

**Analysis and evaluation of indicators of economic diversification in
Algeria during the period (2000-2018)**

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Abstract:

This study aims to shed light on the extent to which the Algerian economy depends on the only source of income in light of the analysis of the reality of economic diversification through our study of the economic diversification index for the period 2000-2018. We have concluded that the Algerian economy has an acceptable level of diversification if we exclude the indicators of exports and labor and the indicator of fixed capital formation, we also presented a vision to embody the strategy of economic diversification among all parties of society, especially the private sector

Keywords: diversification; economic diversification; economic diversification index; Algeria.

I. Introduction:

Economic diversification is a long-term process that lasts for years that depends on the development of balanced approaches and policies for development according to various reforms and investments in people, institutions, infrastructure and foreign trade, aimed at getting rid of the unilateralism of the economy and its disadvantages and freedom from dependence on a single resource that is priced in foreign markets similar to natural resources and fuels as it is The situation in the Arab countries, including Algeria, whose economy is characterized as a rentier, unilateral, monopolistic economy.

Oil prices have witnessed a sharp and sudden decline since the summer of 2014, which negatively affected the oil economies in general and the Algerian economy in particular, and this in turn led to fluctuations in the overall indicators of the national economy, this prompted decision-makers to the necessity of adapting economic policy and making it more appropriate to the prevailing economic situation, especially by searching for the most efficient and most likely sectors for the advancement of the economy, and rehabilitating the sectors that can achieve an added value to the economy.

Algeria, like many Arab countries, explicitly announced, after the collapse of oil revenues in 2015, the adoption of a new economic model in early June 2016 in order to avoid the dangerous distortions that the Algerian economy suffers from, as this model seeks to achieve growth in the national economy outside hydrocarbons by diversifying its structure And the advancement of its stagnant productive sectors such as industry, tourism, agriculture and irrigation, while adopting a strategic vision for the horizons of 2030. Based on the above, the research problem crystallizes in the following question: **How did the main indicators of economic diversification in Algeria grow during the period 2000-2018?**

In order to address this issue from its various aspects, the following sub-questions can be asked:

- What is economic diversification?
- What are the most important indicators of economic diversification in Algeria?

Study hypotheses

In order to answer the sub-questions posed, a number of hypotheses were formulated as follows:

- The productive sectors such as agriculture, industry, or services are unused and stagnant, and are considered an inexhaustible sustainable resource at the long level and an indicator of economic diversification to get out of dependence on the hydrocarbon sector and fluctuations in oil prices;
- To know the extent of diversification or concentration of an economy, the exports index, the imports index, the employment index, the fixed capital formation index, the public revenue index, and the gross domestic product index must be measured.

Research objectives and methodology

This study aims to evaluate and analyze the importance of economic diversification, as this study relied on the descriptive analytical method in order to take note of the various aspects of this topic, accordingly the concept of economic diversification and the reality of economic diversification in Algeria were presented through an analytical study of the most important indicators.

Study divisions

In order to answer this problem, we decided to divide this study into:

First: the conceptual framework for economic diversification

Second: Measuring and evaluating the economic diversification index in Algeria during the period (2000-2018)

Third: a vision of an economic diversification strategy

II. The conceptual framework for economic diversification

1. Definition of economic diversification

There are many interpretations of economic diversification according to the different vision or angle from which this phenomenon is viewed. While we find that some of them link it to the level of diversification of production and sources of income, we find another party that links it to the structure of commodity exports and the level of risk, and the following we present the various definitions:

Economic Diversification: It is the process by which reliance on the sole resource is reduced and the transition to the stage of strengthening the industrial and agricultural economic base and creating a productive base means building a healthy local economy that is geared towards self-sufficiency in more than one sector. (Hvidt, 2013, p. 4)

Economic Diversification: is the diversification of sources of income and reducing the great dependence on oil natural gas, through the development of the non-oil economy and exports and non-oil revenues (Aissaoui, 2009, p. 6), i.e. the desire to collect the largest major sources of income of the country; (Cuberes & Jerzmanowski, 2009, p. 12)

Economic Diversification: A complex and long process that requires structural changes by opening new non-hydrocarbon economic sectors for development such as services, finance, and tourism or by shifting investment from one sector to another, often from the primary to secondary sector. (Mishrif & Al Balushi, 2018, p. 4)

Economic diversification is the process of shifting an economy away from a single income source toward multiple sources from a growing range of sectors and markets. Traditionally, it has been applied as a strategy to encourage positive economic growth and development. In the context of climate change adaptation, it takes on a new relevance as a strategy to diversify away from vulnerable products, markets, and jobs toward income sources that are low-emission and more climate resilient. (Economic diversification, 2018)

From the foregoing, it is clear that economic diversification is defined as the process in which economies become more diversified in terms of the goods and services they produce, as economic diversification in the oil-producing countries aims primarily to diversify the production base in order to ensure the stability of state revenues and not to be exposed to shocks and crises resulting from reliance on one commodity as a main source of those revenues, meaning that economic diversification limits the impact of shocks on the economy.

