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ANALYSIS OF THE TECHNOLOGICAL BALANCE OF PAYMENTS IN SELECTED ARAB COUNTRIES

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Abstract:

Some Arab countries are moving in accordance with WTO principles in the liberalization of the foreign trade sector and the liberalization of trade in Globalization goods and services, as production and service activities seek to take into account developments in areas (techno-scientific) such as innovations and ICT, thus forming the foundation of the enabling environment to activate the impact of technological knowledge in stabilizing the dynamics of the technological balance of payments through foreign trade in knowledge products, in order to regulate the returns of the knowledge economy sector, as the trend towards a knowledge-based economy has become a major impact on all Economic sectors as leverage to maximize productivity and economic growth. The research thus involves analyzing and assessing the efficiency of the technological balance of payments performance in selected Arab countries, which has reached the following conclusion of the low efficiency of the performance of qualitative indicators, particularly high, medium and low technological exports, which has exacerbated the technological balance of payments deficit as a result of reduced spending on education, research, development and innovation sectors as a proportion of GDP and a share of government spending. The research recommended that technology sector markets should be freed from monopolistic pressures and the tendency to promote competition in order to provide low-priced technological services by increasing spending on education, research, development and innovation sectors and strengthening public-private partnerships and civil society institutions.

Keywords: Technological balance, Education, Globalization goods, developments, low technological exports

INTRODUCTION

The selected Group of Arab Countries sought to include the technological knowledge sector in its development strategies by stimulating the foreign trade sector in knowledge goods and services, and there was a discrepancy between them in the efficiency of the performance of qualitative transformation, which was an introduction to the importance of research, which emphasized the reduction of the marginalization of Arab economies as they continue to rely on the natural resource base by moving towards the economy of new competitive advantages. While the research problem emphasized the growing technological gap between the technological knowledge-producing environments and their consumer counterparts, which exacerbates the technological balance of payments deficit, the research hypothesis provides for a dialectic between the investment of technological developments and the increased opportunities for sustainable economic growth, and the aim of the research is to estimate the efficiency of the technological balance of payments through qualitative indicators based on statistical data relevant to the time period (2005-2016).

The first axis: Technological Balance of Payments:

The transfer of technological knowledge between economic environments is established in what is known as the Technological Balance of Payments Guide, which allows the registration of IP funds, and when it is adopted to compare countries using similar methods of data collection, it can provide information on the dissemination of technological knowledge and competitiveness in the international market [(1)]. The OECD defines the concept of the technological balance of payments as a commercial information record on the transfer of technological knowledge between different economic environments, reflecting the cash values paid or received to acquire and use patents, technological licenses, trademarks and industrial designs[(2)] .

The technological balance of payments involves the purchase and sale of unembodied technology, including property rights, licenses and technical assistance, as well as non-technology-related payments such as administrative services. It does not interfere with

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technological exchanges in which there are no payments. This is the case with agreements on the exchange of licenses or the transfer of know-how technology knowledge. The technological balance of payments indicates through the dynamics of exports and imports in goods that are technologically knowledgeable between two economic environments of different technological capabilities[3] .The technological balance of payments includes the following processes [4].

1. Technology transfers include patent, licensing and technical transfer.
2. Graphic transfers include acquisitions, licenses, concessions and brands.
3. The provision of technological services, particularly technological and engineering studies, as well as technological assistance.
4. Industrial research and development outputs.

Thus, the technological balance of payments is concerned with three rights, particularly patent rights and know-how not covered by patents, as well as trademarks and concessions, and in this regard the OECD has proposed a specific model for the collection and use of technological balance of payments data, and has made recommendations on how to apply the technological balance of payments to measure the activity of technological knowledge, as evidenced by table indicators (1).

Table (1) Technological balance of payments account items

Items to be calculated	Items not to be calculated
Invention Rights	Business, financial, administrative and legal advice
(Rights of buy, sale and using)	Advertising, insurance, transportation, movies and audio recordings
Knowledge of technological knowledge	Copyrighted materials, design, software

Source: United Nations, New Indicators for Science, Technology and Innovation in the Knowledge - Based Society, E/ESCWA/SDPD/2003/5, New York, 2003, P.20

The first group includes the rights of invention and know-how that is not covered by patents, trademarks or franchising, while the second group consists of commercial, financial, administrative and legal advice provided by specialized cadres and includes films and audio recordings. The second group also includes factors subject to insurance, sponsorship and transport rights, as well as designs and software intended for a special purposes. In addition, THE UNITED NATIONS DEVELOPMENT PROGRAMME CLASSIFIES TECHNOLOGICAL EXPORTS AT LOW, MEDIUM AND HIGH LEVELS. As in table (2).

Table (2) Indicators of exports of low, medium and high technological goods and services

Technological level	Content
Low-tech exports	Textiles, paper, glassware and basic steel and steel products such as panels, wires and unoccupied iron.
Medium-tech exports	Self-propelled products, manufacturing equipment such as agricultural, textile and food machinery and some forms of steel such as pipes and primary forms, and chemical products such as polymers, fertilizers and explosives.

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High-tech exports	Electronic and electrical products such as transistors, televisions, power generation equipment, communications equipment and data processing, as well as cameras, pharmaceuticals, space equipment, optical instruments and measuring instruments.

