_i = (1 + \hat{L}_i)^{-1} (\hat{X}_i - \hat{L}_i) \quad (\text{A.3})$$

After a bit of manipulation, an exact expression for the rate of growth of economy-wide labour productivity emerges as

$$\xi_i = (1 + \hat{L}_i)^{-1} \sum [v_i (\hat{X}_i - \hat{L}_i) + \hat{L}_i (v_i - \epsilon_i)] \quad (\text{A.4})$$

Aside from the interaction term $(1 + \hat{L}_i)^{-1}$, aggregate labour productivity decomposes into two parts. One is a weighted average $\sum [v_i (\hat{X}_i - \hat{L}_i)]$ of sectoral rates of productivity growth as conventionally measured. The weights are the output shares. The other term, $\sum [\hat{L}_i (v_i - \epsilon_i)]$, captures "reallocation effects." If $(v_i - \epsilon_i) > 0$ in any sector, it has a bigger share in output than employment, implying that it has relatively high average productivity. Positive employment growth in that sector (or a negative employment growth in a sector with $(v_i - \epsilon_i) < 0$) will increase productivity overall.

Turning to employment generation, a fundamental insight is that if a sector creates jobs over time, then (if interaction terms are ignored) its growth rate of output per capita must exceed its growth rate of labour productivity. To see the details we can start with the identity

$$\phi = \frac{L}{P} = \sum \left(\frac{L_i}{X_i} \right) \left(\frac{X_i}{P} \right) \quad (\text{A.5})$$

in which P is the population at time zero. After grinding, the growth rate of ϕ can be expressed as

$$\hat{\phi} = \sum \epsilon_i (\chi_i - \xi_i) \quad (\text{A.6})$$

The growth rate of the employment/population ratio is a weighted average of differences between sectoral growth rates of output per capita χ_i and productivity ξ_i . Sectors with higher shares of total employment contribute more strongly to the average. One might expect that $(\chi_i - \xi_i) > 0$ in a "dynamic" sector, with the inequality reversed in one that is "declining" or just "mature."

Finally, it is interesting to look at structural changes over time with respect to sectoral contribution to value added. To this end we use a simple scatter plot of average sectoral shares in value added and annual growth rate of GDP per capita.

Data for the decomposition of value added by broad sectors is available from various sources. We chose the UN National Accounts available at <http://unstats.un.org/unsd/snaama/dnlList.asp>. The data covers the period from 1970 to 2008 in 1990 constant US dollars. Value added is disaggregated by broad sectors according

to ISIC classification in the following sectors: Agriculture, hunting, forestry, fishing (ISIC A-B); Mining, Manufacturing, Utilities (ISIC C-E); Manufacturing (ISIC D); Construction (ISIC F); Wholesale, retail trade, restaurants and hotels (ISIC G-H); Transport, storage and communication (ISIC I); and Other Activities (ISIC J-P).

In order to perform the second decomposition described above we need employment by sectors. Sectoral data on employment for developing countries is generally very poor. The ILO Global Employment Trends (GET) database combines several estimation techniques and fills in the data gap for the years when official data is not available. The GET database covers the three main sectors: agriculture, industry and services.

Appendix B: Net borrowing and demand by type of expenditure

Private sector, government and the rest of the world form the institutional sectors of an economy. Aggregate demand has significant implications for overall output and disaggregating its effects by these institutional sectors can shed light on which sectors have been contributing to demand in the Arab regions.

The disaggregation of demand by net borrowing flows satisfies the macroeconomic balance equation:

$$I - S + G - T + E - M = 0 \quad (A.7)$$

The demand decomposition by institutional sectors requires two sets of data. First we need aggregate demand disaggregated by main institutional sectors or private investment, government expenditures and exports. These data is available for the period 1970 to 2008 from the UN National Accounts database mentioned above. To calculate the leakage parameters we need data on the volume of imports, tax revenues net of subsidies and transfers and the private saving rate. The import propensity can be easily calculated since we have data on imports and aggregate supply from UN SNA.

Growth of GDP can further be decomposed into the contributions of expenditures. Analogy to the decomposition of growth of value added by sectors, the rate of growth of real GDP follows as a weighted average of the growth rates of household, investment, government and foreign expenditures:

$$\hat{X} = \sum_{i=1}^n \eta_i \hat{e}_i , \quad (A.8).$$

ANNEX TABLES

Table 1: Distribution of Arab countries versus rest of the world according to volatility (Standard deviation) and Average annual real per capita GDP rates of growth for the periods 1970-75, 1976-80, 1986-90, 1991-95, 1996-00, 2001-05, 2006-09 and 1970-09

Country/ Region	1970-75		1976-80		1981-85		1986-90		1991-95		1996-00		2001-05		2006-09		1970-09	
	AAGR	STDEV	AAGR	STDEV	AAGR	STDEV	AAGR	STDEV	AAGR	STDEV	AAGR	STDEV	AAGR	STDEV	AAGR	STDEV	AAGR	STDEV
Algeria	1.7	11.8	3.4	4.0	1.8	1.3	-1.9	2.5	-1.4	2.7	1.1	2.2	3.2	2.0	-1.5	4.9	0.9	4.9
Bahrain	0.8	8.8	0.7	11.0	-6.2	9.8	0.7	3.3	2.0	3.1	1.8	1.2	4.4	4.9	4.5	5.7	1.1	7.1
Comoros	2.0	2.0	1.8	3.4	1.2	1.3	-1.6	1.6	-1.3	3.7	-0.1	2.0	0.4	1.8	-1.4	0.3	0.0	2.4
Djibouti	-2.1	5.5	-10.5	8.7	-2.7	1.8	-5.1	4.7	1.7	5.5	-1.5	3.0	1.1	0.9	3.7	0.8	-2.3	5.4
Egypt	2.0	3.9	5.0	3.4	5.4	4.8	2.5	1.5	2.5	1.0	3.0	0.8	2.9	1.5	1.1	6.2	3.6	3.4
Jordan	-4.2	3.8	10.3	4.7	-2.2	7.5	-5.7	6.8	1.7	4.8	1.0	1.1	4.6	2.6	1.3	3.3	1.2	6.3
KSA	14.3	12.5	-0.4	5.1	-11.5	5.9	-1.8	5.1	-1.0	4.0	-0.7	2.3	2.7	3.9	-0.1	2.8	0.6	8.4
Kuwait	-10.3	8.5	-7.0	11.5	-5.0	11.0	-2.1	13.7	28.6	38.9	-4.9	4.3	6.3	7.6	0.2	3.4	-2.3	17.0
Lebanon	-3.6	16.3	19.2	51.4	8.2	30.3	-12.8	27.8	3.4	13.4	-1.4	4.7	2.1	4.1	7.5	4.3	0.2	23.3
Libya	2.0	11.2	-0.1	9.3	-3.6	9.4	-1.4	11.2	-2.0	7.0	-1.3	2.6	4.3	5.2	0.0	3.7	-0.4	8.2
Morocco	2.3	2.7	1.9	4.2	2.0	3.7	1.6	5.8	-2.2	7.6	0.9	5.6	3.5	1.2	-0.7	6.3	1.9	4.7
Oman	4.6	18.2	5.7	6.8	8.1	3.6	-0.5	3.6	3.0	2.5	2.1	5.3	0.8	1.5	5.2	2.7	3.5	7.6
Qatar	0.7	2.4	-3.7	4.4	-10.5	7.3	-1.2	4.1	1.0	3.5	8.9	9.3	0.6	6.6	7.3	6.2	0.0	7.3
Sudan	2.2	9.4	-3.1	6.7	-9.3	12.1	1.9	4.9	4.2	5.5	4.5	3.2	3.6	3.1	5.0	2.5	1.7	7.2
Syria	9.8	13.1	1.0	5.0	-3.7	9.5	-3.1	8.8	5.0	2.3	-0.1	5.3	1.9	3.4	1.8	1.8	2.2	7.6
Tunisia	6.2	6.3	2.3	1.8	1.7	4.9	3.4	6.8	3.0	3.4	3.8	0.3	2.9	3.4	3.1	2.1	3.2	4.2
UAE	-4.7	2.3	1.9	11.4	-8.7	5.2	2.4	13.7	-0.7	4.1	0.8	4.0	6.2	7.7	1.2	5.3	-1.2	8.0
AC	3.1	8.4	2.5	8.7	-0.3	7.8	0.4	6.2	1.6	5.7	1.9	3.2	3.1	2.9	1.3	4.8	2.0	6.6
EAP	3.5	2.6	6.3	4.3	8.0	3.4	5.2	3.4	9.7	2.0	5.3	2.3	7.9	1.2	8.2	2.3	6.3	3.8
ECA	5.6	1.4	1.2	3.5	2.8	1.7	1.3	4.4	1.8	6.7	1.1	4.8	6.0	4.6	0.1	5.4	2.4	4.7
LAC	4.2	2.9	3.0	2.9	-1.1	4.5	-0.5	4.0	1.5	3.4	1.2	2.3	2.0	2.9	1.8	3.5	1.6	4.1
SAS	0.0	4.0	1.3	4.4	2.6	1.6	3.8	2.0	3.7	2.9	3.0	1.4	5.4	2.7	5.3	1.9	2.9	3.3
SSA	1.2	4.3	-1.2	4.8	-1.6	4.3	-0.1	4.7	-2.1	3.6	0.2	2.7	4.0	5.0	2.6	2.0	0.2	5.3
DR	2.4	3.5	3.5	4.4	4.0	3.2	3.4	3.3	5.4	2.9	3.4	2.2	5.9	2.4	5.6	2.5	3.9	4.0