2. Determinants of economic diversification

The main determinants of economic diversification are: (MARÉ, 2011, pp. 9-11)

- **Governance:** An activity carried out by management that relates to decisions that determine expectations, or grants Power, or performance verification, consists either of a separate process or of a specific part of operations Management or leadership, where good governance helps to increase economic diversification.
- **Natural resources:** One of the most important determinants of economic diversification, where it can be used In raising productive goods exported, but the well-being of a society is

not limited to the extent available Resources, but by optimizing the utilization of those resources.

- **Private sector:** The private sector plays an important role in economic diversification, led and managed Innovations and economic activity, for example investment in research and development of activities The private sector faces a set of obstacles, which requires the government to find ways to promote entrepreneurship by developing favorable industrial and trade policies and removing bureaucratic obstacles to private companies. Governments need to be aware of the needs of the private sector, such as improving the business climate through

3. Indicators of economic diversification

There are several ways to measure economic diversity, one is the **Herfindel-Hirschmann** index which measures the level of market concentration in an industry, the other is a measure of diversity such as the **Shannon-Weaver** Index (wikipedia). The two indicators are based on the premise that higher economic diversity is achieved when all sectors are represented equally in an economy, but in the modern economy, where consumers and technology are constantly evolving, it is not realistic to achieve an economy in which the contribution of all sectors is equal so that there is economic diversification, the goal is to expand the base Economic and establishing the pillars of a real economy consisting of a productive, financial and service base to find multiple sources of sustainable income.

Economic diversification is measured by the degree to which an economy uses a wide mix of economic activities, for example, which is mostly based on oil production only is not economically diversified, while another economy characterized by the manufacturing and services sector in addition to oil is said to be the most diversified (Esanov, 2012, p. 04). This indicator is important to measure the extent to which the economy is likely to be resilient and stable during an unexpected economic event. If oil prices fall, the rentier economy linked to oil production may suffer, while an economy that contains productive sectors is likely to be more resilient.

4. Models of countries adopting economic diversification policy

a. The Economic Diversification Strategy of Malaysia

Malaysia is an example of developing countries that has built diversified economy from initial conditions of strong concentration in mineral sector; it shows a good example of policy effort and relative success. Since its independence in 1957, the Malaysian government has promoted the manufacturing sector with the aim of diversifying its agriculture-based economy. The structural transformation in the Malaysian economy has turned the country from an exporter of primary commodities into an exporter of high-value-added manufactured products (Kamaruddin & Masron, 2010)

➤ The Malaysian diversification strategy is based on:

- Adapting its strategies and policies according to the changing conditions.
- Significant public investment in education to create a highly skilled labor force and in new economic sectors (e.g. heavy industry).
- A set of many cores (the Malaysian Industrial Development Finance (MIDF) 1960, the Malaysian Industrial Development Authority (MIDA) 1965) to provide financial and other facilities for investors in the manufacturing sector.
- It has based on cheap manufactures to promote export (1973-74).

- Policies to reduce the costs of labor and manage industrial relations.
- Close collaboration between the government and the private sector to define policies develop market and make policy adjustments.
- An open FDI regime to develop nascent industries (e.g. telecommunications and the automotive sector) and the development of a good business climate.
- Excellent infrastructure development (e.g. roads, telecoms, free ports) to support export industries.
- Active trade openness policy by signing bilateral, regional (ASEAN), and multilateral (WTO) trade agreements.
- Investments and targeted support were provided through a variety of programs including free zones, export financing facilities, assistance with research, product and marketing, aimed at reducing production costs and increasing competitiveness.
- Development of information and communication technologies (ICT).

b. The Economic Diversification Strategy of the United Arab Emirates

The collapse of oil prices has led to the emergence of the need for economic diversification in the United Arab Emirates states, Although the efforts of economic diversification made by the Gulf governments have made some progress and positive results in the past few years, they are still required to make greater efforts and take bolder action in this area.

➤ **The United Arab Emirates diversification strategy is based on:** (Hvidt, 2013)

- Creation of infrastructures to reduce costs: During 1970s and 1980s.
- Diversification has been based on the development of - Capital and energy.
- Intensive industries as well as the physical and social infrastructure.
- Development of the productive sectors and heavy industry, at that time Dubai Aluminum started in 1980 & the other sector diversified in 1980s is the service sector.
- Ensuring a stable macroeconomic environment with predictable fiscal and monetary policies aided by an efficient financial sector and appropriate exchange rate.
- Active trade openness policy through unilateral liberalization and free trade agreements: UAE has signed bilateral free trade agreements with 50 countries, and became a member of - The World Trade Organization (WTO) in 1996.
- Ensuring a stable macroeconomic environment with predictable fiscal and monetary policies aided by an efficient financial sector and appropriate exchange rate.

III. Measuring and evaluating the economic diversification index in Algeria during the period (2000-2018)

Measuring the extent of the differentiation of the economy is not easy. Economists usually measure the extent of the diversification of an economy by the diversity of exports, but the diversification of exports is only the front of any economy. The fixed capital index, the public revenue index, and the gross domestic product index, and then we measure the composite index, which is the average of the sum of the six aforementioned indices.

Studying the issue of economic diversification of any economy requires knowing the extent of diversification in various sectors, so the **Hirschman-Herfindel** index was to know the variables index: exports, imports, labor, public revenues, and gross domestic product, including the composite diversification index, which is the mean of the index from mentioned variables.