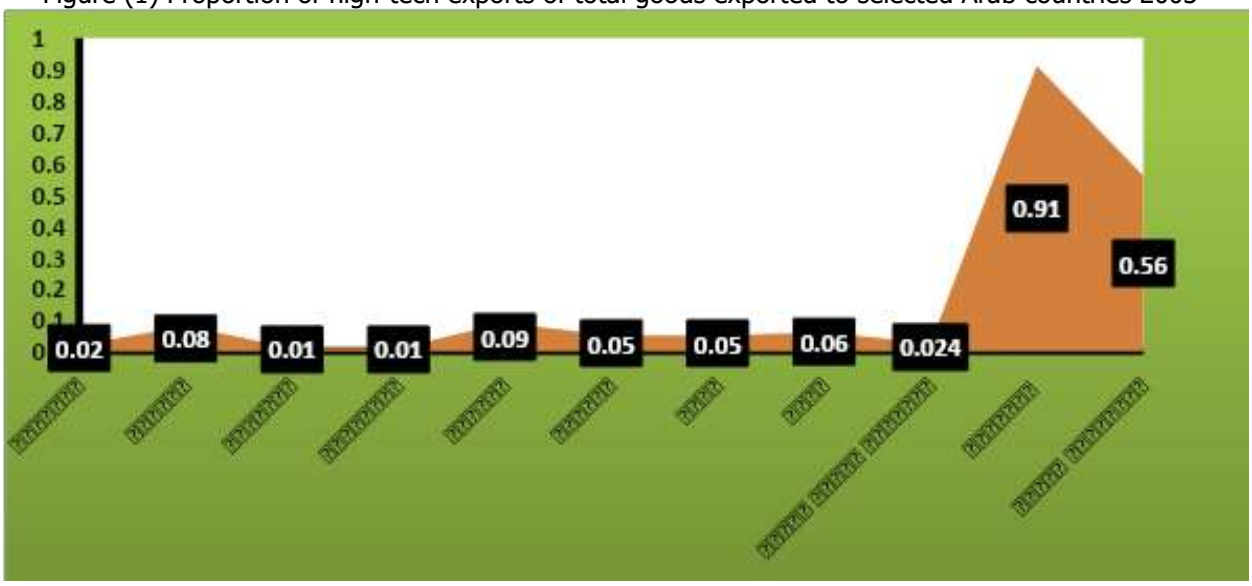
Source: Salih Mahdi Al Burhan, Foreign Trade in Technological Knowledge Industries Goods and Services: The Environment of The Economies of Selected Arab Countries, Comparative Study Case, Al Kut Journal of Economic and Management Sciences, issued by the Faculty of Management and Economics, Wasit University, Volume 1, Issue 5, 2011, p. 30.

The OECD indicator developed by UNDP by calculating the proportion of trade in high-tech goods from total exports is an alternative to the technological balance of payments in its technical sense, which has difficulty in applying it in developing economic environments, due to technical problems closely related to the inventory of statistical data associated with the export and import of knowledge products and services[5].

The second axis : efficiency in assessing the performance of the technological balance of payments in selected Arab countries:

Monitoring the dynamics of international trade in technological knowledge will be adopted by the OECD proposal developed by UNDP, which has classified technology exports to high-tech exports, low-tech exports to accommodate techno-economic conditions in developing economic environments, particularly In-Arab, as well as analysis of data on relevant indicators on the relationship of EXPORTS of technological knowledge to GDP. Total trade services exports and total industrial exports are an approach to the technical concept that defined the dynamics of the technological balance of payments for exports of knowledge-intensive goods [6] and in this context, figure (1) illustrates the relative importance of exports of high-tech goods to selected Arab countries compared to Malaysia and Korea, and there appears to be a better performance for Kuwait and Jordan, which recorded (0.09%) And (0.08%) Respectively, however, the technological gap is worsening for the average Of Arab countries compared to the performance of Malaysia and South Korea. The average of Arab countries selected for high-tech goods declined in 2003, while Malaysia and South Korea recorded double (0.91%) rates. And (0.56%) Straight.

Figure (1) Proportion of high-tech exports of total goods exported to selected Arab countries 2003



Source: The form of the researcher's preparation based on data quoted from: Arab Competitiveness Report, Arab Institute of Planning in Kuwait, Kuwait, 2003, p. 90.

In addition, table 3 shows the value of high-tech exports, their proportion of the total value of industrial exports in selected Arab countries and their comparison with those of India, Ireland and Turkey for 2004. The comparison shows the value of exports in Ireland, which is twice the value of Egypt, Jordan, Kuwait, Oman and Syria, and Jordan recorded a performance efficiency of 147 million dollars compared to 1,064 million dollars for Turkey and about 2,840 million dollars for India. Which means the technological gap is getting worse. (Technological Gap)

Table (3) High-tech exports of total industrial exports 2004.

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Selected countries	Value of high-tech exports (US) $1 million	Percentage of high-tech exports of total industrial exports (%)
Egypt	15	1
Jordan	147	5
Oman	22	1
Syria	6	1
India	2840	5
Ireland	30239	34
Turkey	1064	2

Source: United Nations, ICT Bulletin for Development in Asia, Issue (6) ESCWA, New York, 2007, p. 4.

Comparing iran's high-tech exports of (375 million$) in 2007, it is higher than in some of the Arab countries concerned, namely Jordan, Bahrain, Syria, Oman, Egypt, Saudi Arabia and Yemen. The value of these exports for 2007 in Morocco amounted to (858 million$) and Tunisia amounted to (565 million$), which exceeded its value in Turkey when it reached the value of its exports (328 million$) (see table 4).

