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The effect of the technology transfer on economic development

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Introduction

The process of technology transfer is very important in the world in particular , third world and this chapter has talked about couple of subjects are very important

the first is technology transfer and the second is economic development .

Africa has great facilities and capabilities, they give to foreign investors opportunities to draw great plans of investments in Africa and in the end, increasing of capabilities of economic and increasing of individuals incomes through investment projects in African countries.

If we look at the concept of economic development , we will find almost all fields of life in this concept such as education , health , culture and others . People need to develop their life through tools of technology transfer such as tools of laws , legislation , investments to they can see fruits of technology between their hands.

Through next lines , we will find the role of international organizations in the process of technology transfer and will find the concept of economic development between several fields in the life and how can people there get on benefits of technology and effect of technology on their life.

In order to we can understand this chapter well, need to put map to this chapter to explain how is technology transfer to Africa therefore , this chapter has divided to three parts as following :

1-The role of FDI to technology transfer in developing countries.
2- The attractive policies of FDI.
3- Operations of FDI between developing countries to TT and highlights SSA

These previous parts will help us to explain goal of chapter to reader represents , understand of African economy to create Egyptian economic arms there through partnership with china to achieve this goal.

The chapter two

Technology transfer to developing countries and economic development in the sub Saharan Africa

in the past or in the present, countries around the world seek to improve their life through new products whether local products or foreign products , The process of commercial exchange has taken different forms among countries and has taken different forms of theories. In order to implement the process of technology transfer from a country to another, we need several factors such as FDI, legal frameworks, different policies and operations of economic among countries whereas, The research aims to technology transfer to developing countries. The researcher offers the process of technology transfer to developing countries with knowledge that, Egypt is considered developing countries then , we will study countries close to Egypt . The researcher will highlight SSA to determine economic position to them to draw economic policies among them and Egypt as we will see in this chapter.

The researcher will offer the process of technology transfer through rates of investments position of research and development and How can SSA protect themselves and foreign investors by rules of intellectual property rights under umbrella of WIPO over its program to improve performance of developing countries in fields of intellectual property rights ,rules ,laws and legislation.

Also the researcher will offer positions of others countries with regard to different laws related to investment environment and in the End, different economic indicators to SSA such as GDP and others.

Part one

The role of FDI to technology transfer in developing countries

2.1 Contribution of TNCs to technology transfer

DFI and technology transfer have the same core, which is the internationalization of production[1] **(ELSAYED AHMED ABDEL KHALEK: 62).** The rapid global expansion of TNCs through Foreign Direct Investment (FDI) has resulted in their becoming the dominant or control of force in international commerce. In 2001, the world's 65,000 TNCs and their 850,000 foreign affiliates accounted for about two thirds of world trade. Operational data may Include statistics can clear, what extent the impact of direct investment on the labour market, on technology transfer, innovation, and research and development (R&D), on the sources and uses of investment funds, on international trade, and on economic efficiency and competition**(united nations, 2009: 1,2,3).**

Foreign Direct investment by TNCs has a long history in the nineteen century, with knowledge that, The first wave had taken place in the period 1820-1914, and was characterized by North to South FDI in primary product sectors and railroads. The Second wave initialized in the 1960s and still continues nowadays **(María C. Latorre, 2006: 2008, 1).**

International production continued to expand in 2013, rising by 9 percent in sales, 8 percent in assets, 6 percent in value added, 5 percent in employment, and 3 percent in exports. TNCs from developing and transition economies expanded their overseas operations faster than their developed-country counterparts or MNCs which similar elements, but at roughly or the same surface, the same rate of their domestic operations, thus maintaining – overall – a stable internationalization index. Cash holdings by the top 5,000 TNCs remained high in 2013, accounting for more than 11 percent of their total assets. Cash holdings (including short term investments) by developed-country TNCs were estimated at $3.5 trillion, while TNCs from developing and transition economies held $1.0 trillion. Developing-country TNCs have held their cash-to-assets ratios relatively constant or continually over the last five years, at about 12 percent. In contrast, the cash to- assets ratios of developed-country TNCs increased in recent years, from an average of 9 percent before the financial crisis to more than 11

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[1] The process of establishing production relations between enterprises of different countries whereby the production of a country increasingly becomes a part of the world production process.

percent in 2013. This increase implies or as evident indirectly that, at the end of 2013, developed-country TNCs held $670 billion more cash than they would have before – a significant brake or slow on investment **(world investment report, 9, and 2014).**

There are a lot of writers and economists say the TNCs have a power of economic around the world and seek to achieve their interests and guided by their policies, All previous words and thoughts, the researcher respects them but in the same time, the researcher would like to say that there is no problem that TNCs move to their interests for a several reasons as follows:

1 – Historical factors have given power to TNCs, the industrial revolution has granted developed countries competitive Advantage while the Arab world was under the political conflicts and regional wars.

2- The researcher wants to ask a question to writers and economists support the previous thoughts, how can developing countries control the world economy to achieve their interests? The developing countries do not have facilities and capabilities enough to achieve those goals because the economic sectors are very poor and weak infrastructure, in Contrast, an interest of developing countries with TNCs on the same system, developing countries need dollar to import food and goods. The researcher does not say Surrender but hard working to address all previous problems in the structure of economic. the biggest evidence on my words that the policies makers in Egypt seek to improve the Egyptian economy ,these are good efforts but step by step to posses great economy one day .

2.2 Rate of FDI in developing countries

for more understanding, relationship between FDI and technology transfer is to achieve the main goal "economic development" the researcher offers this an important aspect of DFI in developing countries.

Unfortunately, developing countries have, mostly, no strategic policy regarding this issue: not enough experts capable of absorbing, imitating or adapting the Introduced technology, supposing or believe as true they have chance to get access to it. Countries which have relatively capable staff, Suffer from the lack of Organization that can link the Productive sector with the technological one**. (ELSAYED AHMED ABDEL KHALEK: 71).**

In spite of previous negative performance in developing countries we find that there are a lot of benefits FDI can facilitate the transfer of intangible assets such as technology, skills, and management know-how, thus helping to directly boost productivity, and growth; in addition, FDI may help secure foreign market access **(IMF:2).**

We looked at FDI in the Developing countries in 1980; we found difficult position in the several sectors, Automatically it affect on the rate of foreign investment. The oil shocks of the 1970s and early 1980s, coupled with rapid population growth in developing countries, increased the demand for indigenous or growing of energy sources and technologies in developing countries and thus the need for renewable energy technology transfer. In the 1990s market globalization accelerated and the availability of private capital on a global scale or worldwide increased, as did competition between global vendors or providers of technology. Market restructuring through liberalization and privatization started to spread out to some developing countries. With privatization, the role of governments in the technology transfer Process changes. Prior to privatization and restructuring, governments (through their national utilities) played an active role as recipients in the process. Since privatization and restructuring they have begun to concentrate more on regulating trade and promoting enabling policies (economic incentives; legal aspects of innovation policies). Governments now have a key role in facilitating the diffusion of technology through creation of an adequate institutional infrastructure with high-quality engineering education, promotion of R&D activities, adequate industrial standards and flexible market mechanisms **(Gill Wilkins, 2002:43).** However, FDI has become increasingly important for the introduction of new technologies in developing countries. Some recent analysis shows a clear correlation over a group of 20 developing countries between a decline in energy intensity or great energy (primary energy use per unit of GDP) and increase in FDI. The most likely reason for this is that modern technology is increasing in developing countries with an increase in FDI, helping them to leapfrog or redevelop the old inefficient technology used formerly. Although the rate of increase slowed during the financial crisis of 1997–9, FDI flows to developing countries remained resilient or capable of returning as they are reasonably long-term in nature. FDI flows to developing countries were estimated to be US$171 billion in 1998, rising to US$192 billion in 1999, representing 2.8% of the GDP of the recipient countries. Between 1995 and 1996 only 34% of FDI flows went to developing countries, and if this proportion is to be increased, policy, legal and institutional conditions need to be strengthened to

attract a greater proportion of investment to developing countries. South–South private investment from newly industrialized countries is an important element, accounting for one-quarter of total private investment in 1992. **(Gill Wilkins, 97, 98:2002).**Technology transfer is very important to the developing countries, it helps the improvement of level income, the life generally, and in the same time, the sector of energy is very important to all countries around the world Particularly, the developing counties which seek to improve infrastructure and level of economic performance then economic development.

FDI is an important channel available to open economies to complement domestic savings and contribute to domestic capital accumulation. In 2012 Africa received $50 billion in FDI inflows, representing about 3.7 percent of global inflows. While the amount of inflows received by the continent in 2012 represents an increase relative to the $44 billion received in 2010, it is still less than the 2008 figure of $59 billion which was about 3.2 percent of global inflows. **(Economic development in Africa report 2014, 60, 61).**

FDI flows to developing economies reached a new high at $778 billion, accounting for 54 percent of global inflows, although the growth rate slowed to 7 percent, compared with an average growth rate over the past 10 years of 17 percent. Developing Asia continues to keep the region with the highest FDI inflows, significantly above the EU, traditionally the region with the highest share of global FDI. FDI inflows were up also in the other major developing regions, Africa (up 4 percent) and Latin America and the Caribbean up 6 percent, excluding offshore[2]. Although FDI to developed economies resumed or took again its recovery after the sharp fall in 2012, it remained at a historically low share of total global FDI flows (39 percent), and still 57 percent below its peak in 2007. Thus, developing countries maintained their lead over developed countries by a Margin and it refers to financial instrument of more than $200 billion for the second year running. Developing countries and transition economies now also constitute half of the top 20 economies ranked or their position is very high by FDI inflows. Mexico moved into tenth place. China recorded its largest ever inflows and maintained its position as the second largest recipient in the world. FDI by transnational corporations (TNCs) from developing countries reached $454 billion – another high record. Together with transition economies, they accounted for 39 percent of global FDI outflows, compared with only 12 percent at the beginning of the 2000s. Six developing

[2] foreign country of financial centers

and transition economies ranked or arranged among the 20 largest investors in the world in 2013. Increasingly, developing-country TNCs are acquiring foreign affiliates of developed-country TNCs in the developing world **(world investment report, 1, 2, and 2014).**

This point offers the issue of technology transfer to developing countries , more clearly, technology transfer among developing countries, Egypt is a one of state of the developing and its cooperation and operations with all countries around the world whether developing or developed , the researcher and reader need to know , what is the type of cooperation and operations among developing countries to good understand to nature of economy of Africa in order to enable Egyptian government to draw good plans with developing countries to increase investments projects with them.

The researcher supports the process of technology transfer between developing countries. as we have seen above both developing and developed countries have TNCs and MNCs. and we know missions of them represent going to a broad to investment ,in the same context, Egypt has economic arms around the world and Egypt is considered developing country also has investments abroad through company of Arab contract , in particular, in Africa .

the previous words above with regard to, rate of investments in developing countries have increased long term and also I have mentioned that developing countries do not have facilities enough and experts and with days, rates of investments have increased then we can say, developing countries have witnessed improvement in capabilities of facilities of investments such as infrastructural , frameworks of laws and others., The researcher wants to remind reader, the chapter aims to explain African economies to create power of Egyptian economic there through what called "Egypt is a gate of Africa to china" to arrive to the main aim represents issue of economic development. The researcher offers the process of technology transfer on the ground by FDI through operations in the several countries in developing countries as follows:

2.3The studies cases of technology transfer to developing countries

The government of Indonesia (GOI) considers rural electrification to be a means of promoting social and economic development in rural areas. Indonesia's rural population is spread over about 6,000 of its 16,000 islands, so it is not economic to provide all areas with access to primary grid or back electricity **(Gill Wilkins, 178:2002).**

Case study 1: solar home systems in Indonesia.