Source: Authors' estimates based on data from National Account, UNSD

Table 2: Distribution of Arab countries versus rest of the world according to volatility (Standard deviation) and Average annual growth rate Agriculture Sector growth rates for the periods 1970-75, 1976-80, 1986-90, 1991-95, 1996-00, 2001-05, 2006-09 and 1970-09

Country/ Region	1970-75		1976-80		1981-85		1986-90		1991-95		1996-00		2001-05		2006-09		1970-09	
	AAGR	STDEV	AAGR	STDEV	AAGR	STDEV	AAGR	STDEV	AAGR	STDEV	AAGR	STDEV	AAGR	STDEV	AAGR	STDEV	AAGR	STDEV
Algeria	3.6	25.2	7.4	10.6	3.1	9.3	4.2	11.7	1.3	10.9	-1.5	14.5	5.6	8.8	2.2	5.6	3.7	12.2
Bahrain	7.0	5.8	1.1	13.9	-1.6	7.3	-2.0	9.9	10.0	8.9	-1.3	6.5	1.8	3.8	10.6	15.4	3.1	9.0
Comoros	4.7	2.2	6.2	3.8	4.5	0.9	3.3	0.6	0.1	7.0	6.5	6.0	3.2	2.1	0.9	0.3	3.5	3.7
Djibouti	0.9	12.8	-0.7	10.9	3.1	2.7	1.7	4.2	2.6	7.1	1.8	2.3	3.2	0.3	5.5	1.2	2.5	6.3
Egypt	3.3	1.8	2.1	3.3	3.7	0.4	3.3	0.5	3.1	0.7	3.6	0.1	5.0	1.4	5.6	1.3	3.6	1.8
Jordan	-2.2	43.3	6.3	13.0	2.9	10.1	9.2	25.1	-3.1	20.4	-6.3	16.5	11.7	9.9	6.0	9.2	3.2	20.2
KSA	0.0	11.9	2.0	11.3	18.2	34.4	1.5	24.3	11.2	60.3	4.4	7.3	4.7	10.6	0.9	16.4	4.7	26.9
Kuwait	-1.0	20.4	19.3	46.2	9.6	32.2	-11.6	29.6	18.0	19.2	2.3	3.6	1.2	1.5	4.8	9.7	2.0	24.1
Lebanon	8.7	13.2	5.8	14.2	4.0	8.8	0.5	10.7	0.7	5.8	1.8	3.5	4.9	1.7	3.0	3.5	4.2	8.8
Libya	-1.4	7.6	1.9	12.4	10.4	24.6	-0.1	25.2	-14.1	43.5	-8.3	42.9	4.1	13.6	-3.6	19.7	2.0	24.7
Morocco	-22.4	29.4	10.9	32.1	6.8	2.7	8.1	3.9	7.9	5.5	4.1	5.0	-0.4	3.8	5.8	7.3	1.0	16.8
Oman	9.1	2.4	7.9	29.1	2.7	2.6	-1.7	6.6	2.6	25.1	-3.0	11.7	-4.3	13.6	1.1	5.5	1.8	14.9
Qatar	5.5	1.0	7.7	27.0	13.2	6.4	9.1	5.6	2.0	3.1	2.5	1.7	1.6	1.0	1.1	0.7	5.2	10.2
Sudan	3.4	6.1	-4.2	10.9	-9.4	17.3	0.4	21.6	8.3	11.8	12.0	5.1	1.4	4.4	5.3	2.6	3.8	11.8
Syria	12.0	42.2	6.5	24.1	-1.6	5.7	-0.7	25.1	6.8	6.7	2.5	14.8	2.6	5.5	-3.1	14.0	4.6	20.0
Tunisia	11.0	14.8	-0.1	8.2	5.1	10.7	6.4	28.7	-5.1	10.5	2.9	12.8	2.8	13.6	2.6	2.5	3.5	13.9
UAE	10.5	11.1	14.6	7.5	10.6	6.7	5.0	7.5	14.3	10.4	14.8	6.4	-0.4	8.9	1.8	4.5	9.8	9.9
AC	3.6	11.2	6.2	18.0	9.9	14.9	3.8	13.4	4.2	16.0	2.6	7.1	2.6	5.0	1.7	5.2	4.7	13.3
EAP	3.6	4.0	2.5	3.7	5.4	3.1	3.7	2.5	3.0	2.2	2.3	2.3	3.8	2.0	5.2	3.7	3.7	3.6
ECA	2.8	7.1	0.3	5.9	0.9	3.9	3.5	10.5	0.9	6.3	-0.3	8.2	2.5	9.9	0.3	8.9	1.4	7.9
LAC	3.3	3.9	3.9	4.7	2.1	4.2	2.1	5.8	2.9	3.0	2.4	2.6	2.7	3.4	0.9	5.3	2.6	4.2
SAS	1.5	6.8	2.5	8.9	2.5	4.9	4.5	6.6	3.3	4.0	1.4	4.6	2.3	6.1	2.4	2.8	2.5	5.7
SSA	3.0	12.0	2.5	6.5	1.0	12.2	2.9	6.8	-2.3	14.2	2.9	8.1	5.3	7.6	4.1	5.3	2.5	10.6
DR	3.2	6.1	3.5	6.9	3.6	6.0	3.0	6.6	2.5	5.7	2.1	4.1	3.1	4.3	2.2	4.8	3.0	6.0