Table (4) High-tech exports and their proportion of total industrial exports

Country	Value of high-tech exports and proportion of total industrial exports					
	(Millions of dollars)			Percentage		
	2005	2006	2007	2005	2006	2007
Jordan	34	35	38	1.4	1.2	1.1
Iran	127	375	375	2.5	6.2	6.0
Bahrain	0.4	0.3	0.5	0.1	0.1	0.0
Turkey	906	258	328	1.5	0.4	0.4
Tunisia	344	563	565	4.4	6.6	5.3
Syria	18	29	..	2.1	0.8	..
Oman	2	3	8	0.3	0.3	0.5
Egypt	9	15	5	0.4	0.5	0.2
Morocco	707	830	858	10.0	10.1	9.1
Saudi Arabia	91	148	121	0.6	0.9	0.6
Yemen	0.2	3	1	0.8	6.1	1.4
World	1572836	1807189	..	20.6	20.6	18.1

Source: United Nations, Annual Review of Developments in Globalization and Regional Integration in Arab Countries, E/ESCWA/ICTD/2007, New York, 2009, p.79

On a related note, the selected Arab countries recorded a low performance in 2006 compared to Chile, South Korea, Malaysia, Portugal and South Africa, with an average of (0.36%). The average of Arab countries (0.05%) was high when compared with other Arab countries when they made a contribution of high-tech exports of about (0.18%) of total exports. For each of them. (See Figure 2)

Figure (2) Proportion of high-tech exports of total goods exported by selected Arab countries. 2006

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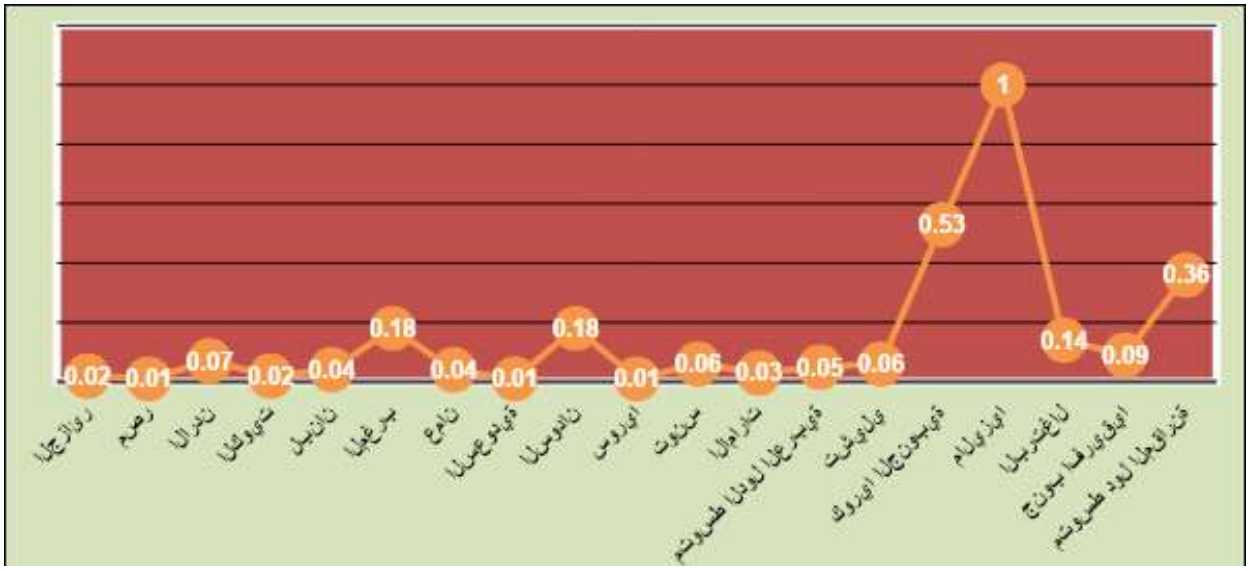

Source: Figure prepared by the researcher based on data quoted from: Arab Competitiveness Report, Arab Institute for Planning in Kuwait, Kuwait, 2006, p. 46

Within the classification of goods by technological density, Saudi Arabia recorded the highest performance efficiency of high-tech goods by about (12.660 billion $) in 2009 compared to other Arab countries. There is mixed performance for some Arab countries (see table 5)

Table (5) Selected Arab Countries' Exports of Low, Medium and High-Tech Manufactured Goods for 2009

Country	The value of low technology (million dollars).	The value of medium technology (million dollars).	The value of high-tech (million dollars)
Egypt	1.413	1.273	3.248
Jordan	458	868	1.975
Saudi Arabia	2.583	2.457	12.660
Tunisia	646	3.210	2.323
Morocco	254	1.903	2.729

Source: Jamal Qassem, Mohammed Ismail, Commodity Export Competitiveness in Arab Countries, Arab Monetary Fund, Abu Dhabi, 2011, p. 12-18.

In addition, exports to Arab countries of low-tech manufactured goods for 2009 amounted to about (10.6 billion $) of total exports and of relative importance of 1.8 percent. The value of manufactured exports of medium-tech goods increased by about (26,493 billion$) and with relative importance of 4.3%. In the same year, exports of high-tech manufactured goods recorded (40.534 billion$) which a record (9.6 %) of the total exports of Arab countries [7] , however, there is a growing technological gap between Arab countries and Malaysia, whose exports of manufactured goods with technological skills amount to about 46 %). Of the total industrial exports, Arab countries performed about 7%,(see figure 3).