This project aims to provide electricity to rural areas therefore; several parties have been cooperated to implement this goal, this respected project was funded by a presidential grant through the development budget totaling Rp3.4 billion (approximately US$1.6 million at the time) and employed a revolving or centered fund mechanism. Private companies installed the systems and had responsibility for training technicians and providing after-sales support in the form of Warranties or sells of guarantee, spare or avoid do something parts and advanced technical Assistance as needed by KUDs **(Gill Wilkins, 178:2002)**.

Case study 2: solar home systems in the Philippines

PV technology has until recently been seen in the Philippines primarily as a pre-electrification technology rather than a permanent or lasting energy solution. In 1987 the Special Energy Programme (SEP) was initiated under a bilateral agreement between the German government and the Philippines government. The strategy of this Programme was to install SHS in clusters or similar elements, gradually increasing the demand for electricity and the area covered until grid or back extension became an economic alternative. However, the population of the Philippines is spread over approximately 2,800 of its 7,100 islands and islets, and consequently, mini-grids or stand-alone systems are the more practical and economic route to electrification in many cases**(World Bank).**Technology transfer is a great tool to improve the life of people as we have seen above, direct foreign investment is a main tool to technology transfer, and the Researcher would like offer a several operations of cooperation between countries for better understand.

The first operation in the Ethiopia and project name is regional pastoral or rural livelihoods and parties finance are the RPLRP is funded with US$122.0 million

equivalent or equal over a five year period to work with Kenya (US$77 million equivalent), Uganda (US$40 million equivalent) and IGAD (US$5 million equivalent). Therefore, a lot of areas in Ethiopia is very poor, and Ethiopia government seeks to improve its areas and has a several agencies which help it, with the implement its policies.

There are several parties will get benefits of the project

A-The main beneficiaries of this project will be pastoral and agro-pastoral communities.

B-The AF is expected to directly benefit 132,000 Ethiopian households, these beneficiaries will add to the 135,000 Households (93,000 in Kenya, 42,000 in Uganda) directly benefited in the first phase, and make it a total of 267,000 Households in the three countries, not including indirect beneficiaries.

C- In addition to its direct beneficiaries, the project would also potentially support private sector actors involved or Connected by participation or association in livestock trade, veterinary [3]and input supply and decentralized or distribution veterinary services staff in the Woreda/districts/counties along borders as well as institutional beneficiaries including local governments, service providing agencies (both public and private), and associations (cooperatives and their unions, livestock exporters associations, pastoralists' associations, etc.) **(World Bank).**

As we have seen above, the projects aim to improve national economy and increasing of rate of employment with regard to, the project of electricity aims to improve life of people. brief, the main goal is economic development so that issues of economic development are all issues of people and also there are couples of factors that are very important which represent cooperation between countries of regional and this is biggest evidence that technology transfer process is very complex.

On the other hand, finance of project whether by national institutions or international institutions is very important in the process of technology transfer . In the end, the researcher says that technology transfer needs several parties to implement it on the ground.

Technology transfer to developing countries is carried out by developed countries. When we see on the map of global economic, we will find that the world is divided as follows:

[3] related to animals medicine drug

The North America's technology goes to South America , china's technology goes to East Asian, France to its previous colonies in Africa. It is a natural matter because historical relationship between them like France and Africa. **(Nagesh Kumar, 28،29،30:1998)** but the search's goal is creating cooperation environment between china and Egypt and in order to we see this goal on the ground, we should create incentives to china to do this and in the recent years, the Chinese investments in Africa have increased consequently, the goal is close. And also there are several economic institutions have sites in different countries around the world and promote skills and experiences there such as GSK has 41 manufacturing sites outside Europe and North America. The list includes sites in Algeria, Nigeria, Sri Lanka, Kenya, Pakistan and the Philippines, and one in an LDC (Chittagong, Bangladesh).

Collectively, they form part of the company's business strategy and were established in response to a business need or, in some circumstances, because of local government insistence or demand firmly on "local working" as part of the product registration process. By operating these manufacturing sites, GSK promotes the development of skills and technical expertise of the workforce in those countries. GSK also has a Programme of "know-how" transfer to local manufacturers whereby we outsource production of products as part of a carefully managed production cycle aimed at freeing up GSK production capacity for the development of new drugs and vaccines[4]. production Transfer usually occurs post-patent expiry for products which local operating units which are considered of strategic and/or commercial importance in local or regional markets. They remain GSK branded or identified products, sold and marketed by the company; however production is done by a third party contractor, with the necessary regulatory and technical support from GSK to ensure compliance or flexibility with local and international standards**("Technology Transfer", Capacity Building and the Developing World, GSK Public policypositions,4).**

As we have seen above , economic cooperation occurs between several parties to technology transfer to developing countries whether between developing countries or developed countries but the researcher wants to mention type of operations of cooperation (sector of electricity) and as we know the energy sector needs advanced technology to achieve goals of economic and environment and in order to implement it on the ground ,directly , we need advanced ideas and the main way to achieve it by research and development , The next part we will talk about it.

[4] A **vaccine** is a biological preparation that provides active acquired immunity to a particular disease.

The part Two

The policies attractive of FDI as one of mechanisms of technology transfer

2.4 research and development

The R&D play an important role in the growth of economic Therefore, the researcher offers important information about the rates of expenditures on the R&D around the world in the different countries, these data will provide the researcher with good analysis about map of R&D to give commands of economic to cooperation between Egypt and rest of the world in the different fields which play main role of growth rates and rates of employments then economic development.

There has been a slight improvement in the situation of these countries in R&D expenditures from 2% in 1963, 4% in 1974 to 6% in 1980 of world totals but, a according to UNCTAD, such a limited proportion of the world's share in confined or limited to no more than a dozen countries, mostly in south East Asia. The share of developing countries expenditures on R&D has not yet reached 0.5% of their GNP.

The R&D in developing countries extends to different fields and expenditures are high in the field about another. In India, for instance, about 60 % of its R&D expenditures is devoted or affected to atomic energy, defense, and space exploration. In china, the defense field employs some 20 % of research scientists and 15% of the research budget

There is an argument that the military sector might play an important role on the level of civil and civilian might get of it on several benefits. A highly skilled labour force trained in this sector could benefit the civilian one, when they move to civilian Sector. In addition, military expenditures may increase demand for the existing industries inputs or create new ones such as an iron and steel industry in Argentina. Military firms in India have provided the market with May products for civilian consumption such as radio components, transmitters and receivers, earth moving equipment, ships and rail way or coaches.

There is a big problem in the developing countries related to R&D and productive sectors , There is not a link between institutions of R&D and industrial fields Therefore , the problem leads to a gab between results of research and development and needs of market on the ground . Such characters which result in the waste of limited resources devoted or affected to R&D activities. And, in the best cases, it has been kept to minimum such a situation results in the alienation or transferring of property of local research units from the productive sector. Thus, this sector, especially, the modern one gets integrated to foreign economics. In this case it reflects their interests more than local ones. in consequence and overtime , local R&D units themselves become devalued or changed value , and tend just to imitate or use those in developed countries , producing irrelevant and poor copies of them and hence the perpetuation or indefinitely of technological dependency **(Jeffrey Wadsworth, Ph.D. 2013:5).**

The average firm in the UNCTAD survey spent 28 percent of its R&D budget abroad in 2003, including in-house or conducted within expenditure by foreign affiliates and extramural or outside spending on R&D contracted out to other countries. The share of R&D workers abroad in total R&D employees was similar. Within this global picture, significant differences existed in the degree of internationalization of R&D based on the share of foreign to total R&D expenditure between different countries of origin Japanese and Korean TNCs displayed or show the lowest share of foreign R&D (15 percent and percent, respectively). United States TNCs were also below the average (24 percent).

Conversely or in contrast, in an exchange of thoughts, Western European TNCs reported the highest levels of R&D internationalization (41 percent on average). Within Western Europe, companies from the United Kingdom (66 percent) and Switzerland (61 percent) had the most internationalized R&D activities **(UNITED NATIONS, 5, 6:2005).**

In 2014, ten countries spent about 80% of the total $1.6 trillion invested on R&D around the world; the combined Investments by the U.S., China and Japan will account for more than half of the total. Together, the U.S., China, Japan and Europe account for about 78% of 2014's $1.6 trillion total.

Between 2011 and 2013, the situations of growth in the R&D have changed, Growth in global research and development funding slowed in 2013 from the pace or slowly of growth seen in 2011-2012. The 2013 slowdown was due primarily to unsettled European and U.S. economies that, in turn, affected global performance with knowledge that, R&D rankings or position in the list have not changed significantly in the past five years, but differences have narrowed or limited in funding levels between countries. These top ten countries spend about 80% of the total $1.62 trillion invested in R&D around the world; the combined investments by the U.S., China and Japan is more than half of the total**(Jeffrey Wadsworth, Ph.D. 2013:5).**

Before 2014 about five years ago, the U.S., Canada and Mexico were responsible for nearly 40% of global R&D. That share has dropped to about 34%, with the U.S. shrinking or to become smaller from a 34% share in 2009 to 31% 2012. Europe has experienced a similar decline from 26% in 2009 to less than 22% in 2014. Where the west has retrenched or cut down, Asia has advanced. In the same five years, Asia's share of R&D investments has risen from 33% to nearly 40%, with China rising from 10% to nearly18%. China's high level of research intensity or great amount has now been sustained for nearly 20 years, and its total R&D investments are now more than 60% those of the U.S **(Jeffrey Wadsworth, Ph.D. 2013:5).**

2.1 Share of total global R&D sending

countries	2012	2013	2014
Americas (21)	34.5%	34.0%	33.9%
U.S.	32.0%	31.4%	31.1%
Asia (20)	37.0%	38.3%	39.1%
China	15.3%	16.5%	17.5%
Japan	10.5%	10.5%	10.2%
India	2.7%	2.7%	2.7%
Europe (34)	23.1%	22.4%	21.7%
Germany	6.1%	5.9%	5.7%
Rest of World (36)	5.4%	5.3%	5.3%

Source: Battelle, R&D Magazine

(Jeffrey Wadsworth, Ph.D. 2013:5).