Source: ibid

Table 3: Distribution of Arab countries versus rest of the world according to volatility (Standard deviation) and Average annual growth rate Manufacturing Sector for the periods 1970-75, 1976-80, 1986-90, 1991-95, 1996-00, 2001-05, 2006-09 and 1970-09

Country/ Region	1970-75		1976-80		1981-85		1986-90		1991-95		1996-00		2001-05		2006-09		1970-09	
	AAGR	STDEV	AAGR	STDEV	AAGR	STDEV	AAGR	STDEV	AAGR	STDEV	AAGR	STDEV	AAGR	STDEV	AAGR	STDEV	AAGR	STDEV
Algeria	7.6	18.6	8.7	4.2	7.5	3.7	-0.8	4.2	-3.2	2.2	1.7	6.4	2.4	0.6	2.4	1.4	3.3	8.1
Bahrain	10.9	15.8	12.0	21.3	11.2	13.1	5.2	7.4	11.3	8.6	3.6	2.4	11.9	8.8	4.1	6.8	7.0	11.4
Comoros	4.7	2.2	6.3	3.9	4.6	2.0	4.2	2.2	3.8	5.1	2.3	6.8	1.4	1.8	0.9	0.3	3.3	3.7
Djibouti	3.8	8.8	6.5	14.2	6.1	6.6	-2.6	9.4	-3.4	4.6	0.6	4.3	3.0	0.3	5.3	1.5	2.1	7.7
Egypt	3.6	4.0	6.1	2.2	9.6	2.2	6.9	0.7	5.6	2.8	7.4	1.9	4.3	1.7	5.6	1.4	6.2	2.9
Jordan	-0.8	22.7	18.5	17.3	4.5	8.7	3.6	12.9	13.0	15.8	9.0	7.5	11.8	7.2	6.9	4.3	6.4	12.9
KSA	14.1	7.5	3.4	7.1	2.4	5.8	3.3	7.7	14.3	26.0	-1.8	6.2	15.0	12.6	1.6	7.0	3.8	12.0
Kuwait	-1.0	17.7	10.2	33.6	7.8	30.2	-11.6	29.8	4.7	17.3	1.3	6.5	1.9	2.4	7.4	8.5	1.2	20.5
Lebanon	2.6	17.2	19.3	16.1	14.9	6.5	0.6	10.7	2.3	8.3	1.0	5.3	8.0	7.3	3.1	3.9	6.1	12.2
Libya	6.2	3.5	4.6	2.1	5.2	2.0	4.9	5.1	2.3	2.0	2.8	0.5	2.8	1.2	0.7	3.8	3.7	3.0
Morocco	19.4	25.3	33.2	32.1	34.1	17.5	8.3	7.5	10.9	7.7	15.8	29.5	6.8	16.0	8.9	5.4	16.4	21.1
Oman	5.1	12.1	14.7	24.5	10.3	7.6	5.5	8.9	-4.6	13.9	8.3	16.3	9.2	3.2	-2.6	9.3	6.7	14.3
Qatar	8.0	9.9	8.3	1.9	9.6	1.8	2.0	2.8	4.9	2.5	4.0	4.6	6.1	1.7	4.5	2.1	6.1	4.6
Sudan	2.4	11.9	3.1	5.6	2.5	8.8	2.5	12.1	3.8	15.6	6.2	18.9	4.9	8.6	6.3	1.3	5.2	11.2
Syria	6.2	8.9	4.5	14.2	13.2	47.6	0.9	43.1	14.7	4.2	-45.0	46.9	20.3	69.7	15.8	6.1	2.9	38.8
Tunisia	12.6	13.1	9.3	7.4	6.2	2.1	2.7	5.0	6.1	1.9	6.0	1.9	2.2	2.6	1.6	5.7	6.5	6.8
UAE	-0.9	36.2	56.3	65.5	4.3	39.2	3.9	10.9	12.4	9.8	16.7	11.1	13.1	10.1	5.5	9.5	13.5	34.1
AC	7.4	12.7	11.0	11.6	7.7	8.6	1.8	7.6	5.6	8.0	3.1	7.0	7.5	5.8	4.0	3.9	6.0	10.2
EAP	9.6	4.9	11.6	6.4	8.7	6.3	9.5	4.3	12.3	2.9	5.8	4.6	8.3	2.6	6.7	3.6	8.8	5.8
ECA	10.2	2.1	2.3	5.1	4.6	3.5	2.5	6.3	1.8	9.2	1.9	7.8	7.4	5.9	0.4	6.5	4.0	7.2
LAC	7.0	3.9	5.3	4.0	0.7	6.7	1.0	6.3	2.9	4.7	2.5	4.4	2.8	5.0	0.8	5.1	3.0	6.0
SAS	3.2	5.6	4.6	6.5	6.6	2.6	7.5	2.7	8.3	6.5	4.2	3.0	8.0	3.4	6.7	4.7	6.1	5.4
SSA	6.7	5.7	3.4	7.0	0.0	10.2	2.8	6.2	-0.8	6.7	1.9	8.6	4.7	7.5	2.4	5.3	2.9	9.4
DR	7.3	5.4	6.6	6.1	3.7	6.5	3.4	5.6	4.9	5.4	3.2	5.2	5.5	4.5	3.0	4.6	4.9	6.7

Source: ibid

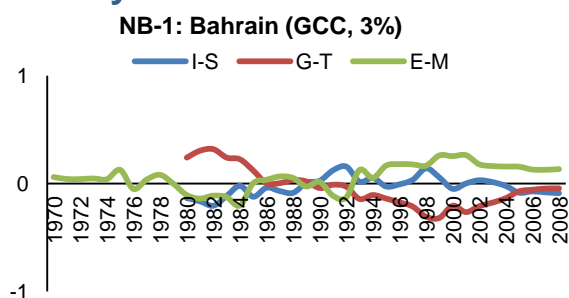
Table 4: Distribution of Arab countries versus rest of the world according to volatility (Standard deviation) and Average annual growth rate Services Sector for the periods 1970-75, 1976-80, 1986-90, 1991-95, 1996-00, 2001-05, 2006-09 and 1970-09