Figure (3) Exports of technologically intensive industrial goods 2009

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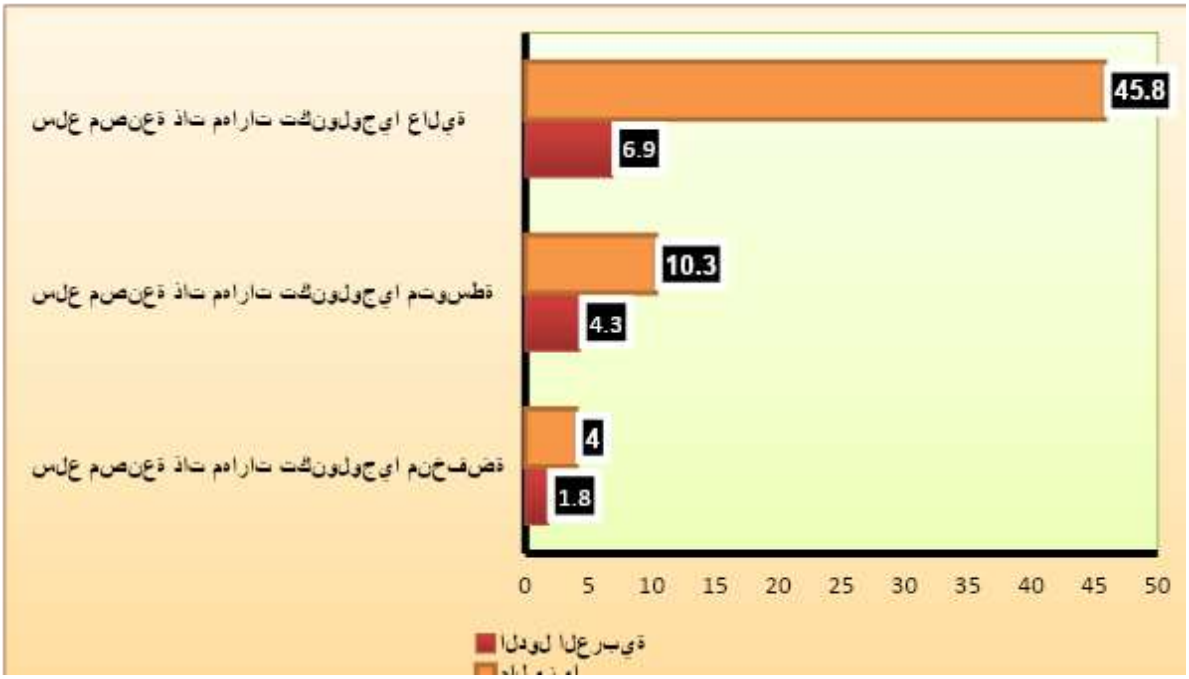

Source: The form prepared by the researcher based on data quoted by Jamal Qassem, Mohammed Ismail, Competitive commodity exports in Arab countries, Arab Monetary Fund, Abu Dhabi, 2011, p. 7.

With regard to the relative importance of selected Arab countries' exports of high-tech goods in 2009, Arab countries recorded low proportions of high-tech goods when compared with South Korea, Malaysia, Chile and the Czech Republic, as well as Ireland, Portugal and South Africa, which averaged relative importance (0.398%). The average of Arab countries (0.054%). (See table 6)

Table No. (6) High-tech exports of total goods exported to Arab countries 2009

The government's support	Percentage of high-tech exports
Algeria	0.020
Bahrain	0.031
Egypt	0.004
Jordan	0.090
Kuwait	0.013
Lebanon	0.039
Morocco	0.176
Oman	0.035
Qatar	0.017
Saudi Arabia	0.019
Sudan	0.000
Syria	0.019
Tunisia	0.080
UAE	0.178
Yemen	0.092
Average Arab countries	0.054
Chile	0.104
Czech	0.238
Ireland	0.624
South Korea	0.590
Malaysia	1.0

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Mexico	0.360
Portugal	0.160
South Africa	0.109
Average comparison countries	0.398

Source: The table prepared by the researcher based on data quoted from: Arab Competitiveness Report, Arab Institute of Planning in Kuwait, Kuwait, 2009, p. 47.

On a related note, the selected Arab countries recorded low exports of high-tech goods in 2012 when compared with Malaysia, South Korea, China and Ireland, each with about(100 %)of the world's exports. And (70%) And (60%) (6%) Respectively, as well as Mexico which recorded about (40%) Czech Republic (30%) Brazil (20%) Argentina (15 %) and The average of these countries (35%). The average of selected Arab countries was (3%). This means that the technological gap will continue until 2012. (See table 7).

Table (7) Proportion of high-tech exports of total goods exported to Arab countries 2012

The government's support	Percentage of high-tech exports
Algeria	0.03
Bahrain	0.00
Egypt	0.01
Jordan	0.02
Kuwait	0.01
Lebanon	0.03
Libya	0.00
Morocco	0.19
Oman	0.01
Qatar	0.00
Saudi Arabia	0.01
Sudan	0.01
Syria	0.03
Tunisia	0.11
UAE	0.04
Yemen	0.01
Average Arab countries	0.03
Argentina	0.15
Brazil	0.24
Chile	0.13
China	0.60
Czech	0.28
Greece	0.19
Ireland	0.62
South Korea	0.65
Malaysia	1.00
Mauritania	0.00
Mexico	0.38
Portugal	0.18
South Africa	0.12
Turkey	0.04
Average comparison countries	0.35

Source: The table was prepared by the researcher based on data from: Arab Competitiveness Report, Arab Institute for Planning in Kuwait, Kuwait, 2012, p. 53.

In a related context, table (8) translates the value of high-tech exports and their proportion of world exports requiring a high degree of research and development. Morocco and Tunisia recorded high percentages of total world exports in

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the period (2010-2014), with Morocco achieving high performance in its high-tech exports of goods, which amounted to (28%.). In 2011, Tunisia recorded a contribution of about (26%.) The rest of the Arab countries recorded low export rates during the period (2010-2014), including Iraq.