We chose the period 2000-2018, because this period was the most period during which Algeria collected huge resources from oil revenues, which was punctuated by the severe oil crisis in 2014, and its consequences to this day, and the following is a detail of that.

1. Export Diversification Index

The Algerian export sector consists of seven basic components (foodstuffs, energy and oils, raw materials, semi-manufactured products, agricultural equipment, industrial equipment, and consumer goods). Only 2% in the best cases, and the following table shows that.

Table No. 01: Export Diversification Index for the period (2000-2018)

Years	total exports The unit: million US dollars	food items	Energy and oils	Raw materials	semi- finished products	agricultural equipment	industrial equipment	consumer goods	HHI
2000	22031	32	21419	44	465	11	47	13	0,95571
2001	19132	28	18484	37	504	22	45	12	0,94613
2002	18825	35	18091	51	551	20	50	27	0,93805
2003	24612	48	23939	50	509	1	30	35	0,95640
2004	32083	59	31302	90	571	0	47	14	0,96113
2005	46001	67	45094	134	651	0	36	19	0,96847
2006	54613	73	53429	195	828	1	44	43	0,96534
2007	60163	88	58831	169	993	1	46	35	0,96464
2008	79298	119	77361	334	1384	1	67	32	0,96099
2009	45194	113	44128	170	692	0	42	49	0,96229
2010	57053	315	55527	94	1056	1	30	30	0,95731
2011	73489	355	71427	161	1496	0	35	15	0,95525
2012	71866	315	69804	168	1527	1	32	19	0,95426
2013	64974	402	62960	109	1458	0	28	17	0,95062
2014	62886	323	60304	109	2121	2	16	11	0,93497
2015	34668	235	32699	106	1597	1	19	11	0,91054
2016	30026	327	28221	84	1321	0	54	19	0,90512
2017	35191	349	33261	73	1410	0,29	78	20	0,91328
2018	41168	373	38338	92	2242	0,30	90	33	0,89212

Source: Prepared by the researcher based on the data of the Algerian Ministry of Finance, available at:

<http://www.dgpp-mf.gov.dz/index.php/retrospective>

During the study period, it was found that among the seven sectors that make up the structure of exports, there are energy and oils exports, which represent approximately between 93% to 98% of the total Algerian exports, which clearly reflects the underdevelopment of the export sector, then the semi-manufactured products come with approximately 2% to 5 % in the best cases, then comes industrial equipment, raw materials, foodstuffs and consumer goods with a percentage of 0.55% to 1.42% in the best cases.

Through the previous table and figure, we note that the Hirschmann-Herfindel coefficient of exports during the period 2000-2018 is almost true, in both cases, which indicates the concentration of the export sector, for example, $HHI_{2000} = 0.95571$, and the

index decreased in 2002 to $HHI_{2002} = 0,93805$, and it has been on the rise from 2003 to 2013 due to the rise in oil revenues, to decline again in 2014, when $HHI_{2014} = 0.93497$, and the same was the case for 2015 and 2016 where during the three years Algerian exports witnessed a record high, During 2017, the indicator increased slightly, but it declined again in 2018, when $HHI_{2018} = 0.89212$. It is noticeable that between 2014 and 2018, the percentage of the energy and oil component of total exports decreased, as it was in 2014 by 95,89%, decreasing By 2%, representing 93.12% of total exports, in addition to a decrease in the share of total exports as a whole. This decrease is due to the efforts of the guardians to reduce the import bill and increase the volume of exports outside the hydrocarbon sector.

2. Import diversification index

The structure of Algerian imports consists of: (foodstuffs, energy, oils, raw materials, semi-manufactured products, industrial equipment, and consumer goods). The rise in the import bill comes during the study period, as imported products enjoy a competitive advantage, which Algeria cannot produce with the same advantage, However, industrial equipment comes at the forefront of imports, foodstuffs, and consumer goods.

It is noticeable during the study period that the import bill continues to rise until 2014, and the following table illustrates this.

Table No. (02): Imports Index for the period (2000-2018)

years	total imports The unit: million US dollars	food items	Energy and oils	Raw materials	semi- finished products	agricultural equipment	industrial equipment	consumer goods	HHI
2000	9173	2415	129	428	1655	85	3068	1393	0,17871
2001	9940	2395	139	478	1872	155	3435	1466	0,17574
2002	12009	2740	145	562	2336	148	4423	1655	0,19139
2003	13534	2678	114	689	2857	129	4955	2112	0,18788
2004	18308	3597	173	784	3645	173	7139	2797	0,20521
2005	20357	3587	212	751	4088	160	8452	3107	0,22552
2006	21456	3800	244	843	4934	96	8528	3011	0,21778
2007	27631	4954	324	1325	7105	146	8534	5243	0,16692
2008	39479	7813	594	1394	10014	174	13093	6397	0,18198
2009	39294	5863	549	1200	10165	233	15139	6145	0,21719
2010	40473	6058	955	1409	10098	341	15776	5836	0,21088
2011	47247	9850	1164	1783	10685	387	16050	7328	0,17362
2012	50376	9022	4955	1839	10629	330	13604	9997	0,11123
2013	55028	9580	4385	1841	11310	508	16194	11210	0,12593
2014	58580	11005	2879	1891	12852	658	18961	10334	0,15136
2015	51702	9316	2376	1560	12034	664	17076	8676	0,15844
2016	46727	8224	1292	1559	11482	501	15394	8275	0,16878
2017	46059	8438	1992	1527	10985	610	13995	8511	0,14651
2018	46197	8573	1015	1898	10959	563	13433	9756	0,15014