Country/ Region	1970-75		1976-80		1981-85		1986-90		1991-95		1996-00		2001-05		2006-09		1970-09	
	AAGR	STDEV	AAGR	STDEV	AAGR	STDEV	AAGR	STDEV	AAGR	STDEV	AAGR	STDEV	AAGR	STDEV	AAGR	STDEV	AAGR	STDEV
Algeria	5.6	0.3	8.5	6.2	5.5	1.5	1.2	3.3	1.9	3.1	2.3	1.2	5.3	1.4	4.4	5.8	4.0	4.0
Bahrain	3.5	12.9	8.0	18.5	10.7	13.2	1.6	6.5	3.9	3.2	3.6	2.4	9.3	5.6	4.9	4.6	6.1	10.3
Comoros	4.7	2.2	5.8	3.5	4.4	2.1	1.6	3.4	-0.5	6.9	-1.8	4.4	4.4	5.0	0.9	0.3	2.4	4.3
Djibouti	3.8	5.8	-3.7	8.7	-0.3	6.9	3.3	2.5	4.7	4.7	1.8	2.1	2.9	1.2	5.0	4.9	2.7	5.2
Egypt	4.4	3.5	9.4	2.9	7.7	6.6	6.7	2.6	4.1	1.5	4.9	1.3	4.6	1.7	5.6	1.4	6.3	3.8
Jordan	-0.6	6.3	12.4	6.0	1.9	7.7	-2.6	8.1	5.7	2.4	4.0	0.6	6.4	2.5	5.9	2.2	4.4	5.9
KSA	7.9	5.8	11.0	8.2	1.1	5.5	2.2	4.7	16.5	41.3	4.4	6.7	10.9	3.0	11.5	18.4	5.7	15.7
Kuwait	-2.4	17.0	20.2	55.2	8.8	31.1	-11.6	29.7	-2.7	21.5	6.0	5.0	0.8	8.4	7.4	2.8	0.8	25.3
Lebanon	6.6	11.3	15.5	4.7	0.6	7.6	0.6	10.7	0.6	6.0	1.2	2.7	7.9	3.1	6.6	1.2	5.0	7.7
Libya	6.3	3.3	5.3	4.1	5.7	2.6	5.6	1.3	2.8	2.3	3.8	2.3	4.7	1.5	1.5	6.1	4.8	3.2
Morocco	24.5	27.8	21.3	9.5	12.6	3.0	3.2	4.6	6.3	1.8	2.8	2.9	6.7	1.3	8.2	4.8	10.2	12.7
Oman	6.8	9.2	14.9	20.3	-0.6	12.6	2.2	2.2	3.9	2.1	5.1	3.0	9.1	10.4	22.1	4.6	8.1	11.5
Qatar	19.5	11.8	7.7	3.0	2.3	5.1	0.6	3.3	1.5	2.5	3.8	1.3	3.9	0.7	3.8	0.5	5.1	7.5
Sudan	6.6	11.5	1.8	10.5	-5.0	10.9	7.2	6.8	3.8	3.8	1.6	1.9	8.5	3.4	8.0	5.0	4.7	7.7
Syria	13.6	8.4	6.6	2.4	0.6	7.0	-0.8	9.3	7.9	2.8	2.5	1.7	8.6	3.8	11.2	5.4	6.0	7.0
Tunisia	4.4	9.6	6.2	3.4	3.7	2.5	4.2	4.2	5.7	2.3	6.2	0.6	6.2	1.3	6.2	1.3	5.3	3.9
UAE	9.6	12.4	11.9	16.2	2.4	9.5	3.3	3.4	9.3	2.9	6.6	1.2	9.5	2.9	7.2	0.8	8.3	8.6
AC	9.5	8.5	10.1	9.5	3.0	7.1	1.2	5.6	4.3	8.9	3.8	2.2	6.1	2.1	6.0	3.7	5.4	8.2
EAP	8.3	4.8	11.9	5.7	10.3	4.8	8.0	4.7	9.5	2.1	4.8	3.2	7.9	1.0	7.8	1.8	8.2	4.7
ECA	6.1	0.7	3.1	3.9	3.0	1.3	3.5	3.7	2.7	2.8	2.9	2.4	5.5	4.9	4.1	3.0	4.1	3.8
LAC	7.0	2.5	5.3	2.3	2.0	3.1	1.9	2.8	3.1	2.2	2.4	1.7	3.4	2.0	2.7	3.0	3.7	3.4
SAS	3.5	1.9	4.6	1.4	6.4	1.7	6.5	1.6	5.7	1.7	7.9	2.9	7.0	2.1	8.5	2.6	6.1	2.6
SSA	5.1	3.7	1.0	4.1	2.3	6.2	4.2	3.8	0.9	3.0	2.7	2.4	4.5	3.3	5.2	2.1	3.6	4.8
DR	7.1	3.6	6.3	4.1	3.9	3.9	3.5	3.7	4.4	3.1	3.6	2.4	5.2	2.1	5.0	2.7	5.1	4.4

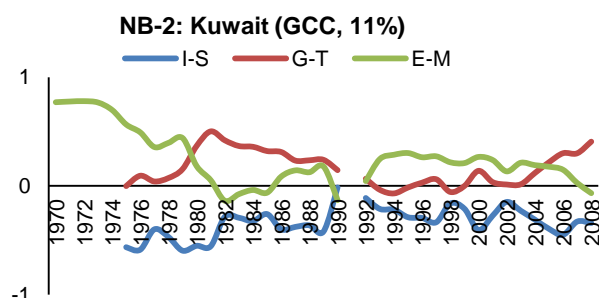
Source: ibid

ANNEX FIGURES

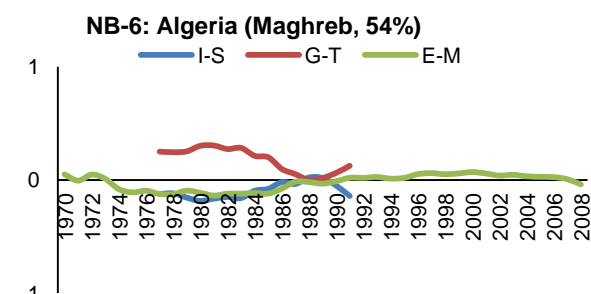
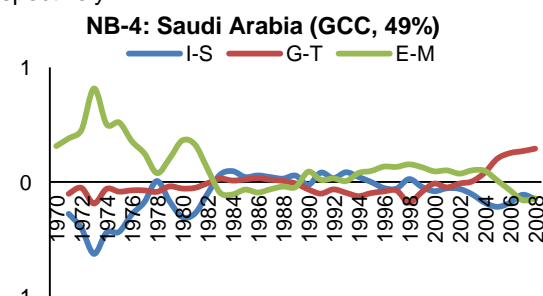
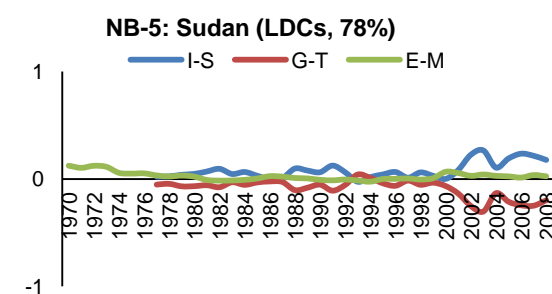
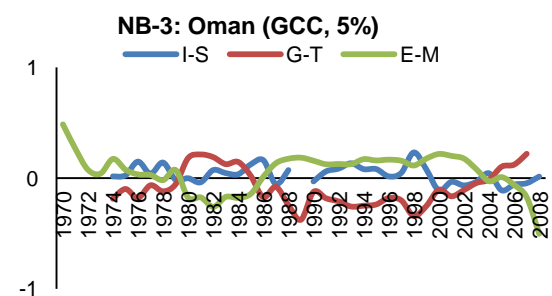
Net borrowing flows (NB) as a share of GDP by sector, 1970-2008: Country level



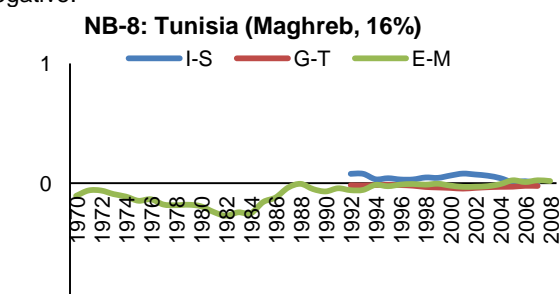
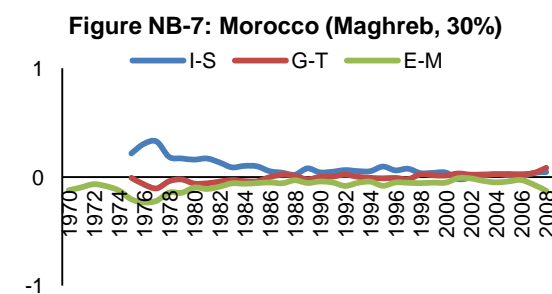
Notes: Residual taxes between 1980 and 1984 are negative.