Table (8) Selected Arab countries' exports of high-tech goods as a proportion of the year's exports

Countries	2010		2011		2012		2013		2014	
	Export value (million dollars)	Share of world exports (%)	Export value (million dollars)	Share of world exports (%)	Export value (million dollars)	Share of world exports (%)	Export value (million dollars)	Share of world exports (%)	Export value (million dollars)	Share of world exports (%)
Jordan	246.7	0.02	275	0.02	42	0	238	0.02	268	0.02
Bahrain	26.9	0	46	0.0	8	0.0	7	0.0	105	0.0
Tunisia	2649	0.23	3.228	0.26	2.416	0.19	3.018	0.22	3.162	0.23
Algeria	1.9	0	2	0.0	2	0.0	2	0.0	4	0.0
Saudi Arabia	789	0.07	196	0.02	114	0.01	213	0.02	340	0.02
Sudan	6.8	0	15	0.0	-	-	45	0.0	17	0.0
Syria	60.9	0.01	42	0.0	-	-	5	0.0	-	-
Oman	289.5	0.03	357	0.03	336	0.03	402	0.03	402	0.03
Qatar	11.9	0	15	0.0	14	0.0	99	0.0	-	-
Kuwait	55.8	0	27	0.0	21	0.0	24	0.0	100	0.0
Lebanon	201.8	0.02	137	0.01	133	0.01	135	0.01	125	0.01
Libya	2.7	0	4	0.0	-	-	-	-	-	-
Egypt	813	0.07	1.137	0.09	1.126	0.09	1.133	0.08	1.343	0.1
Morocco	2623	0.23	3.431	0.28	2.773	0.22	3.141	0.23	3.670	0.27
Yemen	3	0	6	0.0	-	-	-	-	-	-
UAE	-	-	1.089	0.09	970	0.08	1.239	0.1	-	-
Iraq	-	-	2	0.0	2	0.0	4	0.0	-	-

Source: Table prepared by the researcher based on data quoted from:

Arab Monetary Fund, Consolidated Arab Economic Report, Economic and Technical Department, Abu Dhabi, 2012, p. 414.

Arab Monetary Fund, Consolidated Arab Economic Report, Economic and Technical Department, Abu Dhabi, 2013, p. 418

Arab Monetary Fund, Consolidated Arab Economic Report, Economic and Technical Department, Abu Dhabi, 2014am431.

Arab Monetary Fund, Consolidated Arab Economic Report, Economic and Technical Department, Abu Dhabi, 2015, p. 481.

Arab Monetary Fund, Consolidated Arab Economic Report, Economic and Technical Department, Abu Dhabi, 2016, p. 504.

ICT exports have been developed by the World Bank and the ICT goods export and import indicators to show that the ICT sector contributes to GDP, and ICT goods and services exports and imports emphasize those

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goods and services used to complete data and information processing and electronic transmission via the Internet[8] In this regard, table (9) shows the value of ICT exports and their share of GDP in 2004 for selected Arab countries and their comparison with India and Ireland, with the proportion of ICT exports in Ireland accounting for more than (19%) This is twice the proportion of exports involved in Jordan, Egypt and Lebanon. In addition, the performance of the Arab countries concerned is low even when comparing their combined performance with the performance of a developing economic environment such as India, which had a performance rate of (1.893 %).

Table (9) Share of ICT exports of GDP, 2004.

Country	Value of exports ($ million dollars(	GBP Million dollars($)	Percentage of exports of GDP (%)
Lebanon	15	76821	0.095
Egypt	150	75148	0.199
Jordan	70	11196	0.625
India	13100	691876	1.893
Ireland	36300	183560	19.775

SORCE: United Nations ، Annual Review of Development in Globalization and Regional Integration in the Countries E/ESCWA/GRID/2005/3، New York،2005،P.69.

The value of exports involves computer, information, communications and commercial services as well as international communications, postal and delivery services, computer data, services for residents and non-residents, construction services, licenses, business, professional and technological services, and personal, cultural and recreational services [9] . In this context, table (10) shows the value of exports of computer, information and communication services and other commercial services, and their proportion of the total value of commercial services exports in selected Arab countries and compared with India, Ireland and Turkey for 2004, as the value of exports of computer, information and communication services in Ireland is twice the value in Egypt, Kuwait, Oman, Jordan, Jordan and Syria combined, when it was about (58%). of the total value of commercial services exports. It is offset by a decline in the performance of the Arab countries concerned compared to the performance of a developing country such as India, which was about (66,400%). Egypt's highest performance was only about (27.096%).

Table (10) ICT exports from total trade services exports 2004

Country	Trade services exports	Exports of computer, information, communications and other commercial services	
	Value (billion dollars)	Value (billion dollars)	Value (billion dollars)
Egypt	14046	23806	27.096
Jordan	2036	281	13.801
Kuwait	2067	281	13.594
Oman	830	21	2.530
Syria	2222	184	8.280
India	39638	26320	66.400
Ireland	52158	30356	58.200
Turkey	23806	4095	17.201

Source: United Nations, West Asian Development ICT Bulletin, No. 6, ESCWA, New York, 2007, p. 3.

Table (11) translates the value of exports of computer, telecommunications and other trade services in selected Arab countries and their proportion of the total value of trade services exports, compared to those of Ireland, Turkey and the world. It reflects the growing technological gap between the Arab Group and Ireland. Bahrain, Kuwait and Yemen's high performance for re-export is due from origin, yet the performance of selected Arab countries remains low compared to that of the global average. In 2007, the value of these technological exports of (7.93 billion $) in Ireland was more than three times the total value of exports in selected Arab countries. After declining in value between 2005 and 2006, these exports declined in Egypt, rising in 2007 to (17.3 %). Of its total exports of commercial services, while the value of exports of computer services, telecommunications and other commercial services for 2007 in Lebanon (6.948

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billion$) and Kuwait (5.425 billion$) exceeded its value in Turkey for the same year, accounting for (53.5%). And about (63.3%) Of the total value of trade services exports in Lebanon and Kuwait, respectively.