2.2 Forecast Gross expenditures on R&D

		2011			2012			2013		
	Countries	GERD* *PPP Bil, US$*	R&D *as % GDP*	GDPPPP BIL, U$$	GERD *PPP Bil, US$*	R&D *as % GDP*	GDP *PPP Bil, US$*	GERD *PPP Bil, US$*	R&D *as % GDP*	GDP *PPP Bil, US$*
1	United States	447	2.8%	15,940	450	2.8%	16,195	465	2.8%	16,616
2	China	232	1.8%	12,610	258	1.9%	13,568	284	2.0%	14,559
3	Japan	160	3.4%	4,704	163	3.4%	4,798	165	3.4%	4,856
4	Germany	92	2.8%	3,250	92	2.8%	3,266	92	2.9%	3,312
5	South Korea	59	3.6%	1,640	61	3.6%	1,686	63	3.6%	1,748
6	France	52	2.3%	2,291	52	2.3%	2,296	52	2.3%	2,319
7	United Kingdom	43	1.8%	2,375	44	1.8%	2,408	44	1.8%	2,454
8	India	40	0.9%	4,761	42	0,85%	4,942	44	0.9%	5,194
9	Russia	38	1.5%	2,555	38	1.5%	2,593	40	1.5%	2,671
10	Brazil	30	1.3%	2,394	31	1.3%	2,454	33	1.3%	2,515
11	Canada	29	1.9%	1,513	29	1.9%	1,537	30	1.9%	1,571
12	Australia	22	2.3%	987	23	2.3%	1,012	23	2.3%	1,040
13	Taiwan	21	2.3%	918	22	2.3%	938	23	2.4%	974
14	Italy	23	1.3%	1,863	22	1.2%	1,829	22	1.2%	1,842
15	Spain	19	1.3%	1,434	18	1.3%	1,415	18	1.3%	1,418
16	Netherlands	15	2.0%	719	15	2.1%	710	15	2.1%	712
17	Sweden	14	3.4%	399	14	3.4%	403	14	3.4%	412
18	Israel	11	4.3%	253	11	4.2%	263	11	4.2%	271
19	Switzerland	10	2.9%	369	11	2.9%	375	11	2.9%	382
20	Turkey	10	0.9%	1,142	10	0.9%	1,185	11	0.9%	1,227
21	Austria	9	2.8%	365	10	2.8%	366	10	2.8%	372
24	Iran	8	0.8%	1,016	8	0.8%	1,001	9	0.8%	1,014
27	Poland	7	0.8%	814	6	0.8%	825	7	0.8%	844
28	Denmark	6	3.1%	214	6	3.0%	214	6	2.9%	217
29	South Africa	5	1.0%	592	6	1.0%	604	6	1.0%	621
30	Qatar	5	2.8%	191	6	2.8%	201	6	2.7%	211
38	Saudi Arabia	2	0.3%	922	3	0.3%	955	3	0.3%	997

*** GERD = Gross Expenditures on Research and Development PPP= Purchasing Power Parity (used to normalize Source: Battelle, R&D Magazine, International Monetary Fund, World Bank, CIA Fact Book**

As we have seen above the title of the chapter is Technology transfer to developing countries and economic development in the sub Saharan Africa but the researcher has mentioned in this part the role of R&D as part of the process of technology transfer to developed countries and also developing countries in spite of, the title has talked about developing countries. The reasons to mention the developed countries as following:

1- The R&D conducts in the developed countries and the researcher wants to spread this process in Egypt Therefore, the policy maker need more and more information about R&D, The researcher has mentioned rates of expenditures and the others researchers can focus on it more and more in the other researches.

2- The process of technology transfer is very complex so, what are the benefits of technology transfer on the host developing countries? Before answering, we need to know the differences between developing countries and developed countries from where rates of expenditures on R&D to determine backward and forward linkages to process of technology transfer as one of the important factors of analysis of economic power in different countries.

Through The last table about forecast Gross expenditures on R&D, we can read it as follows:

The united states sits on the top of global R&D as percentage of expenditures, The developed countries have occupied most advanced class in the world's expenditures and in spite of, china is a developing state but has occupied the second class around the world Therefore, it's not surprising that china has a strong economy and the researcher wants cooperation between it and Egypt. Also there is another note which is very important, there are other countries rate of expenditures lower than U.S as percentage of GEPD (Gross Expenditures on Research and Development) but we should look at rate of GDP and rate of population to determine effect of rate of expenditures on these countries. on the other hand, these countries have high rate of expenditures of GDP, this is the biggest evidence on the importance of R&D. after previous analysis the researcher can say the developed countries have power of R&D.

3-the previous position support the problem faces the developing countries represents gap between institutions of R&D and productive sectors, Therefore, the developing Countries need the experiences of developed countries in this field and naturally in other fields. And the merit of this chapter is R&D therefore, there is an important question , what is of meaning of technology transfer? Whatever, definition of it by Nasa paper and Nasa agency play important role in the process of scientific research in the United states and around the world therefore , The researcher can say Egypt cannot own strong economy unless own strong sector of R&D, and in the end ,unfortunately , Egypt is not mentioned in the list.

The R&D is a part of policies of economic and needs a protection to create safe environment to foreign investors to be able to go to a host countries with his inventions and new technology and his heart feel safe. Intellectual property rights provide this environment as we will see in the next point of chapter two.

2.5 The role of intellectual property rights in promote FDI in developing countries

To good understand what is the process of technology transfer ,we need to understand what is of meaning of intellectual property rights?

What are intellectual property rights?

Intellectual property rights are the rights given to persons over the creations of their minds. They usually give the creator an exclusive right over the use of his/her creation for a certain period of time.

Intellectual property rights are customarily divided into two main areas:

(i) Copyright and rights related to copyright.

The rights of authors of literary and artistic works (such as books and other writings, musical compositions or a piece of music, paintings, sculpture or works of art, computer programs and films) are protected by copyright, for a minimum period of 50 years after the death of the author.

Also protected through copyright and related (sometimes referred to as "neighboring") rights are the rights of performers (e.g. actors, singers and musicians), producers of phonograms (sound recordings) and broadcasting organizations. The main Social purpose of protection of copyright and related rights is to encourage and reward or resulted worthy creative work.

(ii) Industrial property. Industrial property can usefully be divided into two main areas: One area can be characterized as the protection of distinctive or special style Signs, in particular trademarks (which distinguish or classify the goods or services of one undertaking or action from those of other undertakings) and geographical indications (which identify a good as originating in a place where a given characteristic of the good is essentially attributable or related to the same work to its geographical origin).

The protection of such distinctive or special style signs aims to stimulate or increase effort and ensure fair competition and to protect consumers, by enabling them to make informed or having with information choices between various goods and services. The protection may last indefinitely, provided the sign in question continues to be distinctive or special style.

Other types of industrial property are protected primarily to stimulate or increasing of efforts of innovation, design and the creation of technology. In this category fall inventions (protected by patents), industrial designs and trade secrets.
The social purpose is to provide protection for the results of investment in the development of new technology, thus giving the incentive and means to finance research and development activities.
A functioning intellectual property regime should also facilitate the transfer of technology in the form of foreign direct investment, joint ventures and licensing.
The protection is usually given for a finite or having limit term **(typically 20 years in the case of patents). (TRIPS: WHAT ARE IPRS (8 /5 /2015?)**

The patent protection has taken dimensions of historical in the third quarter of the nineteenth century represented protection of industrial property was to be created **(ULF ANDERFEL T, 1971: 65).** Then patents play an important role in the process of technology transfer.

A patent is a temporary, limited legal right granted to an inventor by the government to prevent others from manufacturing, selling, or using his invention as knowledge that, a patent doesn't give its owner the right to do anything with the invention. Instead, think of it as veto power over someone else trying to do something with it. A patent allows the owner to stop others from using, manufacturing, selling, licensing, or otherwise exploiting the specifically covered invention. And that may require a trip to a federal courthouse and paying huge lawyer fees if the infringer isn't deterred or prevent by your threat of litigation. **(Henri Charmasson and John Buchaca, 51:2008).**

The process of patent protection reflects the conflicts between couple of parties, most of the conflicts will arise between the national interests of these countries and those of foreign patentees. The patents aim to the protection of couple of parties, this protection is translated to benefits which reflected on a couple of parties such as:
A - Developing countries will benefit from Union membership particularly, through an increased inflow of foreign technology.

B- The cost of granting patents to foreigners would have to be compared, not with the equivalent benefits of national patentees abroad, as in the classical case, but with the Contribution of the foreign technology, secured through patent protection, to the economic and industrial development Process of the developing countries **(ULF ANDERFEL T, 1971: 125).**

As we have seen above meaning of patents and its role in the process of protection of new inventions and as we know that patent is part of intellectual property rights therefore, let's go seeing situations of different countries in this process In 2013, India made some limited progress in improving its weak IPR legal framework and enforcement system. India acceded[5] of provide agree to and implemented the Madrid Protocol; continued progress toward digitization of cable networks to help efforts to combat or against signal theft or stole by cable operators; and enacted rules to Implement amendments to its Copyright Act. 2013 also saw more active copyright enforcement by the Delhi High Court Through the issuance of Ashok Kumar and Anton Piller orders, which provide injunctive [6]to rights holders.

[5] To become a party to an agreement or treaty.

[6] *Law.* a judicial process or order requiring the person or persons to whom it is directed to do a particular act

Argentina remains on the Priority Watch List in 2014, a position it has occupied since 1996. Argentina has made little progress in improving protection and enforcement of intellectual property rights over the past year. Significant concerns remain with respect to the high levels of piracy[7] and counterfeiting or unreal make a copy of something, including in the digital environment, and the lack of political will address the situation, Although Argentina's customs and tax authority (AFIP) has conducted some enforcement operations. A prime example of the absence of even basic enforcement of IP laws is the continued growth and expansion of the Notorious or widely known Market La Salada, and its owners' ability to continue operating with impunity or punishment. Delays or move slowly in the acquisition of IP rights and a lack of transparency for patentability criteria, also raise concerns. Argentina's patent application backlog or accumulation is growing, a problem that could be alleviated or make easier allow by Argentina's accession to the Patent Cooperation Treaty (PCT), if the political will do so existed. Argentina also fails to provide effective protection against unfair commercial use or unauthorized disclosure or uncovered of test and other data generated to obtain marketing approval for pharmaceutical products. The United States looks forward to continuing to work with Argentina to address these and other issues. **(Special 301 Report 2014, 37, 44, 48).** And as we have seen above the efforts of different governments to promote the system of intellectual property rights and domestic laws to strong economy, let's go seeing international efforts with different countries.

2.5.1 WTO and WIPO deliver or to give birth advanced training on intellectual property for policymakers

An Advanced Course on Intellectual Property for Government Officials opened on 16 March 2015, aiming at enhancing the capacity of governments in developing countries and in countries with economies in transition to develop national expertise in intellectual property matters.

This seventh in an annual series jointly convened or assemble by the World Intellectual Property Organization and the World Trade Organization has run over the next two weeks, with 25 officials from developing countries.

[7] the unauthorized reproduction or use of a copyrighted book, recording, television program, patented invention, trademarked product, etc.:

The initiative for the course were in the growing demand within developing countries for enhanced awareness of international intellectual property issues, and to consolidate or to make firm of the policy skills required to analyze and engage with these developments. This Advanced course is at the highest level of capacity building in the WTO's set of programmes, as part of the organization's progressive or movement toward learning strategy. It brings together officials who already have a strong background in intellectual property and related policy areas and who seek to consolidate and extend their knowledge and skills. The course, which also conforms or similar form with the mandate or a command of the WIPO Academy, provides education and training in intellectual property.

The course aims at updating government officials on the activities and instruments of WIPO and the WTO and on other multilateral developments, and to enable them to exchange information and ideas among them and with the two Secretariats. It forms part of an overall strategy to build sufficient capacity within the governments of developing countries and countries with economies in transition, to assess and analyze their policy options and to strengthen or strong national expertise in relation to intellectual property. It is designed to equip the participants with the necessary tools to help formulate or (develop as method) policies that will facilitate the development process in their respective or related to countries.