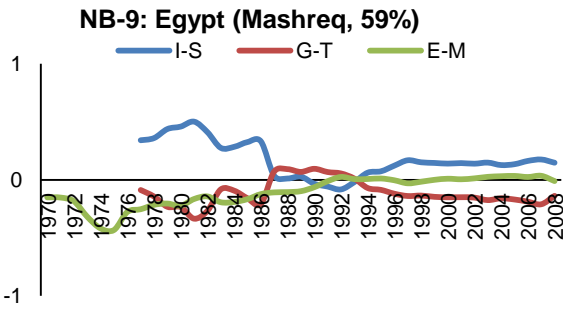
Notes: Residual taxes between 1976 and 1989 are negative. The savings rate (WB) of 1991 is negative; the war year values are 276%, -85% and -192%, respectively.



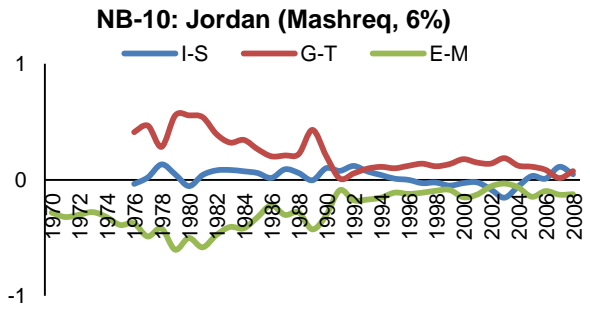
Notes: Residual taxes between 1977 and 1985 are negative.



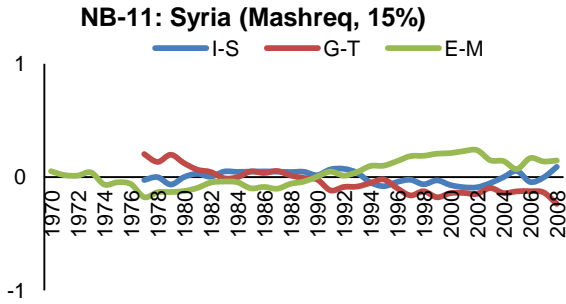
Notes: For Tunisia, taxes are government revenue (production and import taxes less subsidies, plus product taxes) from UN SNA Table 4.1. Private saving is calculated residually.



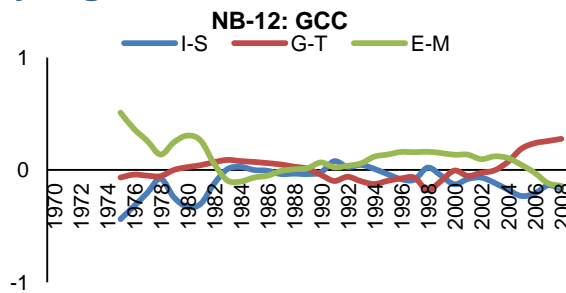
Notes: Residual taxes are negative in 1988 and 1990.



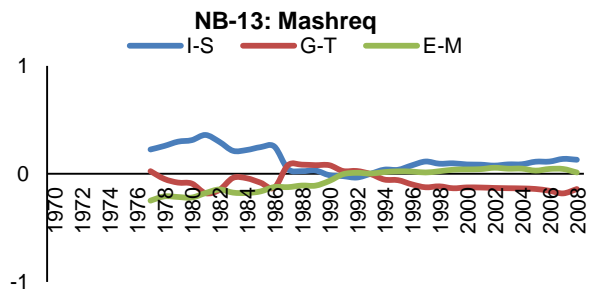
Notes: Residual taxes are intermittently negative between 1976 and 1989.



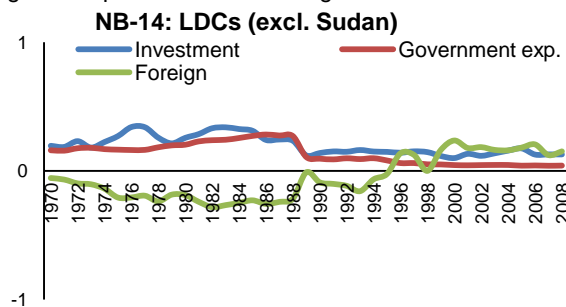
By regions



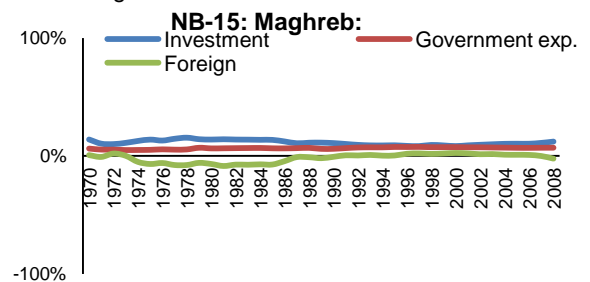
Notes: This chart shows the GDP-weighted net borrowing flows of private, public and foreign sector for Bahrain, Kuwait, Oman and Saudi Arabia, which together represent 67% of in-region GDP in 2008.



Notes: This chart shows the GDP-weighted net borrowing flows of private, public and foreign sector for Egypt, Jordan and Syria, which together represent 80% of in-region GDP in 2008.