Source: Prepared by the researcher based on the data of the Algerian Ministry of Finance, available at:

<http://www.dgpp-mf.gov.dz/index.php/retrospective>

During the study period, there are several observations that need to be considered, namely that among the seven sectors that make up the structure of imports, there are industrial equipment (finished) and semi-manufactured products (in process), and perhaps these two components complement each other as they represent inputs to the industrial sector, which clearly reflects the underdevelopment of The industrial sector, then consumer goods and foodstuffs, which also explains the backwardness of the Algerian industrial sector.

Through the previous table and figure, we note that the Hirschmann-Herfindel coefficient of imports during the period 2000-2018 is almost close to zero, in both cases, which indicates the diversity of imports, for example, $HHI_{2000} = 0.17871$, which is on the rise until 2008 when it was $HHI_{2008} = 0.18198$, as well as for the year 2009 and the year 2010, as during the three years, the Algerian imports witnessed a record increase, but during the years 2012-2013, the index decreased as $HHI_{2012} = 0.1123$, and $HHI_{2013} = 0.12593$, and this is due The decline led to an increase in the demand for semi-manufactured goods and a diversification of domestic consumption, in addition to a rise in the import bill of cars. However, in 2014, after the decline in oil prices, the decline in the exchange reserves and the deterioration of macroeconomic indicators, as a result, the custodian authorities subjected imports to a quota system, in addition to fighting The problem of inflating the import bill, as well as reducing the import bill.

During the period 2014-2018, total imports decreased by 13.21%, as foodstuffs estimated by 09.22%, energy and oils 74.64%, semi-manufactured products estimated by 72.14%, agricultural equipment by 43.14%, as well as the case for Industrial equipment increased by 29.15%, consumer goods by 59.5%, while raw materials witnessed a slight increase by 36.0%.

3. Employment Index

The labor force is a very important element in bringing about economic diversification, as it requires tracing its distribution among economic sectors, and not concentrating it in one sector over the other, which avoids the concentration of income in a single resource and its diversity among sectors to reduce the phenomenon of the central economy, and the labor force is distributed in the Algerian economy. Among the four sectors (agriculture, industry, construction and public works, trade and services), the following table shows this.

Table No. (03): Employment Index for the period (2000-2018)

years	Number of Workers "Unit: Thousand"	agriculture	Industry	Construction and public works	Trade and services	HHI
2000	6180	873	826	617	3864	0,32471
2001	6229	1312	861	650	3406	0,22204
2002	-	-	-	-	-	0,22304
2003	6684	1412	804	800	3668	0,22404
2004	7798	1617	1061	968	4153	0,20092
2005	8044	1381	1059	1212	4393	0,21285
2006	8869	1610	1263	1258	4738	0,19790
2007	8594	1171	1028	1524	4872	0,24210
2008	9146	1252	1141	1575	5178	0,24013
2009	9472	1242	1194	1718	5318	0,23482

2010	6973	1136	1337	1886	5377	0,22476
2011	9599	1034	1367	1595	5603	0,26523
2012	10170	912	1335	1663	6260	0,31285
2013	10788	1141	1407	1791	6449	0,28548
2014	10239	899	1290	1826	6224	0,30367
2015	10594	917	1377	1776	6524	0,31411
2016	10845	865	1465	1895	6620	0,30805
2017	10858	1102	1493	1847	6417	0,27658
2018	11001	1067	1434	1774	6726	0,30569

Source: Prepared by the researcher based on the data of the Algerian Ministry of Finance, available at: <http://www.dgpp-mf.gov.dz/index.php/retrospective>

*The year 2002 value is an estimated value.

During the study period for employment in Algeria, we notice clearly the acquisition of the trade and services sector on the labor force, which ranges from 53.42% to 61.13%, then the agricultural sector comes with a ratio of 14.12% to 20.73% in the best cases, then comes the sector Construction and public works with a ratio of 11.96% to 17.47%, and then the industrial sector with a rate of 12.02% to 13.50% in the best cases.

From the previous table and figure, we note that the Hirschmann-Herwendel coefficient of the employment index during the period 2000-2018 almost ranged between 0.32 to 0.19, in both cases, which indicates a somewhat diversification in the labor force. $HHI_{2000}=0.32471$ It declined until the year 2006, when $HHI_{2006} = 0.19790$, due to the increase in employment in the agricultural and industrial sectors, and also to the plans and development policies adopted by the custodians during this period to carry out the two sectors, but the indicator remained between rise and fall until 2018. , where $HHI_{2018}=0.30569$, and this rise is due to the trade and services sector accounting for 61.13%, the construction and public works sector 16.12%, the industrial sector accounting for 13.03%, the agriculture sector 9,69%.