Participants and topics

The program builds the skills and awareness to enable participants to work together with other stakeholders in their constituencies to adapt, develop and harness or effect use IP systems to promote national economic and development goals. Twenty five participants were selected from developing countries and countries with economies in transition, and their participation was financed by WIPO and WTO. Three additional officials from developed countries were also selected. Together, they from: Azerbaijan, Bangladesh, Bhutan, Canada, Chile, China, Czech Republic, Ecuador, Egypt, European Union, Ghana, Jamaica, Kenya, Kyrgyz Republic, Lebanon, Mauritius, Moldova, Nicaragua, Pakistan, Philippines, Rwanda, Saint Lucia, Singapore, South Africa, Sudan, Trinidad and Tobago, Uganda and Ukraine **(WTO: 2015 NEWS ITEMS 16 March 2015)**

WTO training courses: TRIPS down memory lane — for a very current purpose

The 1986–94 Uruguay Round negotiations left a rich history of what is still the last trade round to be concluded or finished successfully. On 26 February 2015, delegates And observers to the Council on Trade Related Aspects of Intellectual Property Rights (TRIPS) heard from some of the actual negotiators about how the round brought intellectual property into the multilateral trading system, and from other experts about what has happened since and what could be its future. While the basic social objectives of intellectual property protection are as outlined above, it should also be noted that the exclusive rights given are generally subject to a number of limitations and exceptions, aimed at fine-tuning or produce stability the balance that has to be found between the legitimate interests of right holders and of users. And now the researcher has offered position of intellectual property rights in couple of countries but now reader needs to estimates all positions in developing countries through indicators of level of high and middle income countries as we will see in next schedules**(WTO: 2015 NEWS ITEMS 26 February 2015 INTELLECTUAL PROPERTY: SYMPOSIUM ON THE TRIPS AGREEMENT)**

2.3 Patent applications by income group

	Number of application		Resident share (%)		Share of world total (%)		Average growth (%)
	2003	2013	2003	2013	2003	2013	2003–13
World	1,490,300	2,567,900	62.5	66.5	100.0	100.0	5.6
High-income	1,276,800	1,548,900	66.1	61.0	85.7	60.3	2.0
Upper middle – income	177,700	933,900	40.3	79.0	11.9	36.4	18.0
Lower middle-income	28,600	74,500	29.0	23.2	1.9	2.9	10.0
Low-income	7,200	10,600	87.5	84.0	0.5	0.4	3.9

2.4 Trademark application class counts by income group

	Number of application		Resident share (%)		Share of world total (%)		Average growth (%)
	2004	2013	2004	2013	2004	2013	2004–13
World	4,468,063	7,045,140	67.1	73.7	100.0	100.0	5.2
High-income	2,649,830	3,271,658	66.3	69.9	59.3	46.4	2.4
Upper middle – income	1,356,835	3,024,565	73.0	81.5	30.4	42.9	9.3
Lower middle-income	418,525	671,300	57.0	61.1	9.4	9.5	5.4
Low-income	42,873	77,617	24.6	34.5	1.0	1.1	6.8

2.5 Application design counts by income group

Income group	Application class counts		Resident share (%)		Share of world total (%)		Average growth (%)
	2004	2013	2004	2013	2004	2013	2004–13
World	586,600	1,242,700	69.5	85.4	100.0	100.0	8.7
High-income	368,000	438,700	67.9	74.0	62.7	35.3	2.0
Upper middle-income	177,800	755,000	80.2	94.0	30.3	60.8	17.4
Upper middle-income without China	*67,000*	*95,400*	*61.3*	*68.4*	*11.4*	*7.7*	*4.0*
Lower middle-income	37,700	44,800	37.8	57.2	6.4	3.6	1.9
Low-income	3,100	4,200	41.0	47.3	0.5	0.3	3.3

(World intellectual property indicators, 2014, 23 71,109).

And as we know intellectual property rights aim to promote technology transfer from country to another but in the same time, need to laws in different fields to complete protection.

2.5.2 The role of laws in the process of FDI in developing countries

Botswana has had a relatively liberal economy since independence in 1966. It avoided nationalization of economic enterprises and instituted or organized policies that encourage exploitation of its minerals, particularly copper, nickel and diamonds, through joint ventures with foreign companies. The Botswana Export Development and Investment Authority is the national agency responsible for promoting and facilitating FDI. It is responsible for formulating or developing as methods such as FDI norms and rules. The country's Constitution determines conditions under which foreign investment can be expropriated or taken property to public use. It provides that expropriation can only occur for public policy reasons. Foreign investors are entitled or give a title to full and equal recourse or access to protections to national courts. Ghana has adopted 'investor-friendly' policies and enacted legislation to increase its FDI inflows. In 1994 its parliament enacted the Investment Promotion Centre Act to regulate FDI in all sectors except minerals, gas and oil. This law aims at easing the entry and establishment of foreign business and attracting FDI. It created the Ghanaian Investment Promotion Centre to provide administrative and technical leadership on FDI matters. The Ghanaian's law organizes process of registration, the country's constitution prohibits or prevent compulsory or required taking of private property without compensation. The policy and legislative reforms undertaken or guaranteed by Ghana stimulated or increased activity major privatization initiatives that stimulated or increased activity FDI inflows. For example, in 1994 the Government of Ghana sold significant shares in the biggest state mining company, Ashanti Goldfields Corporation (AGC), to South Africa's company Lonmin. In 1996, it sold 30 percent of its shares in Ghana Telecom to Telekom Malaysia. In addition to privatization, Ghana enacted an Investment Code.

Nigeria is another country with a relatively liberal FDI regime. In 1995, it enacted two important FDI laws. Decree No. 16 of 1995 established the Nigeria Investment Promotion Commission (NIPC) and Decree No. 17 of 1995 instituted the Foreign Exchange Monitoring and Miscellaneous or consists of member Provision that allows free Repatriation or profits of foreign currency, dividends, and profit and capital transfers of any kind without any prior approvals by government. The former law opened up almost all sectors of Nigerian economy and liberalized the legal framework governing the ownership structure of Nigerian firms. Tanzania is experimenting with a mix of liberal policies and laws that aim at maximizing local economic benefits from FDI. In 1990, the government instituted the National Investment Promotion and Protection Act, which established the Investment Promotion Centre (IPC) to promote, coordinate, regulate and monitor investment. It requires foreign companies and/or individuals wishing to invest in Tanzania to satisfy or put an end to need the Centre and the government of the 'likely contribution by the enterprise to the Economic development and benefit of Tanzania'. The law places emphasis on benefits such as maximization of foreign exchange earnings and savings, enhancement of import substitution activities or replacing foreign good with domestic goods which achieve identifiable or model substantial or value foreign exchange savings, expansion of food production, Achievement of high degree of technology transfer, creation of employment opportunities and the development of human resources, and production of goods and services which improve linkages between the various sectors of the economy. It makes a general reference to the need for foreign investment to protect interests and conditions of employees as well as interests of potential consumers. Uganda has made significant policy, legal and institutional reforms to attract FDI inflows. The government has liberalized the economy considerably and privatized a considerable number of public enterprises. The Investment Code 1991 provides extensive protection to foreign investment. Provisions in the country's constitution and land law reinforce or to strengthen support this protection and create incentives for FDI. In 1991, Uganda's parliament created the Uganda Investment Authority (UIA) to promote and facilitate investment. UIA has power to purchase, own and allocate land as leasehold or property or freehold tenure or possessing anything **(Lyuba Zarsky, 2005: 84, 85, 86).** On the same way, we find the state of Korea also has taken several steps to strength economy, and here, the researcher will offer some of laws and its contributions to the development process.

Act on promotion of Development and Distribution of Environment – friendly motor vehicles find in the Article one The purpose or practical result of this Act is to plan for the continuous development of the automobile industry and for the improvement of living conditions of people and to contribute to the national economy by establishing and promoting a general plan and policy to accelerate the development and distribution of environmentally friendly automobiles**(Act on promotion of Development and Distribution of Environment – friendly motor vehicles,1,2011).**

And also the government has enacted a law to support the environmental technology and environmental industry acts to The purpose or practical of results of this Act is to promote the development, support, and dissemination or spreading widely of environmental technologies[8] thereby or because of that contributing to Environmental conservation, green growth and the sustainable Development of the national economy. <Amended by Act No. 9931, Jan13, 2010> [This Article Wholly Amended by Act No. 8957, Mar. 21, 2008] **(Support for environmental technology and environmental industry acts1, 2011)**.

As we seen above there are a couple of economies carried out the reforms of liberalization more clearly about it , they have opened their markets to more trade and low barriers and other measures in short, openness consequently, the previous measures with international law represents GATS and TRIPS. More details after common, The laws play important and main role to attract foreign direct investment as we have seen above, regulation of process of technology transfer, process of investment, rights of state and protection of foreign investors and local investors also there are laws and legislation on the level of regional and International in order to organize and promote the process of investment and process of technology transfer. as we know the important role of intellectual property rights to promote technology transfer, therefore, WIPO has put important program to train states officials to know importance of protection of property rights and implementations tools to achieve them on the ground.

when we talk about characteristics of host states and this point is very important to determine the role of the state to create a system of protection of property rights to promote technology transfer.. And as we have mentioned above the main goal of the

[8] refers to green technology and foster the environmental industry

chapter is promotion of cooperation between china and Egypt through Africa. African countries cooperation are between developing and low developing countries, and as we know there are important indicators to determine power of economies as safe environment to foreign investors and if reader look at table of patents and trademark and design, we will find that states of high income has occupied the first place, in short, How can Egypt make economic arms there and in the same time, protects itself also there?. All previous efforts will be translated to operations of technology transfer among developing countries in the next part.

The part three

Operations of FDI between developing countries to TT and highlights SSA

2.6 economic treaties and rate of investment to promote economic development

As we have seen above the role of laws in the process of technology transfer and law opens door to agreements on the scope of national and international, as we will see in this part. To complement investment liberalization and regulatory reforms, a growing number of SSA countries have signed bilateral investment treaties (BITs) with capital-exporting countries. These state–state agreements constitute one of the most important legal instruments for the protection of FDI. Through them, a capital exporting country secures legal protections and guarantees for the investments of its firms in addition to those provided by host-country national legislation. SSA countries have treating BITs as important instruments for attracting foreign investors. The number of BITs concluded or signed by SSA countries increased to 428 in 1999 from 149 at the end of 1989. By 1999, the SSA countries had concluded or signed 172 BITs with European Union countries, 108 with Asian countries, 39 with Central and Eastern European countries, 16 with Latin America and Caribbean countries and 44 between themselves . Generally, BITs have provisions that define the scope and nature of FDI; provide for national treatment of foreign investors; define guarantees and compensation with respect to expropriation and for war and civil disturbances or violence; provide guarantees for free transfer of funds and repatriation or return to origin of capital and profits; create dispute settlement provisions; and define performance requirements For example, Article 12(5) of Nigeria– Netherlands BIT of 1992 states **(Lyuba Zarsky, 2005: 88).** In short, recently several countries have signed a several treaties whether enter in force or not.

2.6 numbers of treaties

	Country	Numbers of treaties
1	Nigeria	28
2	Mali	18
3	Cote devour	12
4	Congo	19
5	Tanzania	20

(http://investmentpolicyhub.unctad.org/ 9/ 5 / 2015).

After we have seen above the power of treaties of economic Between SSA and others to promote FDI flow then we need to see rate of FDI on the ground.