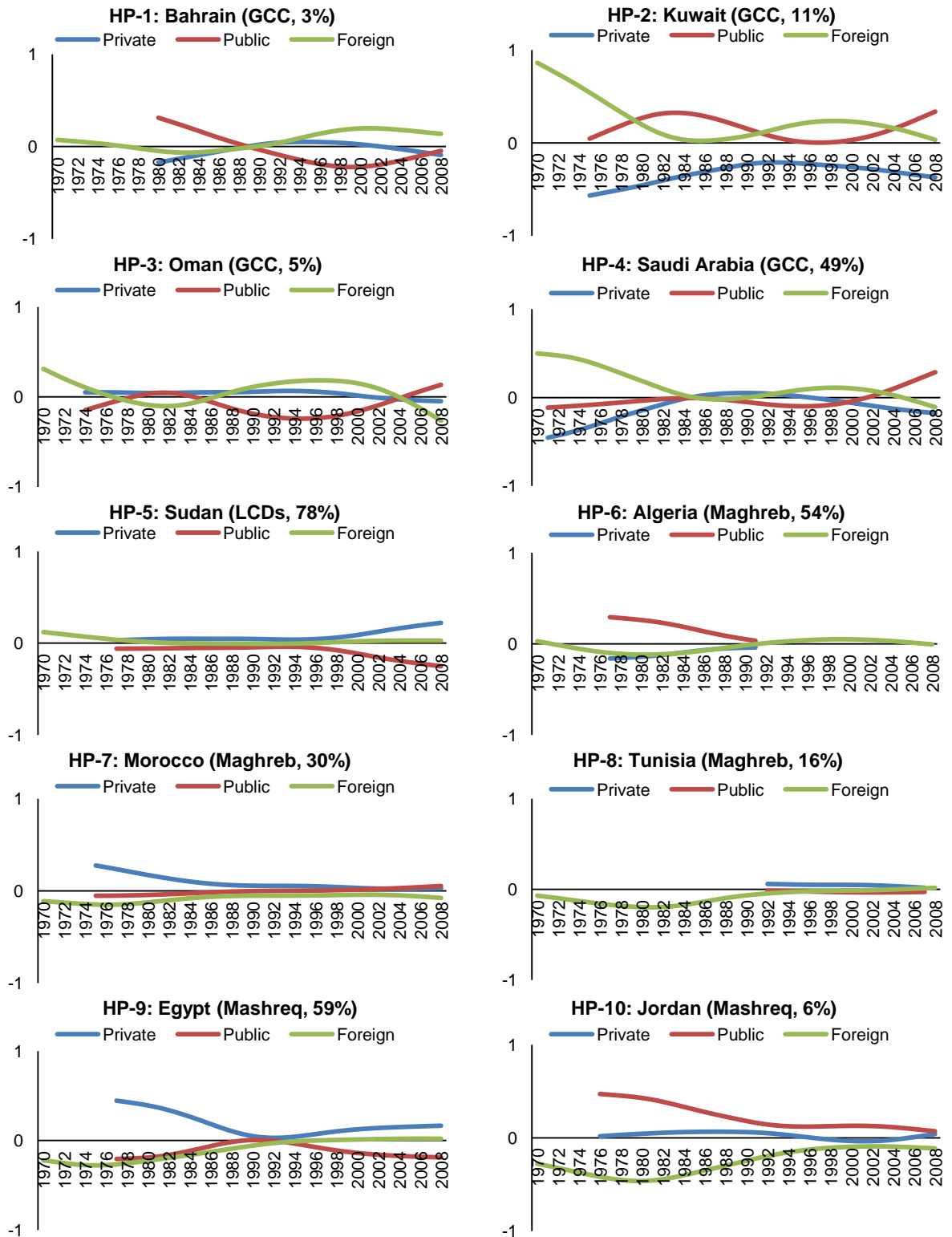


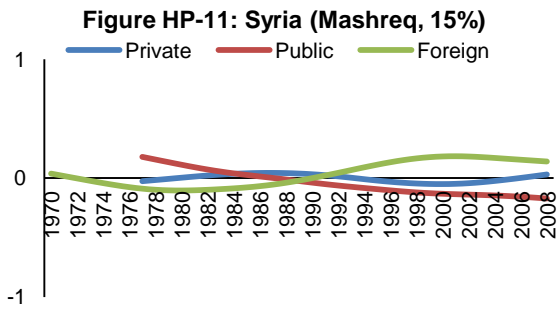
Notes: The chart shows foreign balance and investment and government expenditures relative to GDP for Comoros, Djibouti, Mauritania, Somalia and Yemen -- in other words, LDCs excl. Sudan. Before 1989, data for Yemen is for *Democratic Yemen*.



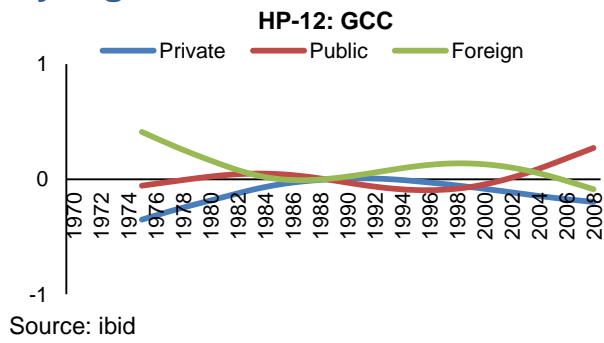
Source: World Bank and UN SNA

Net borrowing flows: Hodrick-Prescott Filter cycles (HP), country level, 1970-2008