4. Fixed Capital Formation Index

Gross capital formation (formerly total domestic investment) consists of total expenditures on increasing the economy's fixed assets plus net changes in the level of inventories. Fixed assets include land improvements (construction of fences, trenches, drainage ditches, and so on); Purchases of machinery, machinery and equipment, construction of roads, railways, and the like, including schools, offices, hospitals, private residences, and commercial and industrial buildings. Inventories are the stock of goods that companies hold to meet temporary or unexpected fluctuations in production or sales, and "work in progress." According to the 1993 SNA, the net acquisition of valuables is also included in capital formation (World Bank national accounts data)

whereas:

Gross Fixed Capital Formation = Fixed Capital Accumulation + Change in Inventory

Fixed capital formation in Algeria is divided into six components (construction and public works, oil services and public works, commodity equipment, transport equipment, services, agriculture and forestry), and the following table shows that.

Table No. (04): Fixed Capital Formation Index for the Period (2000-2018)

years	Total Fixed Capital Accumulation "Unit: Billion DZD"	Construction and public works	Oil services and public works	commodity equipment	Transportation Equipment	Services	agriculture	HHI
2000	852,6	532,5	66,5	159,9	70,4	15,8	7,6	0,42923
2001	965,2	583,3	52,3	201,6	95,6	27,8	4,9	0,40812
2002	1111,3	691,0	53,5	241,6	94,7	25,5	5,0	0,43616
2003	1265,2	734,0	59,7	310,9	132,9	21,8	5,9	0,39286
2004	1477	811,3	58,7	404,9	172,1	23,1	6,9	0,36853
2005	1691,6	883,6	69,9	409,6	271,5	53,4	3,6	0,32394
2006	1969,5	1083,4	127,2	482,6	215,3	57,0	3,9	0,35128
2007	2462,1	1288,4	188,1	577,8	280,3	122,2	5,2	0,31010
2008	3228,3	1587,6	250,6	809,9	367,6	202,5	10,6	0,27742
2009	3811,4	1837,1	298,5	1021,9	399,9	244,8	9,2	0,27421
2010	4350,9	2246,8	267,5	1163,2	415,3	226,3	31,8	0,31546
2011	4620,3	2403,6	293,4	1201,4	458,1	233,0	30,9	0,31654
2012	4992,4	2655,9	309,6	1082,0	642,3	255,8	46,9	0,31426
2013	5690,9	2972,3	371,1	1370,0	661,6	262,6	53,2	0,31089
2014	6449,7	3320,3	437,6	1665,9	654,8	309,1	59,0	0,30846
2015	7062,3	3684,5	512,9	1774,4	649,5	375,1	65,8	0,31264
2016	7544,3	3977,7	574,5	1913,7	596,7	409,5	72,3	0,32040
2017	7698	4268,2	557,1	1741,2	584,5	478,7	68,2	0,34291
2018	8202,5	4584,8	548,1	1724,9	773,7	496,1	74,9	0,34322

Source: Prepared by the researcher based on the data of the Algerian Ministry of Finance, available at:

<http://www.dgpp-mf.gov.dz/index.php/retrospective>

It is evident that the construction and public works sector has more than 60% of fixed capital formation, followed by the commodity equipment sector, then transportation equipment, then oil services and public works, then the services sector, agriculture and forestry, lastly.

Through the previous table and figure, the Hirschman-Herfindel coefficient ranged between 0.3 and 0.4, where $HHI_{2000}=0.42923$, where the construction and public works sector accounted for 62.46%, which explains the rise in the index, while the equipment of Commodities account for 18.75%, transportation equipment 8.25%, oil services and public works 7.79%, services 1.85%, then the agricultural sector comes last with a rate of 0.89%, and we note that the index is declining until one year 2008, where $HHI_{2008} = 0.27742$, this is due to a decrease in fixed capital formation in the construction and public works sector, which was 49.17%, and the increase in accumulation in the commodity equipment sector, which represented 25.07% of the total, and the increase in capital formation Fixed money is transportation equipment with 11.38%, oil services and public works 7.76%, and the noticeable increase in services that benefited from investment in it compared to its peers from sectors where it represented 6.27% of the total accumulation, then comes the agriculture sector, which decreased in cause Of the total accumulation, then comes the

agriculture sector, which fell by 0.32%, so the index remained almost stable until 2017, rising in 2018 to $HHI_{2018}=0.34322$, and this rise is due to the concentration in the construction and public works sector by 55.90%, and commodity equipment by 21.22%, then transport equipment by 9.43%, services 6.44%, and the agricultural sector by 0.91%. on the lack of diversification in the fixed capital formation index.

5. Public Revenue Diversification Index

Public will is the main source of government spending, especially since the latter is the engine of economic activity for any country. Therefore, increasing economic diversification also requires diversifying public revenues.

For Algeria, the public revenues are represented by petroleum and ordinary levies, which are (tax revenues, ordinary revenues, receipts, donations and legacies, exceptional revenues). Where the value of petroleum levy is more than 60%, while the value of ordinary revenue is about 40%, and the following table shows this.