The SSA countries received investment flows in the different period between rate of high and rate of low, In the mid-1980s, FDI inflows rose but began to decline in the early 1990s, the region received a small share of FDI relative to other Developing Regions, In the second half of the 1990s, its share rose markedly, reaching 4 percent of total flows to developing countries, In 2000, however, FDI inflows declined for the first time since the mid-1990s, dropping to US$9.1 billion from US$10.5 billion in 1999. The dip or drop was based on a decline in FDI flows to two countries: South Africa and Angola. FDI inflows to SSA are highly concentrated. In the two years over 1995–1996, over 80 percent of net FDI inflows to SSA went to just four countries: South Africa, Nigeria, Côte d'Ivoire and Angola, three of which are oil exporters. The South Africa received the largest amount of FDI, the large economy in the region, in 1994 the South Africa has seen crucial transformations, it has finished apartheid in 1994, it has joined the world trade organization. In A few SSA countries, including Uganda and Tanzania, FDI inflows substantially or importance increased in the 1990s. Inflows to Uganda increased from US$3 million in 1992 to US$88 million in 1994 to US$250 million in 1997. This positively, Correlates to a GDP growth rate of 3.2 percent in 1992 to 5.3 percent in 1997 Tanzania attracted US$193 million in 2000, compared with US$50 million in 1994, doubling its share of total flows to SSA from 1.5 to 3.3 percent. The SSA countries have an environment of investment, the researcher mean that regional environment to investment, more clearly, their neighborhood of countries such as SADC, SADC play important role in the regional economy. In terms of sub-regional trends, the Southern African Development Community (SADC) maintained its position as the most important sub-region for FDI inflows into SSA. Member countries of SADC are Angola, Botswana, Democratic Republic of Congo, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe. Between 1995 and 1999, SADC countries received about 2–3 percent of total FDI to developing countries, and 44 percent of FDI inflows to SSA, compared with 21 percent in the first half of the 1990s. The community's improved Attractiveness to FDI may have been principally or first importance driven by country-specific factors, but at least some FDI inflows were also Motivated by the region's increasing economic integration **(Lyuba Zarsky, 2005: 79:82).**

As regards the possible impact of IIAs on investment liberalization, one needs to distinguish or divide in to classes between agreements that "only" confirm and lock or secure in the already existing degree of Openness to foreign investment, and those that actually result in new liberalization. IIA-driven FDI liberalization is mainly an issue for

natural resources and services. The latter sector Continues to be the one with the highest degree of FDI restrictions. By contrast, most countries today are already open to FDI in manufacturing **(UNITED NATIONS, 20:2009).**

SSA has seen a substantial or real value increase in FDI flows particularly, in the last decade which saw FDI flows to the region more than double from an average of US$ 14.9 billion in the first half of the decade (2001–2005) to US$ 30.3 billion in the last half of the decade (2006–2010). Within the same period, per capita FDI to the region has almost doubled from an average of US$ 20.60 to US$ 37.04**(Yusufu Unisa Kamara PhD. Candidate, University of Kansas, 2:2013).**

However, FDI flows, an important source of financing of fixed capital[9] formation in the region, declined in 2014, reflecting slower growth in emerging markets and soft commodity prices. Portfolio investment[10] flows also slowed, driven by reduced flows to South Africa and Nigeria, as did official flows directed mainly at low-income countries. Meanwhile, several frontier or parts of borders market countries were able to tap or make international bond [11]agreement that united peoples markets to finance infrastructure **(GLOBAL ECONOMIC PROSPECTS, 1,| January 2015).** And we will look on the rate of FDI in states of SSA in the sector of Agriculture.

In Tanzania FDI has increased over time, although FDI activity is still in an initial stage. The FDI inflows to Tanzania started to increase in the Mid-1990s as a consequence of changes in the investment climate. Tanzania initiated and Implemented economic liberalization policies to attract FDI. Reforms were made in financial institutions, the Public sector and other areas. Furthermore, a legal framework for investments was implemented, in particular, The National Investment Promotion Policy of 1996 and the associated Tanzania Investment Act of 1997. However, in 2013 Tanzania planned to review the main laws of the legal framework for investments. In 1999 the increase of FDI inflows to Tanzania reached a peak at 496.6 million USD. In the early 2000s, FDI inflows decreased slightly; followed by another peak at 935.5

[9] Fixed capital is a concept in economics and accounting, first theoretically analyzed in some depth by the economist David Ricardo. It refers to any kind of real or physical capital (fixed asset) that is not used up in the production of a product. It contrasts with circulating capital such as raw materials, operating expenses and the like.

[10] Portfolio investments include transactions in equity securities, such as common stock, and debt securities, such as banknotes, bonds,

[11] In finance, a bond is an instrument of indebtedness of the bond issuer to the holders. It is a debt security, under which the issuer owes the holders a debt

million USD that was superseded or succeed to the position by yet another drop. In 2008 the 1 billion USD mark was reached. In recent years, the FDI inflows have fluctuated or moved back and forward on a high level. The so far largest FDI inflow was witnessed in 2010 with 1.813 billion USD. South Africa, Canada, UK, Mauritius and Kenya were the top five source countries of FDI inflows into Tanzania from 2008 to 2011. In this period, these countries invested a total of 4.6 billion USD in Tanzania, which amounts to 86.1 % of total FDI inflows. Investments from South Africa accounted to 31.1 % and thus presented the highest share of total inflows. Looking at the sources of FDI inflows by regional groupings during the observed period the Organization for Economic Cooperation and Development (OECD) countries are the dominant or control source of investments in Tanzania, which have a share of 56.1 % of total FDI inflows. Canada and the UK accounted for 74.1 % of the total inflows from the OECD. The countries from the Southern African Development Community (SADC) are the second largest investors in Tanzania. Nevertheless, South Africa accounted for 76.1 % of the total inflows from SADC. Investments from the East African Community (EAC) contributed with a share of 5.1 %. **(Foreign Direct Investment in Agri-Food Networks in India and Sub-Saharan Africa Study by Martin Franz and Philip Müller 10,)**

2.7The role of china in SSA

china plays an important role in the economies of sub Saharan Africa. There have rapid growth in china represents increasing of china's GDP from 34 percent in 2000 to 46 percent in 2012 therefore, china needs cooperation with sub Saharan and carries out operations to promote this Chinese growth. More clearly, China's real GDP has grown by an average of 10 percent a year in the past decade, and so has its need to import an entire or whole range or a number of products—minerals, farm products, timber, and oil—to satisfy or provide the fast pace or rate of speed of domestic investment, which increased fivefold or equal five times in the same period. With knowledge that China has become a major development partner of sub-Saharan Africa (SSA), as its trade, investment, and aid ties or connect with the region have increased remarkably in recent years **(Paulo Drummond and Estelle Xue Liu1, 4:2013).**

According to previous factors the researcher can say, that we can see the factors through cooperation among them and china will be more clearly, in the next words. The previous words have cleared the suffering of economic, political and security in the Africa and in the same time as the researcher has mentioned that several countries have received amount of FDI therefore, the researcher wants to mention the operations

of Chinese in sub Saharan and the role of china's economy in Africa. As we have seen above the FDI inflows to Africa but there is an important question, where are sites of industries sectors on the map of African economic particularly, the sector of manufactures?

As the researcher has mentioned the research's goal is technology transfer process and the researcher wants the biggest benefits to Egypt through this process and as we know this process is very complex which consists of several parties whether national, regional and international ,therefore, the Researcher and reader need knowledge, what is the type of investment environment in Africa ? To draw lines of technology transfer to Egypt and from it to others countries in Africa through cooperation with china, therefore, the researcher analyses the process of technology transfer in Africa.

there are several factors to technology transfer to any country such as a strong infrastructure and good investment environment but unfortunately, the couple of previous factors are very weak in the developing countries and in the same time, the level of R&D is very poor, the developed countries occupy The top of world's expenditures which reflects on the rate of invention which lead to power in the new technology to it.

On the other hand, the developed countries also have a strong others positive represent TNCs which have power of finance and new technology and weak of African position more clearly, through gap among institutions of R&D and productive sector in Africa. The researcher offers data of R&D rate in the developing and developed countries as follows:

United States expenditure on the R&D is 447 trillion dollars, china expenditure on the R&D is 232 trillion dollars, Japan expenditure on the R&D is 160 trillion dollar, Germany expenditure is 92 trillion dollar, and south koura expenditure is 59 Trillion dollars, Qatar expenditures is 5 trillion dollar, Saudi Arabia expenditure is 2 trillion dollar, and South Africa expenditure is 5 trillion dollar.

The researcher offers this data and we can analysis it, there is difference between rats of expenditure on the R&D in developing countries and developed countries. When talking about rate of investment in developing countries, we have found declining and increasing from period to another because the conflicts of political

play a negative role in the process of attracting of FDI and the projects need cooperation of regional as we have seen in the project of electricity between several countries in Africa therefore, the Stability of political is very important to success cooperation of regional also the project has financed by institutions of foreign and regional and domestic (cooperation of multi parties).

The legal framework represents laws of domestic and laws of international such as TRIPS and GATS, the previous figures offered increasing of investment rate to SSA but what about others aspects of African economy? The most African countries adopt on the goods of importing and on the other hand, rules of liberalization do not give a power to developing countries as some people has imagined, but we can achieve free trade on the ground through carry out procedures of protection to period whether long or short, Then application of liberalization policy on the ground completely. The researcher means step by step.

The researcher would like to mention the important aspect which is very important represents operations of investment between china and African countries, particularly SSA. The researcher has found the Mutual interests between them, the china needs new Markets for their products and in the same time, SSA need new investment opportunities in order to improve their infrastructure and achieve the main goal of economic Development. In the end, Egypt makes process of technology transfer with all countries and Egypt is a part of Africa and in the same time china is a main player in Africa therefore, the researcher offers vision completely before the policies makers represent, position of African economy to create investment environment to Egypt. on the other hand Frameworks of legal are very important to see merits of process of technology transfer on the ground, in short, SSA have several agreements with other countries and naturally, china is one of them and in the same time Egypt.

2.8Indicators of economic in SSA

The fiscal deficit for the region narrowed or limited to 2.5 percent of GDP, as several countries took measures in 2014 to control expenditures. Nigeria's overall deficit fell thanks to higher non-oil revenues and reduced current spending. In Senegal, the authorities cut less productive expenditures, including those on wages and salaries. In Burkina Faso, improvements in the overall balances came from better revenue collection and tax policy reforms. At the same time, however, the fiscal position deteriorated or makes value in many countries. In some cases, it was due to or

because of the increase in the wage bill or wages of employee (e.g., Kenya and Mozambique). In other countries, it was due to higher spending associated with the front loading or plan of project and scaling up or increasing of property of public investment (e.g., Mali, Niger, and Uganda). Elsewhere, the higher deficits reflected declining revenues, notably or worthy of note among oil-exporting countries because of declining production and lower oil prices (Angola). The region's debt ratio remained moderate or medium amount, at 30 percent of GDP. Robust or strong growth and concessional or true interest rates have helped to keep debt burdens manageable or manage debt. However, in a few countries, debt increased significantly in 2014, especially in Ghana (to 65 percent of GDP), Niger (to 42 percent of GDP), Mozambique, and Senegal (both above 50 percent of GDP). In some countries, particularly those that have newly accessed international bond or united markets, the share of non-concessional or true loans rose, pushing up debt servicing costs. Current account deficits stabilized at 2.9 percent of GDP in 2014, reflecting soft Commodity prices and strong investment-related imports. Falling prices for oil, metals, and agricultural commodities weighed on the region's exports, which remain dominated or controlled by primary commodities. In contrast, spurred by infrastructure projects and private consumption growth, import demand was strong across the region. Several frontier or border market countries (Ghana, Kenya, Namibia) as well as South Africa—which relies or depend confidently heavily on portfolio capital flows to meet large financing needs—continued to have substantial twin or new importance thing fiscal and current account deficits. Inflation edged up or high in the first half of 2014, due or debts in part to higher food prices, but remained in single digits[12] in most countries. The uptick or rise in business activity was most visible among frontier market countries that sustained large currency depreciations or decreasing of value—notably Ghana, where inflation was in double digits . In some countries (Ghana, South Africa), inflation rose above the upper limit of the central bank target range for 2014, prompting a tightening or promote event closely of monetary policy. Reduced real disposable income[13], due to inflation, and higher borrowing costs weighed on investor sentiment or position and kept household consumption subdued, slowing economic activity. However, low and declining commodity prices helped contain inflation in most countries in the region. The low-interest-rate international environment and subdued volatility[14] in global financial

[12] denoting a percentage smaller than ten, especially with reference to rates below that level

[13] the money a person has available to spend after paying taxes.