Table (11) Computer and telecommunications exports and their proportion of total trade services exports

Countries / World	Trade services exports			Exports of telecommunications services, computers and other commercial services and their proportion of exports of commercial services					
	(Millions of dollars)			(Millions of dollars)			(%)		
	2005	2006	2007	2005	2006	2007	2005	2006	2007
Jordan	2239	2850	3298	329	262	350	14.7	9.2	10.6
Ireland	59402	68660	88994	51974	60352	79356	87.5	87.9	89.2
Bahrain	3048	3322	3524	1445	1537	1670	47.4	46.3	47.4
Turkey	26328	24998	28253	3379	3450	3585	12.8	13.8	12.7
Tunisia	3901	4162	4757	622	643	746	16.0	15.5	15.7
Syria	4757	2649	2649	398	407	746	16.0	15.5	15.7
Sudan	101	220	342	8	34	69	7.9	15.3	20.3
Oman	939	1301	1631	211	450	593	22.4	34.3	36.4
Kuwait	3789	6982	8572	1413	4112	5425	37.3	58.9	63.3
Lebanon	10840	11549	12982	4870	6107	6948	44.9	52.9	53.5
Egypt	14449	15834	19660	2852	2754	3407	19.7	17.4	17.3
Morocco	7570	9269	11490	1659	1796	2491	21.9	19.4	21.7
Yemen	285	468	578	59	256	108	20.6	54.7	18.6
World	2499301	2825588	3368898	1222575	1418378	1711084	48.9	50.2	50.8

Source: United Nations, Annual Review of Developments in Globalization and Regional Integration in Arab Countries (ESCWA, New York, 2009, p. 78).

Moreover, the rate of exports of high-tech goods as a percentage of total exports in ESCWA member countries was about (1.2%) In 2009, the total import of these goods was about (4.4%). For the same year. Jordan achieved higher export rates than the rest of ESCWA member countries by (3.1%) In 2009, although the proportion declined significantly, it was (5.5%) in 2008, while in Lebanon the export rate of these goods increased over the past two years, and it achieved second place by (3%).A large proportion of these three countries' exports of goods involve computers, hardware, mobile phones and other high-tech goods. (See table 12). As for ICT services exports, the average of these exports in the ESCWA region was about (11%). For 2008 and 2009, in some ESCWA member countries, a large proportion of total service exports are information technology services, Kuwait reached about (45.9%) in 2008 and (60.9 %) in 2008. in 2009, it reached (18.9%)in Yemen. In 2008, however, Yemen's performance declined significantly in 2009, to only about (8.5%), and in many countries in the region in 2009, practically Egypt, Iraq and Palestine [10] .

Table(12) ICT exports and imports in selected Arab countries, 2008-2009

Country	Goods				Services	
	ICT exports (percentage of total goods exported)		ICT imports (percentage of total imported goods)		ICT exports (percentage of total services exported)	
	2008	2009	2008	2009	2008	2009
Jordan	5.5	3.1	7.2	5.4	..	..
UAE	2.0	2.0	5.3	5.3	..	..
Bahrain	0.1	0.1	2.3	2.3	..	..
Syrian Arab	0.6	0.2	2.0	1.4	4.5	4.4

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Sudan	..	..	2.3	4.7	1.2	1.2
Iraq	..	..	..	..	3.3	0.6
Oman	1.6	1.5	3.2	3.2	..	..
Palestine	..	..	..	..	7.6	5.4
Qatar	..	..	8.2	8.2	..	..
Kuwait	0.3	0.4	6.0	7.2	45.9	60.9
Lebanon	1.9	3.0	3.6	3.5	1.9	2.9
Egypt	1.8	1.8	4.4	4.4	7.3	4.7
Saudi Arabia	0.4	0.3	8.0	4.6	..	..
Yemen	0.3	0.1	1.8	2.5	18.9	8.5

Source: United Nations Regional Profiles of the West Asian Information Society, ECONOMIC and Social Committee for Western Asia (ESCWA, Beirut, 2011, p. 152).

To track the impact of ICT on economic growth, studies have shown that there has been growth in the level of ICT contribution to GDP in most selected Arab countries over the past ten years from (2.9%). On average in 2000 to (3.5%) In 2008,(3.4%) of the population was in the world. 2009, according to world bank data [(11)]. The average of Arab countries exceeded the world average of (3.2 %) during the same period. In 2008 and about (3.1%) In 2009. It is worth mentioning that ICT revenues in the Arab region depend mainly on the revenues of telecommunications services between 2008 and 2009, and among the selected Arab countries, Lebanon is the leading in terms of the percentage of telecommunications revenues in GDP estimated at (8%), followed by Jordan (6.3%), while Palestine, Yemen and Qatar have the lowest rates,(1.7%) in Qatar And about (1.2%) in Yemen and Palestine (0.8%), as shown in table data.

Table(13) ICT sector revenues in selected Arab countries 2008-2009

Country	GDP in 2008 (billions of dollars)	Telecommunications sector revenues in 2008 (percentage of GDP)	Telecommunications sector revenues in 2009 (percentage of GDP)
Lebanon	29933	7.9	7.9
Jordan	22696	6.7	6.3
Bahrain	21902	4.1	4.1
Egypt	162836	3.7	3.7
Iraq	86523	3.5	3.5
Kuwait	148023	3.5	3.5
Sudan	60299	3.3	3.2
UAE	58032	3.1	3.1
Syria	261347	3.0	3.0
Saudi Arabia	54516	2.7	2.7
Oman	476304	3.4	2.5
Qatar	110712	1.8	1.7
Yemen	26917	1.2	1.2
Palestine	11950	0.8	0.8
Average in region		3.5	3.4
ESCWA			
Average in the world		3.2	3.1

Source: United Nations Regional Profiles of the West Asian Information Society, ECONOMIC and Social Committee for Western Asia (ESCWA, Beirut, 2011, p. 150)

When comparing the proportions of exports and imports of ICT goods, the Arab region recorded better results in the import index, with imports of ICT goods exceeding those of exports in all ESCWA member countries except Tunisia. A study of ICT imports and exports shows that the difference was even greater in the Arab region in 2011, with an average total import of ICT goods (4.19%) Of the total imports, exports of these goods