Table No. (05): Diversification of Public Revenues Index for the Period (2000-2018)

years	Total Revenue "Unit: Million DZD"	petroleum taxation	normal revenue	HHI
2000	1124824	720000	404924	0,09313
2001	1389737	840600	549137	0,05252
2002	1576684	916400	660284	0,03164
2003	1525551	836060	689491	0,01111
2004	1606397	862200	744197	0,00650
2005	1713992	899000	814992	0,00289
2006	1841925	916000	925925	0,00003
2007	1949050	973000	976050	0,0000030
2008	2902448	1715400	1187048	0,03967
2009	3275362	1927000	1348362	0,03738
2010	3074644	1501700	1572944	0,00064
2011	3489810	1529400	1960410	0,01834
2012	3804030	1519040	2284990	0,04845
2013	3895315	1615900	2279415	0,03477
2014	3927748	1577730	2350018	0,04622
2015	4558542	1722940	2829602	0,07030
2016	5011581	1682550	3329031	0,12695
2017	6047885	2126987	3920898	0,10396
2018	6313959	2349694	3964265	0,07768

Source: Prepared by the researcher based on the data of the Algerian Ministry of Finance, available at: <http://www.dgpp-mf.gov.dz/index.php/retrospective>

During the study period, it was found that the index ranged between 0.00 and 0.18, where $HHI_{2000}=0.09313$, where petroleum levy represented 64.01%, while ordinary levy represented 35.99%, and the indicator remained in decline until In 2006, when $HHI_{2006} = 0.000003$, this is due to the increase in ordinary revenues by 50.26% of the total public revenues, which means that the ordinary revenues are equal to the tax ones, so that the indicator continues to rise and fall, until the year 2010, when it was known The index had the largest increase, and it was $HHI_{2016}=0.126951$. This increase is due to the dependence of the custodian authorities on ordinary revenues, which represented about 66.44%, most of which were from taxes, with a rate of 74.56% and petroleum taxation by 33.58%, to bring

the index back to decline Then in 2017 and 2018, in the latter, HHI2018 = 0.07768, due to the return of dependence on petroleum taxation by 37.21%, and regular revenues by 62.79%.

6. GDP diversification index

After diversifying the GDP, it is a component of economic diversification. The output in Algeria consists of seven sectors: (agriculture, hydrocarbons, industry outside the hydrocarbon sector, construction and public works, services, taxes and customs duties, and the value added of public administrations), which is what the table shows. next one:

Table No. (06): GDP diversification index for the period (2000-2018)

years	Gross Domestic Product (Unit is million DA)	agriculture	hydrocarbon	Industry outside the hydrocarbon sector	Construction and public works	Services	Customs duties and taxes	Added value to public administrations	HHI
2000	4123,5	346,2	1616,3	290,7	335,0	842,7	267,8	424,8	0,16144
2001	4227,1	412,1	1443,9	315,2	358,9	921,8	302,9	472,3	0,11870
2002	4522,8	417,2	1477,0	337,6	409,9	1004,2	377,5	499,3	0,10663
2003	5252,3	515,3	1868,9	355,4	445,2	1112,2	403,1	552,3	0,12870
2004	6149,1	580,5	2319,8	388,2	508,0	1303,2	446,2	603,2	0,14958
2005	7562,0	581,6	3352,9	418,3	564,4	1518,9	494,0	631,8	0,2164
2006	8501,0	641,3	3882,2	449,6	674,3	1684,8	491,5	677,8	0,23128
2007	9352,9	708,1	4089,3	479,8	825,1	1919,6	532,5	798,6	0,21205
2008	11043,7	727,4	4997,6	519,6	956,7	2113,7	653,9	1074,8	0,22531
2009	9968,0	931,3	3109,1	570,7	1094,8	2349,1	715,8	1197,2	0,10496
2010	11991,6	1015,3	1015,3	617,4	1257,4	2586,3	747,7	1587,1	0,12954
2011	14589,0	1183,2	1183,2	664,2	1333,3	2933,2	854,6	2378	0,14049
2012	16209,6	1421,7	1421,7	729,5	1491,2	3305,2	1077,5	2648,1	0,12472
2013	16647,9	1640,0	1640,0	771,8	1627,4	3849,8	1239,6	2551,2	0,09857
2014	17228,6	1772,2	1772,2	837,7	1794,0	4186,4	1242,1	2738,4	0,08642
2015	16712,7	1935,1	1935,1	919,4	1917,2	4553,1	1353,7	2900,7	0,06617
2016	17402,1	17402,1	2140,3	975,7	2069,3	4837,8	1339,1	3018,9	0,06156
2017	18575,8	18575,8	2219,1	1044,9	2203,7	4858,9	1477,5	3072	0,06935
2018	20259,0	20259,0	2426,9	1128	2346,5	5305,4	1498	3006,4	0,06935

Source: Prepared by the researcher based on the data of the Algerian Ministry of Finance, available at: <http://www.dgpp-mf.gov.dz/index.php/retrospective>

During the study period, it was found that the GDP diversification index ranged between 0.06 and 0.23, where $HHI_{2000} = 0.16144$, where the fuel sector represents about 39.19%, services 20.43%, the added value of public administrations 10.30 %, agriculture 8.39%, construction and public works 8.12%, industry outside the hydrocarbon sector 7.04%, taxes and customs duties 6.49%, and the index continued to rise and fall until 2008, when $HHI_{2009} = 0.10496$, this decrease in the index is due to a decrease in the contribution of fuels to the output, which was 31.19%, and compensated by an increase in the contribution of services by 23.56%, and the indicator remained between rise and fall until 2015, when $HHI_{2015} = 0.066171$ This decrease led to a decrease in the contribution of the hydrocarbon sector by 18.75%, and the indicator continued to decline, reaching $HHI_{2018} = 0.069352$, but this decrease was accompanied by a return to dependence on the hydrocarbon sector by 22.44%, construction and public works 11.58%, agriculture 11.97%, services 26.18%, public administrations 14.83%, taxes and customs duties 7.39%, while the industry sector outside the hydrocarbons sector remains at the bottom of the ranking with 5.56%.