[14] In finance, volatility is a measure for variation of price of a financial instrument over time.

markets benefited Sub-Saharan Africa's capacity to issue bonds or instruments. Sovereign spreads fell across the region although they remained relatively high in Ghana and Zambia, suggesting that investors were differentiating between countries on the basis of macroeconomic imbalances and the pace or rate of payment of reforms or was so slow. In recent months, reflecting concerns about low oil prices, sovereign spreads for oil exporters (Gabon, Ghana, Nigeria) rose strongly and currencies of some oil exporters depreciated or reducing of purchasing of value of money (Angola, Nigeria,) The Nigerian naira weakened markedly against the U.S. dollar in November, prompting the central bank to raise interest rates and devalue or reduce the value the naira. In contrast, the Zambian kwacha rebounded or recover from its slide or decrease in the first half of the year when it had weakened by more than 20 percent. The Ghanaian cedi also stabilized after concerns or interest to affect about loose or free fiscal stance or position and low external reserves had led to bouts or period of pressure and a Depreciation or decrease in value of about 40 percent against the U.S. dollar in the first 9 months of the year. Meanwhile, the South African rand continued to fall on concerns or interest to affect about the country's larger-than-expected current account deficit **(GLOBAL ECONOMIC PROSPECTS 2, 3| January 2015).** Next tables will help us to understand African markets well

2.7 Mali

Terms and years	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Real GDP Growth	4.6	6.1	5.3	4.3	5.0	4.5	5.8	2.7	0.0	1.7	6.5
Real Per Capita GDP Growth	1.4	2.9	2.0	1.1	1.8	1.3	2.7	-0.4	-3.0	-1.3	3.2
Total Investment	27.7	26.6	24.6	26.7	32.8	25.5	33.2	24.0	16.0	18.2	22.9
Gross National Savings	20.2	18.5	20.9	20.3	20.6	18.2	20.6	18.0	12.7	14.9	16.2
Government Revenue, Excluding Grants	16.9	17.5	17.3	16.6	15.5	17.1	17.2	17.0	17.1	17.4	16.8
Government Expenditure	23.8	24.6	24.9	24.5	21.2	25.9	23.0	24.9	18.5	23.7	26.7
Government Debt	32.7	53.1	20.4	21.1	22.6	24.7	28.7	29.1	29.4	31.5	31.3
Exports of Goods and Services	27.1	24.5	29.9	27.4	29.2	23.7	26.0	26.2	32.1	28.1	24.4
Imports of Goods and Services	37.9	34.8	36.8	37.8	46.1	34.5	43.0	36.1	37.9	48.3	47.6
Net Foreign Direct Investment	2.0	2.7	1.2	2.3	2.1	8.4	4.2	5.2	3.7	3.6	3.7

2.8 South Africa

Terms and years	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Real GDP Growth	4.9	5.3	5.6	5.5	3.6	-1.5	3.1	3.6	2.5	1.9	2.3
Real Per Capita GDP Growth	3.5	3.9	4.2	4.2	2.3	-2.8	1.8	2.2	1.1	0.5	1.0
Total Investment	19.9	18.0	19.7	21.2	22.7	19.5	19.1	19.1	19.4	19.4	19.4
National Savings	14.7	14.5	14.4	14.3	15.5	15.5	17.1	16.8	14.2	13.5	14.1
Government Revenue, Excluding Grants	28.0	26.5	28.9	29.7	29.6	28.1	27.5	27.9	28.3	28.9	29.0
Government Expenditure	28.0	26.9	28.2	28.4	30.1	33.0	32.4	31.9	32.6	33.2	33.4
Government Debt	31.1	33.2	31.0	28.3	27.2	31.6	35.3	38.8	42.1	45.2	47.3
Exports of Goods and Services	30.2	27.4	30.0	31.5	35.9	27.3	28.4	30.6	29.9	31.1	31.4
Imports of Goods and Services	32.0	27.9	32.5	34.2	38.9	28.2	27.7	30.2	31.8	34.0	34.0
Net Foreign Direct Investment	1.1	2.3	-2.2	1.2	4.5	2.2	1.0	1.1	0.4	0.7	1.0

2.9 Ethiopia

Terms and years	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Real GDP Growth	11.8	12.6	11.5	11.8	11.2	10.0	10.6	11.4	8.5	9.7	7.5
Real Per Capita GDP Growth	9.2	10.0	9.0	9.3	8.8	7.7	8.2	9.0	6.0	7.2	4.9
Total Investment	22.7	22.4	23.9	20.8	21.2	21.5	23.6	27.2	34.6	28.3	30.0
National Savings	21.2	20.1	18.3	23.7	19.3	19.0	20.7	27.3	28.1	22.2	24.6
Government Revenue, Excluding Grants	14.2	14.8	15.0	12.8	12.1	12.1	14.2	13.7	14.0	12.1	11.5
Government Expenditure	21.9	23.3	22.5	20.9	19.1	17. 4	18.8	18.5	16.9	17.3	16.1
Government Debt	58.1	76.7	39.4	37.2	30.8	25.3	27.9	26.2	21.2	22.2	23.5
Exports of Goods and Services	13.7	15.2	14.0	12.9	11.6	10.6	13.8	17.0	14.0	12.4	13.1
Imports of Goods and Services	33.1	35.8	36.9	32.4	31.4	29.0	33.3	32.1	32.1	28.6	28.5
Net Foreign Direct Investment	2.1	1.2	2.4	2.5	3.1	2.8	3.3	4.0	2.5	2.4	2.8

2.10 Uganda

Terms and years	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Real GDP Growth	8.3	10.0	7.0	8.1	10.4	4.1	6.2	6.2	2.8	6.0	6.4
Real Per Capita GDP Growth	4.8	6.5	3.6	4.6	6.9	0.8	2.8	2.8	-0.5	2.6	3.0
Total Investment	21.5	21.6	20.7	23.0	20.4	22.0	23.1	25.0	25.2	26.4	27.5
National Savings	16.6	19.0	16.5	17.5	11.7	14.7	12.0	12.5	14.7	14.7	15.0
Government Revenue, Excluding Grants	12.1	11.8	12.2	12.4	12.3	12.1	12.5	14.8	13.4	13.4	13.9
Government Expenditure	18.0	18.0	17.5	17.1	17.7	17.1	22.2	19.9	19.1	18.3	18.4
Government Debt	38.8	52.8	35.5	21.9	21.4	21.4	26.8	29.3	31.1	33.9	36.0
Exports of Goods and Services	16.0	15.4	15.6	17.5	18.4	20.0	19.8	23.3	22.6	22.9	22.1
Imports of Goods and Services	26.9	23.5	27.1	29.0	32.4	31.6	35.9	40.8	35.8	35.8	35.9
Net Foreign Direct Investment	4.7	3.8	5.9	5.8	4.5	5.1	3.2	4.9	7.9	4.3	5.0

2.11 Zimbabwe

Terms and years	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Real GDP Growth	-7.5	-7.7	-3.6	-3.3	16.4	8.2	11.4	11.9	10.6	3.0	4.2
Real Per Capita GDP Growth	-8.2	-8.5	-5.0	-3.6	-17.0	7.2	10.4	9.1	7.8	1.8	3.1
Total Investment						15.1	23.9	22.4	14.2	14.0	15.0
National Savings						-24.5	0.2	-18.2	-8.9	-5.7	-3.3
Government Revenue, Excluding Grants	6.2	12.2	7.3	2.9	2.3	11.4	23.3	26.7	28.0	29.6	30.3
Government Expenditure	9.7	18.7	9.8	5.9	4.3	14.0	22.6	27.9	28.6	29.6	30.3
Government Debt	51.0	38.8	45.1	50.5	69.4	68.3	63.2	52.1	55.2	54.7	54.0
Exports of Goods and Services	27.5	25.1	27.5	29.1	31.0	27.6	37.5	43.5	34.9	34.7	35.4
Imports of Goods and Services	36.8	31.8	35.8	35.7	50.9	76.1	61.8	77.7	60.8	59.5	58.4
Net Foreign Direct Investment	0.7	1.3	0.6	0.9	0.7	1.3	1.3	3.4	2.8	2.6	2.4

2.12 Zambia

Terms and years	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Real GDP Growth	5.8	5.3	6.2	6.2	5.7	6.4	7.6	6.8	7.2	6.0	7.3
Real Per Capita GDP Growth	3.0	2.6	3.4	3.3	2.7	3.3	4.4	3.6	3.9	2.7	3.9
Total Investment	22.7	23.7	22.1	22.0	20.9	21.0	22.6	25.0	26.4	25.5	25.8
National Savings	22.7	23.7	22.1	22.0	20.9	21.0	22.6	25.0	26.4	25.5	25.8
Government Revenue, Excluding Grants	18.1	17.6	17.2	18.4	18.9	16.0	17.8	20.9	21.0	20.2	20.2
Government Expenditure	24.8	26.1	23.5	24.3	23.8	21.3	22.6	23.9	27.1	29.9	29.7
Government Debt	24.3	19.4	29.8	26.7	23.5	24.6	23.6	25.4	30.9	35.1	39.3
Exports of Goods and Services	37.9	35.1	39.0	41.4	35.9	35.6	47.7	47.0	47.7	50.3	52.7
Imports of Goods and Services	37.2	36.7	30.1	39.2	37.3	31.8	34.5	39.3	44.5	47.5	50.4
Net Foreign Direct Investment	7.1	5.3	5.8	11.5	6.4	3.3	3.9	5.8	11.8	7.3	5.7

2.13 Benin

Terms and years	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Real GDP Growth	3.9	2.9	3.8	4.6	5.0	2.7	2.6	3.3	5.4	5.6	5.5
Real Per Capita GDP Growth	0.6	-0.4	0.5	1.5	1.9	-0.3	-0.3	0.5	2.6	2.9	2.8
Total Investment	18.3	16.4	17.2	20.1	18.4	20.9	17.6	18.7	17.6	25.6	19.5
National Savings	11.0	9.9	12.2	9.9	10.3	11.9	8.9	10.9	9.7	11.1	10.3
Government Revenue, Excluding Grants	18.2	16.9	16.9	20.8	19.6	18.5	18.6	17.6	18.8	19.4	18.7
Government Expenditure	21.2	21.3	19.4	23.4	21.4	25.0	20.4	21.6	21.0	22.4	22.2
Government Debt	26.8	40.6	12.5	21.2	26.9	27.3	30.2	31.9	29.2	29.8	29.5
Exports of Goods and Services	14.9	12.5	13.3	17.0	17.8	16.5	19.1	12.5	14.8	17.3	16.5
Imports of Goods and Services	27.2	23.4	23.9	32.6	31.1	29.8	31.1	24.5	27.3	36.4	29.5
Net Foreign Direct Investment	2.3	1.2	1.2	4.7	2.6	1.6	3.0	1.4	1.6	9.0	4.8

2.14 Cameroon

Terms and years	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Real GDP Growth	3.1	2.3	3.2	2.8	3.6	1.9	3.3	4.1	4.6	4.6	4.8
Real Per Capita GDP Growth	0.6	-0.4	0.5	1.5	1.9	-0.3	-0.3	0.5	2.6	2.9	2.8
Total Investment	16.8	16.8	14.3	15.0	17.5	16.3	16.4	19.1	19.6	20.6	20.3
National Savings	15.8	13.4	15.9	16.4	16.3	13.0	13.4	16.2	15.6	16.2	16.8
Government Revenue, Excluding Grants	18.2	17.6	19.0	19.1	20.0	17.6	16.8	18.2	18.3	18.4	19.5
Government Expenditure	15.9	14.6	14.6	15.6	18.6	18.5	18.6	21.4	20.4	22.9	23.6
Government Debt	30.1	51.5	15.9	12.0	9.5	10.6	12.1	13.8	16.1	18.6	21.6
Exports of Goods and Services	27.7	24.5	29.3	31.0	31.1	23.5	25.5	29.5	29.2	28.2	28.5
Imports of Goods and Services	28.3	26.4	27.7	29.5	33.1	28.3	28.9	32.2	32.2	31.9	31.4
Net Foreign Direct Investment	1.9	1.9	2.0	2.1	1.5	2.0	1.9	2.0	3.0	3.0	2.7