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were (1.62%) and Tunisia still had much higher export rates of ICT goods than other Arab countries, with exports of about (7.38%)in 2011, there was a significant increase from (6.53%) in 2010. In Lebanon, there was a significant decline in the proportion of ICT goods exports between 2010 and 2011, down from (7.11%) in 2010-2011, to (0.95%) because of the political tension as a conflict area. Morocco was secondly level after Tunisia with (3.8%). The United Arab Emirates followed with a (2%) increase in exports of ICT goods in these three countries consisting of computers, equipment components, mobile phones and others. As for ICT services exports, the situation is better because the average exports in the Arab region are about (15%) of the total services exported in 2010-2011. As a result of efforts in some countries of the region to promote exports of ICT services, business network services, teleconferencing and computer and information services, which in turn include databases and data processing, software design and development, maintenance of information systems, and news agency services. Within one year, the volume of ICT exports doubled in 2011 to about (48%). Of the total services exported by Lebanon. In other countries, ICT services exports still account for a significant share of total services exports. The same applies in Kuwait, where exports accounted for more than (38%) of exports in 2010, and it reduce to about (35%) 2011. In Bahrain, exports accounted for more than (23%) of exports in 2010 and it increase to about (28%) 2011. However, this figure has dropped significantly in Sudan from about (26%) in 2010 to (6.28%) 2011 was mainly reason to the prevailing political tension and the secession of South Sudan in 2011. As can be seen from table data (14).

Table (14) Exports and imports of ICT goods and services in selected Arab countries (2010-2011)

Country	Goods				Services	
	ICT exports (proportion of total exports of goods))		ICT imports (proportion of total imports of goods))		ICT exports (proportion of total exports of services))	
	2010	2011	2010	2011	2010	2011
Jordan	1.29	1.47	4.26	4.09	..	..
UAE	2.00	2.00	4.50	4.50	..	..
Bahrain	0.25	1.83	2.81	5.79	23.11	27.97
Tunisia	6.53	7.38	6.31	6.63	8.22	10.76
Syria	0.02	..	1.10	2.20	1.90	2.50
Sudan	..	..	3.30	3.30	25.80	6.28
Iraq	..	..	..	..	4.51	4.36
Oman	0.10	0.14	2.40	2.91	24.66	15.01
Palestine	1.35	1.30	2.75	2.80	6.01	6.00
Qatar	..	..	4.28	4.28	..	..
Kuwait	0.30	0.30	6.40	6.40	38.15	35.33
Lebanon	7.11	0.95	2.79	2.34	26.54	47.78
Egypt	0.14	0.16	3.75	3.46	8.77	7.04
Morocco	3.77	3.80	5.87	5.90	20.15	20.11
Saudi Arabia	0.11	0.10	7.17	7.20	3.39	2.92
Yemen	0.04	0.01	1.34	0.99	6.66	8.65
Average	1.77	1.62	3.94	4.19	15.22	14.98

Source: United Nations Regional Profiles of the West Asian Information Society, ECONOMIC and Social Committee for Western Asia (ESCWA, Beirut, 2013, p. 149).

In 2014,Tunisia recorded the highest rate of ICT goods exports, at about (6%), Saudi Arabia with the highest rate of imports of ICT goods when it achieved more than (7%) of total imported goods. With regard to ICT services exports, Algeria achieving first with a performance of more than (60%), followed by Kuwait with more than (49%) and Lebanon achieving about (35%), see table (15).

Table (15) Exports of selected Arab countries of ICT goods and services and imports 2014

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Countries	ICT exports from total exported goods (%)	ICT imports from total exported goods (%)	Exports of ICT services from total exported services (%)
Bahrain	0.6	3.3	21.6
Egypt	0.4	3.6	10.5
Algeria	0.0	4.2	60.5
Iraq	..	..	12.0
Jordan	1.4	3.5	..
Kuwait	0.1	6.8	49.3
Libya	..	3.6	..
Lebanon	0.9	3.1	34.8
Morocco	2.9	3.6	22.7
Oman	0.1	2.4	15.2
Qatar	0.0	5.6	..
Saudi Arabia	0.2	7.4	2.4
Sudan	0.0	3.8	9.3
Syria	0.0	2.2	2.5
Tunisia	5.8	5.8	10.1
Yemen	0.0	1.2	22.0

SOURCE : The World Bank, The Little Data Book on Information and Communication Technology, Washington – 2015. pp. 20-22 .

In a related context, most selected Arab countries recorded relatively low exports of manufactured goods in 2011-2014, while the United Arab Emirates led by (18%).In 2011 it increase to (22%) And (24%) in 2012, 2013, respectively,(see table 16).

Table(16) Exports of selected Arab countries from IT industries and their proportion of world exports (2011-2014)

Countries		2011	2012			2013	2014	
	Export value (million dollars)	Share of world export (%)	Export value (million dollars)	Share of world export (%)	Shareo f world export (%)	Export value (million dollars)	Export value (million dollars)	Share of world export (%)
Jordan	94	0.01	20	0	102	0.01	142	0.01
Bahrain	115	0.01	9	0	7	0	0	0.03
Tunisia	1	0.01	814	0.07	811	0.07	777	0.07
Saudi Arabia	82	0.01	117	0.01	89	0.01	101	0.01
Oman	67	0.01	56	0.01	48	0	-	-
Qatar	13	0.0	23	0.0	29	0.0	-	-

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Kuwait	9.244	0.0	13	0.0	9	0.0	63	0.0
Lebanon	25	0.01	23	0	26	0	29	0
Egypt	46	0.0	72	0.0	120	0.0	760	0.1
Morocco	33	0.0	96	0.0	97	0.0	108	0.0
Uae	2	0.18	2.448	0.22	2.621	0.24	-	-
Iraq	13	0.0	5	0.0	4	0.0	-	-

Source: Table prepared by the researcher based on data quoted from:
Consolidated Arab Economic Report, Arab Monetary Fund, Economic and Technical Department, 2013, p. 418.
Consolidated Arab Economic Report, Arab Monetary Fund, Economic and Technical Department, 2014, p. 431.
Consolidated Arab Economic Report, Arab Monetary Fund, Economic and Technical Department, 2015, p. 481.
Consolidated Arab Economic Report, Arab Monetary Fund, Economic and Technical Department, 2016, p. 504.