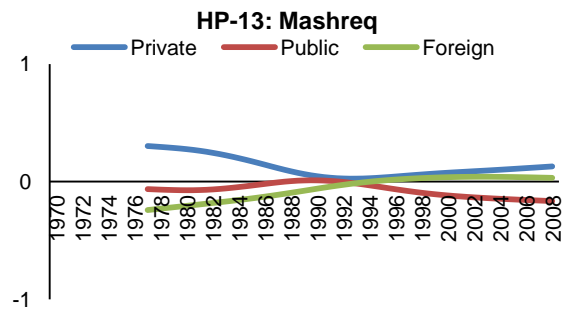




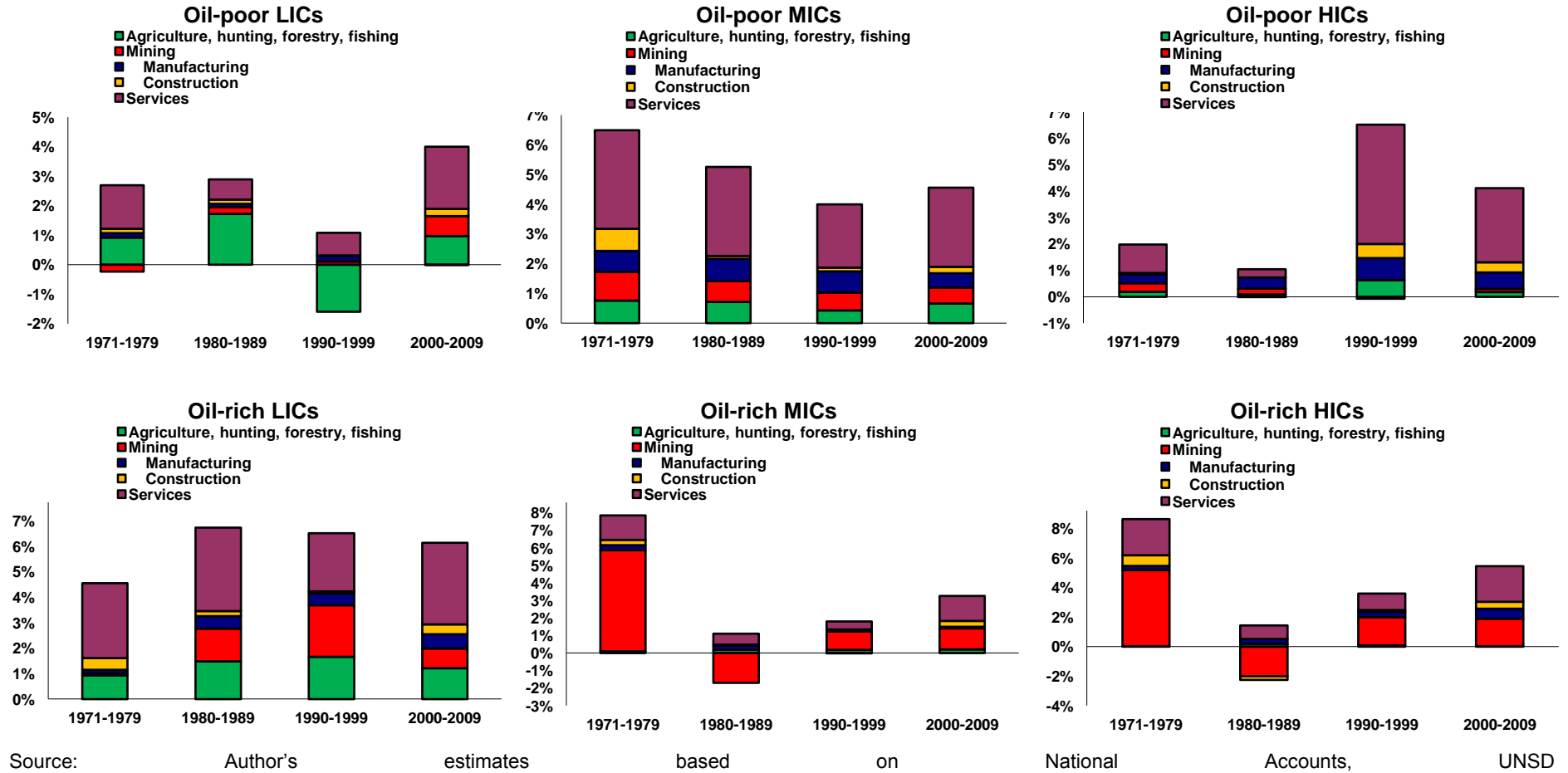
By regions



Source: ibid

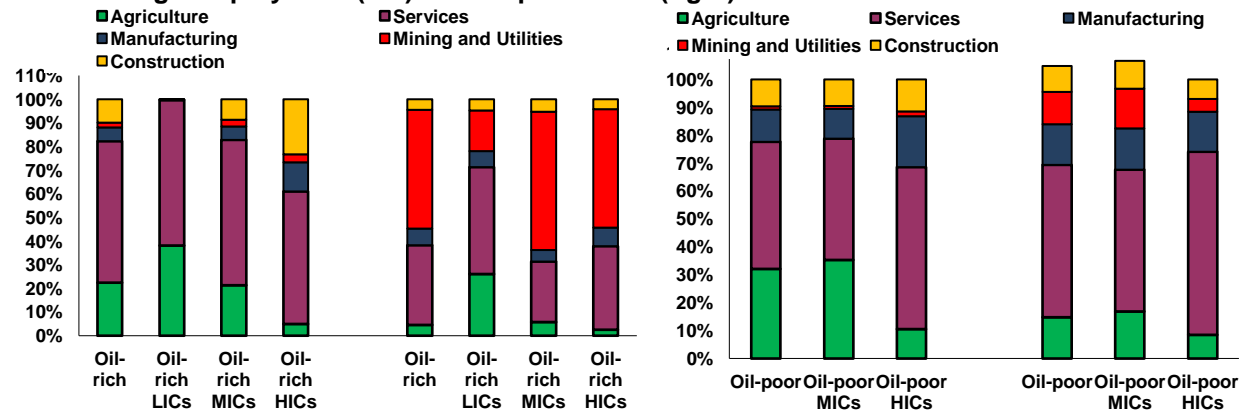


Sectoral decomposition of rate of growth of value added by decades

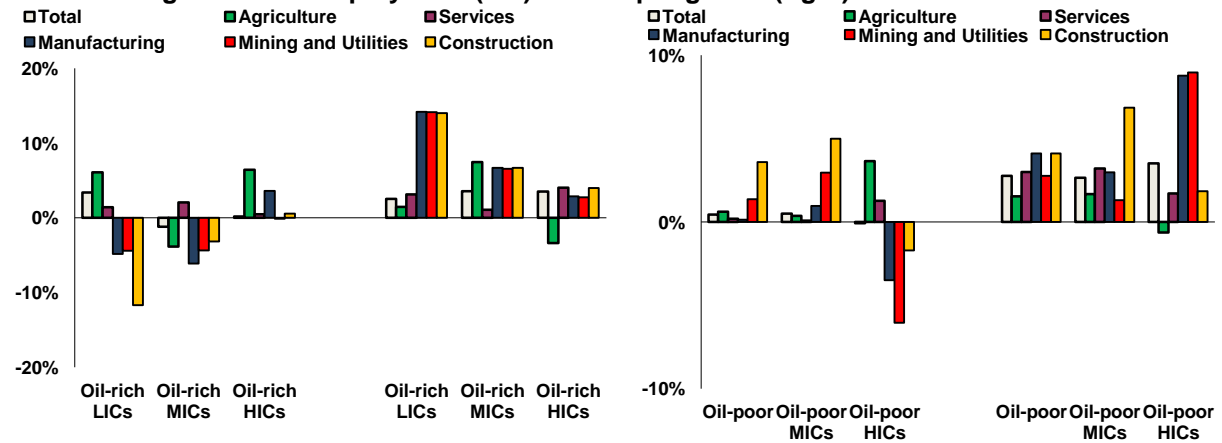


Employment and productivity decompositions of oil-poor and oil-rich countries, 1991-2004

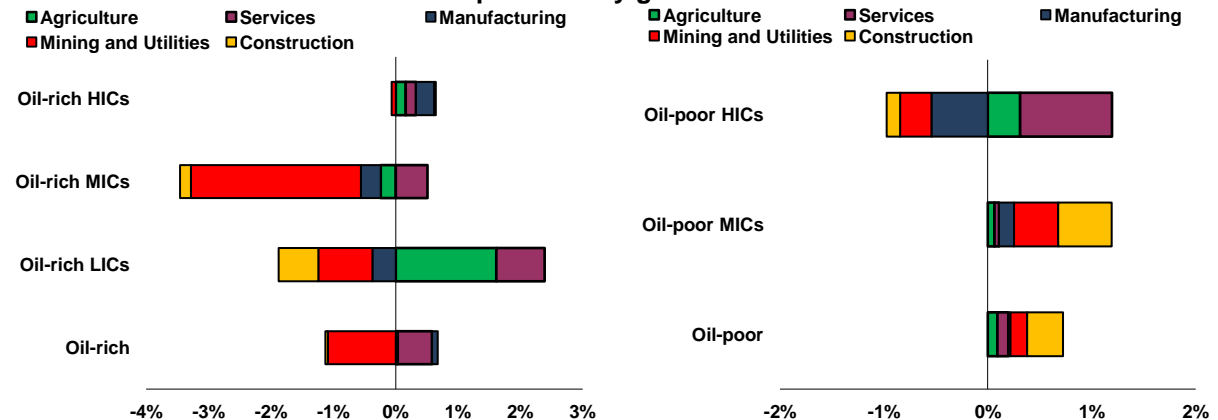
ED1: Average employment (left) and output shares (right)