2.15 Congo

Terms and years	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Real GDP Growth	4.3	7.8	6.2	-1.6	5.6	7.5	8.7	3.4	3.8	4.5	8.1
Real Per Capita GDP Growth	3.0	3.0	2.3	3.2	3.1	-0.1	4.0	3.8	4.0	5.3	5.5
Total Investment	14.3	12.5	12.0	17.3	17.9	14.2	18.2	16.5	20.3	21.1	21.4
National Savings	9.6	4.4	9.8	16.6	7.3	6.5	13.3	10.5	12.3	11.2	13.4
Government Revenue, Excluding Grants	8.3	6.9	7.9	9.0	11.5	10.3	12.1	12.4	14.9	12.7	13.7
Government Expenditure	13.1	13.6	14.2	12.7	14.7	16.5	17.5	19.1	19.6	18.7	19.3
Government Debt	96.6	88.9	100.0	83.4	87.0	89.8	27.1	23.3	21.0	21.6	23.4
Exports of Goods and Services	27.6	20.2	21.1	39.9	37.3	27.4	43.6	45.5	34.1	35.7	38.8
Imports of Goods and Services	52.6	49.9	50.1	53.5	58.4	57.0	57.4	56.8	55.7	55.5	52.5
Net Foreign Direct Investment	7.1	6.3	6.0	9.5	9.5	6.6	7.3	7.0	7.9	7.4	6.9

2.16 Madagascar

Terms and years	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Real GDP Growth	5.8	4.8	5.4	6.5	7.2	-3.5	0.1	1.5	2.5	2.4	3.0
Real Per Capita GDP Growth	2.8	1.8	2.4	3.5	4.2	4.2	-2.6	-2.1	0.0	-0.1	0.6
Total Investment	28.8	23.8	25.0	28.3	41.0	34.1	28.7	25.8	23.7	25.2	27.1
National Savings	15.7	12.1	15.1	15.6	20.4	13.0	19.0	18.9	15.3	19.2	23.0
Government Revenue, Excluding Grants	11.4	10.9	11.2	11.7	11.2	10.4	12.2	12.3	10.6	9.4	9.6
Government Expenditure	20.9	21.4	21.5	18.7	17.4	14.1	13.1	14.0	12.8	12.5	14.1
Government Debt	52.1	82.1	31.0	28.8	27.8	31.8	32.1	31.5	29.7	27.7	29.7
Exports of Goods and Services	29.3	26.9	29.9	30.5	26.6	22.4	24.1	26.2	27.5	28.4	28.8
Imports of Goods and Services	45.9	41.5	42.1	46.5	50.9	46.1	37.6	37.3	39.2	35.8	35.5
Net Foreign Direct Investment	3.7	1.7	4.0	4.7	6.9	8.2	4.0	9.6	6.2	5.4	4.7

2.17 Mozambique

Terms and years	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Real GDP Growth	7.8	8.4	8.7	7.3	6.8	6.3	7.1	7.3	7.2	7.1	8.3
Real Per Capita GDP Growth	4.9	5.4	5.8	4.5	4.1	3.6	4.4	4.6	4.6	4.5	5.8
Total Investment	17.2	17.7	17.0	15.3	17.6	14.9	21.3	39.1	53.8	48.7	51.7
National Savings	4.9	0.5	8.4	4.4	4.7	2.7	9.6	14.7	8.2	6.8	8.9
Government Revenue, Excluding Grants	14.8	14.1	15.0	15.9	15.9	17.6	19.6	20.8	23.3	27.4	23.7
Government Expenditure	26.1	22.9	27.0	28.1	27.8	32.6	32.9	33.7	32.6	36.3	39.8
Government Debt	57.9	81.0	53.6	41.9	42.1	45.6	45.8	39.6	41.9	43.3	47.0
Exports of Goods and Services	33.7	31.7	38.4	35.4	32.3	27.7	31.2	30.8	33.3	34.0	34.6
Imports of Goods and Services	44.9	43.9	47.2	45.2	46.4	45.1	48.9	60.5	84.5	85.0	82.7
Net Foreign Direct Investment	3.8	1.6	2.1	5.3	5.9	8.9	14.0	20.7	36.5	36.0	27.1

2.18 Rwanda

Terms and years	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Real GDP Growth	9.0	9.4	9.2	7.6	11.2	6.2	7.2	8.2	8.0	5.0	7.5
Real Per Capita GDP Growth	7.0	7.5	7.3	5.4	8.9	4.0	5.0	6.0	5.7	2.8	5.3
Total Investment	20.6	20.8	19.3	20.2	22.8	22.3	21.7	22.2	22.2	23.0	25.3
National Savings	18.9	21.9	15.0	18.0	17.9	15.0	16.2	14.9	10.8	15.7	13.7
Government Revenue, Excluding Grants	12.8	12.5	12.1	12.4	14.8	12.7	13.1	13.9	15.2	16.6	17.5
Government Expenditure	22.8	23.4	21.7	23.1	24.7	24.1	26.2	26.7	26.3	27.7	29.1
Government Debt	47.3	70.7	26.6	27.0	21.3	22.9	23.1	23.9	24.1	29.4	28.8
Exports of Goods and Services	12.5	12.6	11.2	11.2	14.6	11.0	11.3	14.1	14.3	16.4	17.5
Imports of Goods and Services	25.9	24.7	25.1	25.3	29.7	29.0	29.2	34.4	34.8	33.5	36.5
Net Foreign Direct Investment	1.2	0.4	1.0	2.2	2.2	2.3	0.8	16.5	12.6	10.1	4.9

2.19 South Sudan

Terms and years	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Real GDP Growth									-47.6	24.4	7.1
Real Per Capita GDP Growth									-50.0	18.7	2.4
Total Investment								10.2	12.3	11.2	17.7
National Savings								27.5	-15.4	13.4	15.4
Government Revenue, Excluding Grants								21.7	11.9	13.3	32.0
Government Expenditure								20.2	34.9	27.3	41.6
Government Debt								0.0	5.0	12.7	16.1
Exports of Goods and Services								69.1	10.2	24.8	52.0
Imports of Goods and Services								28.9	43.5	21.1	47.5
Net Foreign Direct Investment								-0.2	-0.7	-2.4	1.7

2.20 Tanzania

Terms and years	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Real GDP Growth	7.3	7.4	6.7	7.1	7.4	6.0	7.0	6.4	6.9	7.0	7.2
Real Per Capita GDP Growth	4.7	5.1	3.8	4.3	4.7	3.4	4.4	3.9	4.4	3.8	4.1
Total Investment	26.9	25.1	27.6	29.6	29.8	29.0	32.0	36.7	34.6	34.2	32.8
National Savings	17.8	18.3	16.8	15.6	19.2	19.9	24.1	19.5	19.2	19.9	18.8
Government Revenue, Excluding Grants	13.7	12.2	13.6	15.2	16.0	16.1	16.3	17.3	17.5	18.0	19.0
Government Expenditure	22.6	22.2	23.2	23.1	24.5	27.0	27.5	26.9	26.3	26.8	27.4
Government Debt	42.5	56.0	42.6	28.4	29.2	32.6	37.1	40.2	40.4	41.0	42.0
Exports of Goods and Services	22.6	21.3	24.2	25.5	24.0	25.3	27.9	31.5	28.7	26.5	25.6
Imports of Goods and Services	33.2	30.2	36.2	39.3	37.2	38.0	40.1	48.0	45.4	41.5	40.2
Net Foreign Direct Investment	4.2	4.8	4.1	4.2	4.9	4.9	4.4	5.4	6.0	6.0	6.3

2.21 Togo

Terms and years	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Real GDP Growth	2.4	1.2	4.1	2.3	2.4	3.5	4.1	4.8	5.9	5.6	6.0
Real Per Capita GDP Growth	-0.2	-1.4	1.5	-0.2	-0.1	0.9	1.4	2.1	3.2	2.9	3.3
Total Investment	15.9	16.3	16.8	14.7	17.3	18.0	18.9	18.6	19.1	18.8	21.1
National Savings	20.5	55.4	5.1	21.6	-5.5	24.9	25.4	23.0	26.4	21.5	25.1
Government Revenue, Excluding Grants	16.4	15.7	17.0	16.8	15.6	15.9	18.4	17.3	18.2	18.7	19.1
Government Expenditure	19.1	19.3	21.2	20.4	17.9	21.2	22.5	23.8	26.4	26.0	27.1
Government Debt	93.4	81.7	90.7	107.2	88.5	73.4	47.3	44.0	45.2	43.3	43.6
Exports of Goods and Services	38.3	40.1	38.2	39.2	35.5	36.7	40.2	40.7	39.6	39.6	39.0
Imports of Goods and Services	56.6	58.7	56.2	58.1	52.0	52.3	56.9	61.1	61.4	62.2	62.4
Net Foreign Direct Investment	3.1	4.3	4.2	2.0	1.3	0.4	1.5	1.7	1.6	1.7	2.5

2.22 Uganda

Terms and years	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Real GDP Growth	8.3	10.0	7.0	8.1	10.4	4.1	6.2	6.2	2.8	6.0	6.4
Real Per Capita GDP Growth	4.8	6.5	3.6	4.6	6.9	0.8	2.8	2.8	-0.5	2.6	3.0
Total Investment	21.5	21.6	20.7	23.0	20.4	22.0	23.1	25.0	25.2	26.4	27.5
National Savings	16.6	19.0	16.5	17.5	11.7	14.7	12.0	12.5	14.7	14.7	15.0
Government Revenue, Excluding Grants	12.1	11.8	12.2	12.4	12.3	12.1	12.5	14.8	13.4	13.4	13.9
Government Expenditure	18.0	18.0	17.5	17.1	17.7	17.1	22.2	19.9	19.1	18.3	18.4
Government Debt	38.8	52.8	35.5	21.9	21.4	21.4	26.8	29.3	31.1	33.9	36.0
Exports of Goods and Services	16.0	15.4	15.6	17.5	18.4	20.0	19.8	23.3	22.6	22.9	22.1
Imports of Goods and Services	26.9	23.5	27.1	29.0	32.4	31.6	35.9	40.8	35.8	35.8	35.9
Net Foreign Direct Investment	4.7	3.8	5.9	5.8	4.5	5.1	3.2	4.9	7.9	4.3	5.0

2.23 Nigeria

Terms and years	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Real GDP Growth	7.0	5.4	6.2	7.0	6.0	7.0	8.0	7.4	6.6	6.3	7.1
Real Per Capita GDP Growth	4.2	2.6	3.4	4.1	3.1	4.1	5.1	4.5	3.7	3.4	4.3
Total Investment	24.0	22.2	23.5	27.6	23.3	31.8	25.9	22.5	22.4	24.6	23.6
National Savings	38.0	31.0	48.8	44.1	37.3	40.0	31.7	26.1	30.1	29.3	28.5
Government Revenue, Excluding Grants	32.6	36.3	32.3	26.9	32.0	17.8	20.0	29.9	25.3	18.9	22.1
Government Expenditure	25.0	23.3	23.3	25.3	25.7	27.2	26.8	29.0	25.3	23.8	23.9
Government Debt	23.5	28.6	11.8	12.8	11.6	15.2	15.5	17.2	18.4	19.4	20.0
Exports of Goods and Services	42.7	45.8	41.1	40.4	42.3	34.6	34.8	39.0	37.3	34.6	32.5
Imports of Goods and Services	28.4	28.2	24.9	27.9	30.9	29.3	29.5	35.0	29.4	29.1	28.0
Net Foreign Direct Investment	4.0	5.4	3.1	3.1	3.4	4.2	2.2	3.3	2.1	2.2	2.1