7. The composite index and an analytical reading of the index

The composite indicator of economic diversification expresses the arithmetic mean of the previous variables (exports, imports, fixed capital accumulation, labor, public revenues, and gross domestic product), and the following table illustrates this.

Table No. (07): HHI for the period (2000-2018)

years	Export Index	import index	Employment Index	Gross fixed capital formation index	public revenue index	GDP Index	Composite Index (HHI)
2000	0,95571	0,17871	0,32471	0,42923	0,09313	0,16144	0,35715
2001	0,94613	0,17574	0,22204	0,40812	0,05252	0,11870	0,32054
2002	0,93805	0,19139	0,22304	0,43616	0,03164	0,10663	0,32115
2003	0,95640	0,18788	0,22404	0,39286	0,01111	0,12870	0,31683
2004	0,96113	0,20521	0,20092	0,36853	0,00650	0,14958	0,31531
2005	0,96847	0,22552	0,21285	0,32394	0,00289	0,2164	0,32501
2006	0,96534	0,21778	0,19790	0,35128	0,00003	0,23128	0,32727
2007	0,96464	0,16692	0,24210	0,31010	0,000003	0,21205	0,31597
2008	0,96099	0,18198	0,24013	0,27742	0,03967	0,22531	0,32092
2009	0,96229	0,21719	0,23482	0,27421	0,03738	0,10496	0,30514
2010	0,95731	0,21088	0,22476	0,31546	0,00064	0,12954	0,30643
2011	0,95525	0,17362	0,26523	0,31654	0,01834	0,14049	0,31158
2012	0,95426	0,11123	0,31285	0,31426	0,04845	0,12472	0,31096
2013	0,95062	0,12593	0,28548	0,310893	0,03477	0,09857	0,30104

2014	0,93497	0,1513 6	0,30367	0,30846	0,04622	0,0864 2	0,30518
2015	0,91054	0,1584 4	0,31411	0,31264	0,07030	0,0661 7	0,30537
2016	0,90512	0,1687 8	0,30805	0,32040	0,12695	0,0666 9	0,31600
2017	0,91328	0,1465 1	0,27658	0,34291	0,10396	0,0615 6	0,30747
2018	0,89212	0,1501 4	0,30569	0,34322	0,07768	0,0693 5	0,30954

Source: Prepared by the researcher based on the data of the Algerian Ministry of Finance, available at: <http://www.dgpp-mf.gov.dz/index.php/retrospective>

During the study period (2000-2018), we found that the composite diversification index ranges between 0.30 and 0.35, as this indicates that the Algerian economy has an acceptable level of diversification to some extent if we exclude the indicator of the exports sector and the accumulation of fixed capital and during the periods of the hand index. The index of imports, the index of operating revenues and the index of gross domestic product remain in the best expected scenario.

Through the previous table and figure, $HHI_{2000}=0.35715$, as the rise in the index is due to the rise in the exports index, the fixed capital accumulation index, and the labor force index, respectively, and the index remained between rise and fall until 2015, when $HHI_{2015}=0.305371$, which is the most significant decrease in the index during the study period, due to the decrease in the exports index, fixed capital accumulation and labor index, so that the index returns between rise and decline, where $HHI_{2018}=0.30637$, where the export diversification index and the GDP diversification index decreased. And to explain this, the custodians are aware of the necessity of economic diversification and diversification of sources of income.

IV. A vision of an economic diversification strategy

For the success of the economic diversification strategy, the state must follow the locomotive of economic diversification in the short and long term. As for the short-term strategy, the government or the custodians will have a leading role in it, through:

- The use of administrative interventions to enhance the patterns of domestic production and consumption in the most basic sectors;

- Stimulating resource efficiency and sustaining infrastructure;
- Using strategies for economic empowerment of the citizen;
- the use of government preference schemes;
- The government's use of a large import bill to promote the development of local businesses;
- Preparing a project for the adoption of all kinds of economic diversification, whether at the sector level, vertical diversification, or at the level of the economy as a whole, horizontal diversification, in addition to geographical diversification and financial diversification;
- Government interventions aimed at strengthening productive sectors, and aimed at accelerating structural transformation;
- the optimal allocation of resources through the selection of productive activities from the most to the least efficient;
- Protecting the local product by protecting it from unfair competition and deliberate closure, and adopting a protection system that constitutes a national incubator for emerging industries;

- Creating a legislative structure to protect local companies in order to motivate local investors to pump new investments in all fields to take advantage of the preferential advantages granted to local companies, which contribute to creating wealth, in addition to generating job opportunities.