In 2016, there were significant changes in ICT exports in most selected Arab countries, with Lebanon ranked first in the Arab world in the volume of its exports of high-tech goods, with exports of ICT goods at about (16.1%), while its ICT imports amounted to about (2.5%). Tunisia followed, but declined from previous years, when it achieved (5.4%), and Bahrain recorded a rate of(4%). Like exports of ICT goods, Iraq's technological balance of payments reached a surplus of about (0.5%). Exports were more than (20%). Of the total exports, according to the re-export mechanism of origin. (See table 17).

Table (17) Exports and imports of ICT goods and services from selected Arab countries

Country	ICT goods exports 2016 (%)	ICT goods imports 2016 (%)	ICT services exports 2016 (%)
Bahrain	4.0	4.6	21.6
Egypt	3.7	4.5	6.9
Algeria	0.0	5.4	50.7
Iraq	..	0.5	20.2
Jordan	1.8	4.4	5.6
Kuwait	0.2	7.6	46.9
Lebanon	16.1	2.5	23.2
Morocco	2.2	4.1	20.3
Oman	3.1	3.1	18.5
Qatar	0.1	5.8	4.2
Saudi Arabia	0.2	7.8	1.8
Sudan	0.0	2.2	5.7
Tunisia	5.4	5.6	12.2
UAE	2.3	4.9	..
Yemen	0.1	1.1	17.7

SOURCE: The World Bank, The Little Data Book on Information and Communication Technology, Washington، 2018 . pp. 20-23.

The low efficiency of the performance of the techno-economic environment in Arab countries in the foreign trade sector, which is closely related to industries specializing in the production of technological knowledge goods and services, is partly reduce to the low level of research and development financing as a proportion of GDP, which is an indicator of research and development inputs , as well as the absence of a techno-economic policy, as technology-intensive exports reflect one of the indicators of research and

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development outputs as a proportion of total exports. As funding for research and development in Arab countries is low in terms of economic environments based on the nature resources - based economies base, and it forms a growing gap according to the indicators of economic environments based on the technological knowledge base (12) .

CONCLUSIONS

1. The solid empirical evidence of foreign trade in the goods and services of the technological knowledge industries has been demonstrated by the low efficiency of the performance of its indicators, namely, the ratio of the intensity of exports of high, medium and low technological knowledge products in total exports, the proportion of ICT exports from GDP and the exports of information and communication services from total exports of commercial services, as well as high-tech exports of total industrial exports.
2. The results showed that the environment of the Arab economies is an importer of technologies. The technological balance of payments was in deficit unless changes were made in technological policy and traditional institutional regulations based on low levels compared to comparable economic environments, in terms of spending on innovative activities, research and development, education and ICT as a proportion of GDP.

RECOMMENDATIONS

1. Freeing the markets of the technological sector from monopolistic pressures and the tendency to enhance competition in order to provide technological services at low prices by increasing spending on the education, research, development and innovation sectors and strengthening the partnership between the public and private sectors and civil society institutions.
2. The importance of providing the appropriate investment environment for the development and growth of technological activities in order to attract international, regional and local investments, and the need to create a technological structure and a legal environment that stimulates the growth of the activities of the technological sector and its applications.

SOURCES AND REFERENCES: -

1. M. Borrus and J. Stowsky "Technology Policy and Economic Growth، Working Paper No.97 "Berkeley Round table on International Economy، University of California، Berkeley" 1997.
2. Salih Mahdi Al Burhan, Foreign Trade in The Goods and Services of Technological Knowledge Industries: The Environment of The Economies of Selected Arab Countries Comparative Case, Al Kut Journal of Economic and Management Sciences, issued by the Faculty of Management and Economics, Wasit University, Folder (1), number (5), 2011.
3. Salih Mahdi Al Burhan, Foreign Trade in Technological Knowledge Industries Goods and Services: The Environment of Selected Arab Economies, Comparative Study Case, Previous Source, 28.
4. Hashim al-Shammari, Nadia Al-Laithi, Cognitive Economy, First Edition, Safaa Publishing, Printing and Distribution House, Amman, Jordan, 2008 p. 44.
5. United Nations, E/ESCWA/SDPD/2003/5,op. Cit, pp19-.20.
6. Salih Mahdi Al Burhan, Foreign Trade in Technological Knowledge Industries Goods and Services: The Environment of Selected Arab Economies, Comparative Study Case, Previous Source, p. 31
7. Jamal Qassem, Mohammed Ismail, Competitive Commodity Exports in Arab Countries, Arab Monetary Fund, Abu Dhabi, 2011, p. 12-18.
8. United Nations ، Regional Profile of The Information Society in Western Asia 2011، Economic and Social Commission For Western Asia ،2011، Op .cit. ، p، 153.
9. United Nations, Annual Review of Developments in Globalization and Regional Integration in Arab Countries, (ESWA), New York, 2009, p. 78.
10. United Nations, Regional Profiles of the Information Society, Economic and Social Commission for Western Asia (ESCWA)2011, previous source p. 153.
11. The United Nations, the regional features of the Information Society in West Asia, the Economic and Social Commission for Western Asia (ESCWA), Beirut, 2011, previous source p. 150.
12. Salih Mahdi Al Burhan, Foreign Trade in Technological Knowledge Industries Goods and Services: The Environment of Selected Arab, Economies, Comparative Study Case, Previous Source, p. 31.