2.24 Mauritius

Terms and years	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Real GDP Growth	4.3	1.5	4.5	5.9	5.5	3.0	4.1	3.8	3.3	3.1	3.7
Real Per Capita GDP Growth	3.6	0.6	3.7	4.9	5.2	2.3	3.6	3.4	2.7	2.6	3.2
Total Investment	25.6	22.7	26.7	26.9	27.3	21.3	23.6	26.0	24.8	23.2	23.2
National Savings	19.3	17.7	17.6	21.5	17.2	13.9	13.3	12.7	17.1	14.1	14.5
Government Revenue, Excluding Grants	19.4	19.4	18.9	19.4	20.5	21.2	21.2	20.7	20.8	21.0	21.2
Government Expenditure	23.7	24.4	23.5	22.8	23.8	26.3	25.1	24.6	23.3	24.9	24.8
Government Debt	49.5	53.5	51.0	47.3	44.0	52.1	52.0	52.1	51.5	53.8	53.4
Exports of Goods and Services	55.6	58.0	59.6	56.7	51.1	47.0	50.9	51.8	52.9	52.4	52.1
Imports of Goods and Services	97.2	100.0	100.5	91.8	112.1	117.0	108.0	108.5	103.9	85.3	84.3
Net Foreign Direct Investment	1.6	-0.1	1.4	3.6	3.4	2.5	3.1	1.6	3.6	2.2	2.2

2.25 Seychelles

Terms and years	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Real GDP Growth	4.8	9.0	9.4	10.4	-2.1	-1.1	5.9	7.9	2.8	3.6	3.7
Real Per Capita GDP Growth	3.7	8.5	7.1	9.9	-4.3	-1.5	3.0	6.7	1.6	2.4	2.5
Total Investment	28.6	35.7	30.4	29.0	26.9	27.3	36.6	35.0	38.0	36.4	34.6
National Savings	9.8	13.1	14.3	10.2	-0.3	4.9	14.3	8.4	13.2	18.7	20.1
Government Revenue, Excluding Grants	36.5	39.2	39.7	31.7	31.4	32.9	34.2	35.3	34.4	32.9	31.3
Government Expenditure	40.0	39.7	47.1	41.5	29.4	34.1	35.9	35.2	36.8	34.3	32.4
Government Debt	143.3	144.1	135.1	144.0	130.0	123.5	80.8	72.0	76.2	62.0	59.7
Exports of Goods and Services	82.5	78.3	84.4	82.6	93.3	100.3	86.7	88.2	82.6	72.8	73.5
Imports of Goods and Services	97.2	100.0	100.5	91.8	112.1	117.0	108.0	108.5	103.9	85.3	84.3
Net Foreign Direct Investment	11.7	8.5	13.6	15.3	17.3	19.2	15.8	10.2	13.3	9.8	9.5

(World Economic and financial surveys, regional Economic outlook, sub- Saharan Africa, fostering durable and inclusive growth, 78: 104)

As we have mentioned before that the process of technology transfer needs several tools to implement it on the ground and in the same time, we can see its results on the ground through explaining several tools such as GDP , Export , import , Net foreign Direct investment , and rates of government Debts and others , this chapter is talking about technology transfer to developing countries and economic development in the sub Saharan Africa , Therefore , the researcher has offered the process of technology transfer there, through several points , rate of investments and role of china and indicators of economic The researcher has put tables of indicators of economic to some of SSA to determine power of their economies on the ground.

On the other hand , decision makers can draw maps of economic to take good decisions in order to make Egyptian economics arms in Africa to promote power of Egyptian economy around the world ,in particular, in Africa (SSA). The indicators consist of series of periods from 2004 to 2014 and indicators as following: Real GDP Growth, Real Per Capita GDP Growth, Total Investments, Gross National Savings, Government Revenue, Excluding Grants, Government Expenditure, Government Debt, Exports of Goods and Services, Imports of Goods and Services, Net Foreign Direct Investment. The researcher has offered several countries to all previous indicators between richer countries and poor countries.

initially, South Africa, from 2004 to 2007 rate of real GDP Growth has increased year after year but has decreased from 2008 to 2009 and after that, between increasing and decreasing, but real GDP Growth did not back again to the same indicators before 2008 " global financial crisis ".

As we know that GDP is a tool of measure level of citizens income in any country then reflects on purchasing power to consumers , and efficient level of saving and investment. any investor wants profits therefore, increasing of GDP rate lead to foreign investment and an investor will search for other market which owns strong GDP rate in order to make more and more profits and if the reader look at the rate of Net Foreign Direct Investment, we will find that it has taken the same trends GDP, except 2008 , rate of Net foreign Direct investment has increased but investors may wait to what were results of global financial crisis to withdrawal their investments there. but from 2009 to 2014 the rate of Net of Foreign Direct investment has been decreased.

There are three important indictors which show the effect of FDI on Economy of south Africa and they are rates of revenues, expenditures and rates of government Debts, initially, rates of expenditures bigger than revenues from 2008 to 2014 but before 2004 rates of them were equal

and in 2005 expenditures were bigger than revenues but 2006 and in 2007 revenues were bigger than expenditures, with knowledge that, this increasing is very simple , on the other hand , rate of debts is very complex and difficult , from 2009 to 2014 rate of it has increased year after year before 2014, between increasing and decreasing , In recent years, rate of expenditures has been increased and in the same time rates of debts ,therefore the researcher can say that state of country is very difficult and revenues of state are weak , this matter is because of couple of reasons, the first is weak taxes system or the second is decreasing of Foreign Direct investment then taxes of states and rate of debts is an indicator to measure the state financial position and this indicator is to measure degree of safe of investment in the state .

The researcher has showed the position of economic in south Africa and How can the Egyptian government spread Egyptian investments in Africa but there are others countries , which they do not have strong economy , surely, this is bad position for them but in the same time , will good position for us, how this ? let s go to see example about south Sudan , new a member in the international society.

The researcher will talk about different indicators in the south Sudan economy such as : real GDP Growth , national savings and others as the researcher has mentioned it in the table of south Sudan (2.19) Initially , the analysis of economic will start 2011 , if we look at the government Debt from 2011 to 2014 we will find them as follows : 0,0 , 5.0 , 12,7 ,16,1 and over the same period but in other indicator under title government Expenditure in 2011 was 20.2 and in 2014 was 41,6 and with regard to net foreign Direct investment , the researcher finds that the indicators are very bad except in 2014 but when we look at the important indicator which reflected on level of incomes , the researcher means Real GDP Growth in 2012 was - 47,6 but in 2014 was 7.1 and in 2013 was 24.4 then there is important question , How was the rate of individuals income very weak, in spite of, level improvement of investments? As we have seen in The table of south Sudan. The answer is very simple what about the level of debt ? really , it played negative role there as we have seen above . government Expenditure has increased year after year and rate of national Savings were very bad from year to another , In brief , the researcher wants to say the Egyptian government can play an important role with south Sudan through which can provide to it great experiences in all different fields and this country will be great base to spread arms of Egyptian economic in south Sudan.

Table of (2.25) Seychelles , if we look at Exports and imports , we will find that commercial exchange between Seychelles and rest of the world is negative, and net foreign Direct investment is very bad from year to another because of decreasing of rate of it and any improvement is very simple. And there are great indicators represent Government Debt ,

government Expenditure , national savings which are reflected on improvement of performance of financial institutions in this country in the recent years . But level of individual income is very bad with knowledge that, in the recent years , the rate of GDP became better after financial crisis in 2008.

And now the researcher wants to focus on comparing between couple of states in Africa , unfortunately , they have weak rate of growth in their countries , they are Ethiopia and Rwanda and the Egyptian government can determine , how it can spread Egyptian companies there. if we look at the rate of net foreign direct investment between them , we will find that generally , the Rwanda is better than Ethiopia and with regard to commercial balance , we will find that both of them have negative balance. But Ethiopia is stronger than Rwanda in the rate of national savings . rate of government debt is very important to measure degree of economic safe in any country around the world and if we want to spread of Egyptian investment in others countries , we need to know rate of debt which reflected on individuals income. and level of income is very important to consumption as important factor to Egyptian investor to sell his products well in those country, Therefore with compare between Rwanda and Ethiopia , we find that position of Rwanda better than Ethiopia until 2011 after that the position has been changed but numbers was closer between them.

And the tables consists of indicators to determine centers of power and weakness in different African economies to enable the policy maker draw policies well to spread Egyptian economic power in Africa over long term. and as we have mentioned before that the researcher has chosen china as strong partner to help Egypt to get advanced technology and hence spread it in Africa.

Abbreviation

EU : European union

GDP: gross Domestic product

TNCs : transnational corporations

R&D : research and development

WIPO : world intellectual property organization

SSA : sub – Saharan Africa

TT: technology transfer

FDI : foreign direct investment

GOI : The government of Indonesia

GEPD: Gross Expenditures on Research and Development

PCT: Patent Cooperation Treaty

WTO: world trade organization

IP: Intellectual property

TRIPS: Trade Related Aspects of Intellectual Property Rights

AGC: Ashanti Goldfields Corporation

NIPC: Nigeria Investment Promotion Commission

IPC: Investment Promotion Centre

UIA: Uganda Investment Authority

SADC: the Southern African Development Community

OECD: Organization for Economic Cooperation and Development

EAC: the East African Community

GNP : Gross national product

UNCTAD: united nation conference on trade and development

LDC: least developed countries

GSK: Glaxo smith Kline

MNC :multinational corporation

SEP: special energy program

List of resources

1- ELSAYED AHMED ABDEL KHALEK , Direct foreign investment, transnational corporation and the transfer of technology to Egypt , PH.D , university of Keele.

2- María C. Latorre, 2006: 2008.

3- world investment report , united nations conference on trade and development 2014.

4- IMF

5- Gill Wilkins , technology transfer for renewable energy 2002 , the royal institute of international affairs , 10 st james s square , London SWIY4 LE.

6- Economic development in Africa report, UNCTED, 2014.

7- World Bank.

8- Technology Transfer", Capacity Building and the Developing World, GSK Public policy positions.

9- Jeffrey Wadsworth, 2014 gable R.D funding forecast 2013, www.rdmag.com

10- UNITED NATIONS, 2005.

11- Henri Charmasson and John Buchaca, patents, copyrights & trademarks for dummies2008, viley publishing , INC.

12- ULF ANDERFEL T, international patent – legislation and developing countries 1971, Martinus Nijhoff , the Hague , Netherlands.

13- WTO: 2015 NEWS ITEMS 26 February 2015,intellectual property : symposium on the trips agreement.

14- WTO: 2015 NEWS ITEMS 16 March 2015

15- World intellectual property indicators, 2014.

16- Support for environmental technology and environmental industry acts, 2011.

17- Lyuba Zarsky, international investment for sustainable development 2005, Earthscan in the UK and USA.

18- UNITED NATIONS,2009.

19- Yusufu Unisa Kamara, foreign direct investment and growth in sub-Saharan Africa what are the Channels? PhD. Candidate, University of Kansas, 2013.

20- Foreign Direct Investment in Agri-Food Networks in India and Sub-Saharan Africa Study by Martin Franz and Philip Müller

21- Paulo Drummond and Estelle Xue Liu1, Africa s rising Exposure to china : How large are spillovers through trade ? IMF working paper , WP , 2013

22- GLOBAL ECONOMIC PROSPECTS ,January, 2015.

23- (http://investmentpolicyhub.unctad.org/ 9/ 5 / 2015).

24-(TRIPS: WHAT ARE IPRS (8 /5 /2015?) (typically 20 years in the case of patents).