As for the long-term diversification engine and to ensure sustainable growth in the long term, the custodians must review the existing policies, and involve other parties in this through:

- Develop a contemporary economy based on technology and skills, in which local companies compete on the basis of the quality of the workforce and productivity, the quality of goods and services, technological innovation and adaptation, the quality of the business environment and infrastructure, and the diversity of trade links.
- A comprehensive strategy to drive economic diversification that includes the following:
 - ✓ Preparing a master action plan for the initiative to advance the process of economic diversification;
 - ✓ Communication strategy for the initiative to advance the process of economic diversification;
 - ✓ Monitoring and Evaluation Program for the Economic Development Initiative;
 - ✓ □ Intensive efforts are made to improve the quality of education and training;
 - ✓ Improving the conditions for entrepreneurial activity at the regional and national levels;
 - ✓ Reviewing trade and investment policies to remove anti-export bias and ensure effective competition in product markets;
 - ✓ Reallocating resources to efficient activities on the one hand, and new activities on the other hand;
 - ✓ Activating partnership within the framework of advancing the process of regional and national diversification;
 - ✓ Support for innovation.

V. Conclusion

There is no doubt that one of the main objectives of economic diversification is to reduce dependence on one sector, diversify the sources of national income and expand investment opportunities, as it should be the introduction of other exports outside the only source, restructuring and liberalizing the economy by working to strengthen the private sector and reduce the leadership role of the state and activate The principle of participation, and economic reform programs must be pursued that guarantee correcting the imbalances resulting from internal and external concentration, as these economic reforms are nothing but tools to achieve macroeconomic stability, microeconomic liberalization and economic openness, which is what all oil-producing countries suffer from, especially Algeria.

The study reached a set of results, including:

- It was found that the export diversification indicator is very close to the concentration on hydrocarbon exports;
- The import diversification indicator is close to diversification, especially with regard to consumer goods.
- The employment index was also somewhat close to diversification, but the trade and services sector accounts for more than half of employment relative to other sectors;
- The fixed capital formation index is close to concentration, as the construction and public works sector covers the largest percentage of investment in it by more than half compared to other sectors;

- The public revenue index is close to diversification than to concentration, and petroleum taxation accounts for more than half of ordinary taxation;
- The GDP indicator was also close to diversification than to concentration. As for the hydrocarbons sector, it represents about 40% of the GDP share of it for other sectors;
- Looking at the composite index, it is noted that the Algerian economy is at an acceptable level of diversification if we exclude the index of exports and the index of fixed capital (investment), and during the periods of the labor index.

In light of the above, the following recommendations related to economic diversification can be proposed:

- Develop an effective strategy to properly analyze the current situation and set priorities (producing sectors), in accordance with an appropriate strategic vision and mission that includes the necessary policies and procedures for this;
- Getting rid of the grip of hydrocarbons as the only export commodity, and working to encourage exports outside the oil sector, by increasing support for the agricultural, industrial and service sectors, and encouraging economic activities that create added values;
- Giving priority to the agricultural sector, the tourism sector and the energy sector, respectively;
- Creating a clean and appropriate climate (politically, economically, socially, legally) for the development of small and medium enterprises and facilitating ways to invest in them while reviewing the existing laws and legislation related to the organization of their work and taking care to avoid sudden and random change of laws;
- invest heavily in research and development and work on developing technological capabilities and improving product competitiveness, while opening up to the outside and liberalizing the financial market;
- On the external level, it is more appropriate to build strong external relations and economic blocs, if possible;
- Preparing Algeria for the post-oil era, by rehabilitating the national economy to integrate into the global economy, by carrying out reforms affecting the monetary system, and encouraging laws to bring in hard currency.

VI. Bibliographie

1. Aissaoui, A. (2009). The Challenges of diversifying Petroleum Dependand Economies: Algeria in the context of the Middle-East and North-Africa. *Arab Petroleum Investments Corporation, Middle East Economic Survey* , 02 (52), 1-34.
2. Cuberes, D., & Jerzmanowski, M. (2009). Democracy, Diversification, and Growth Reversals. *the Economic Journal* , 119 (540), 1270-1302.
3. *Economic diversification*. (2018). Retrieved 09 24, 2021, from united nation climate change: <https://unfccc.int/topics/resilience/resources/economic-diversification>
4. Esanov, A. (2012). Economic Diversification: Dynamics, Determinants and Policy Implications. *revenue watch institute* , 08, 1-26.
5. Hvidt, M. (2013). Economic diversification in GCC countries: Past record and future trends. *Kuwait Programme on Development, Governance and Globalisation in the Gulf States* (27), 1-49.
6. Kamaruddin, R., & Masron, T. A. (2010). Sources of growth in the manufacturing sector in Malaysia: Evidence from ARDL and structural decomposition analysis. *Asian Academy of Management Journal* , 15 (01), 99-116.
7. MARÉ, J. H. (2011). *Economic diversification in Africa:a review of selected countries*. OECD.
8. Mishrif, A., & Al Balushi, Y. (2018). *Economic diversification in the Gulf region* (Vol. 02). Cambridge: Library of Congress Control: Gulf Research Centre Cambridge.
9. wikipedia. (n.d.). *Diversity index*. Retrieved 09 24, 2021, from wikipedia: https://en.org/wiki/Diversity_index