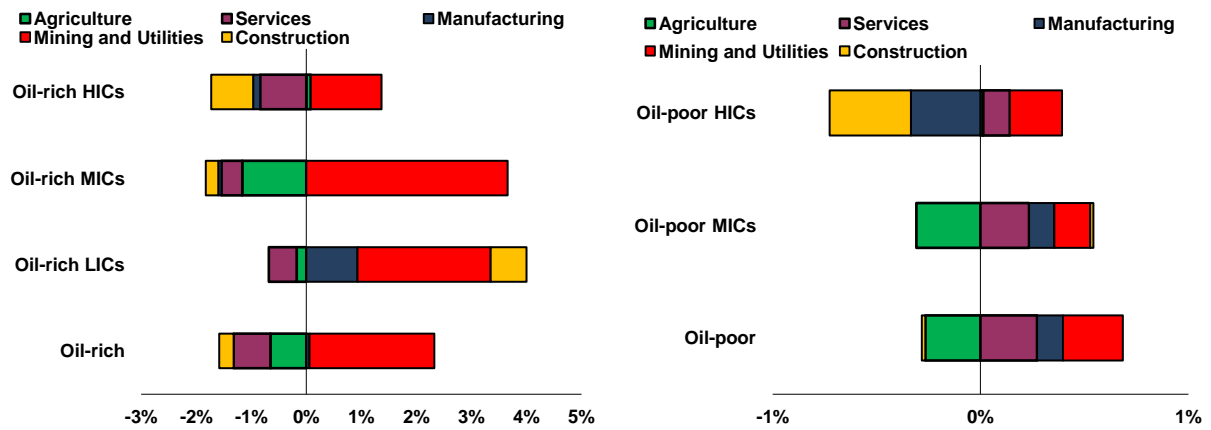
ED-2: Average sectoral employment (left) and output growth(right)



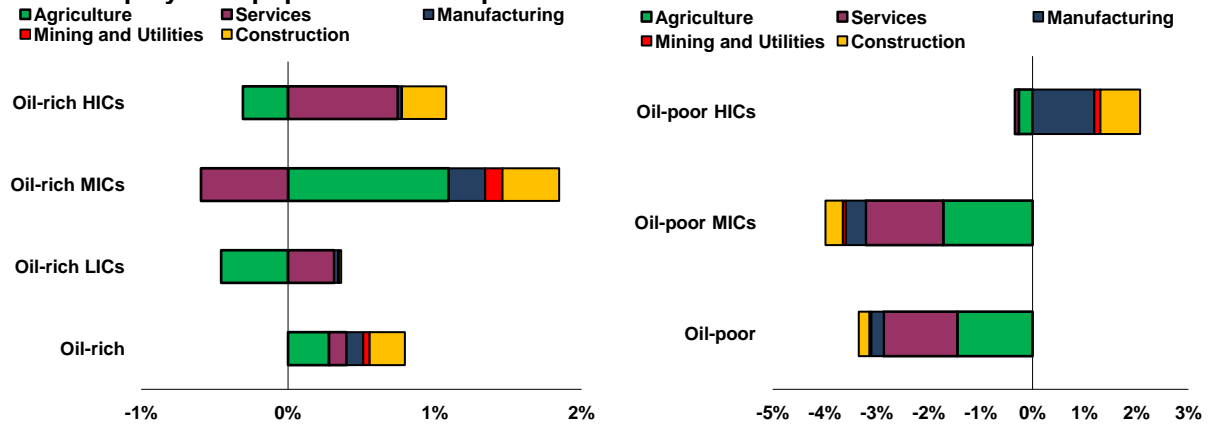
ED-3: Direct sectoral contribution to productivity growth



ED-4: Sectoral contribution to productivity growth through reallocation

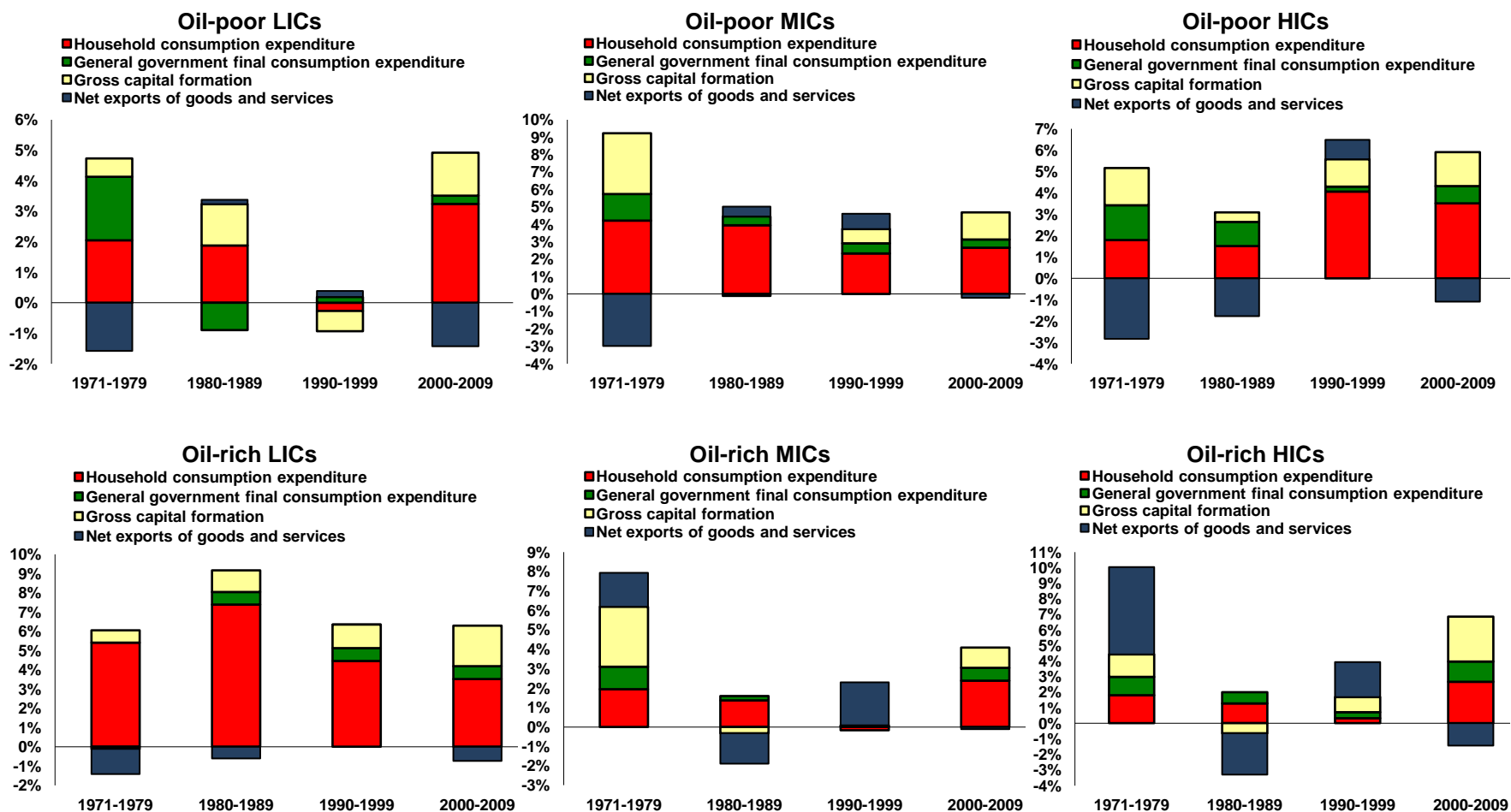


ED-5: Employment-population decomposition



Source: Authors estimates based on ILO's Global Employment Trend model (GET) and National Account, UNSD output for

Demand decomposition of GDP growth rate 1970-2009



Source: Author's estimates based on National Accounts, UNSD