

Economic Analysis on the Motives of China's FDI in Africa: A Case Study on North Africa

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***Abstract:** Taking the Arab countries of North Africa as specific case studies, the author first describes the general situation of China's Foreign Direct Investment (FDI) in that region, and then makes a detailed analysis over the motives of such investment by an employment of methodology derived from fundamental principles of international economics. Finally, the author comes up with a proposal on the strategic options on the types of FDI that should be adopted by Chinese enterprises and the target sectors & industries that deserve more attention from Chinese investors. The author argues that China's FDI into Africa has been promoted mainly by a series of domestic factors, including adjustment of China's domestic industrial structure, a trend of pluralizing sources of procurement in its national strategies on energy and resources, and intent to avoid external trade frictions and barriers by domestic entrepreneurs and merchants. The Arab countries in North Africa now become the major targets of China's FDI in Africa, which can be mainly attributed to their relatively steady economic growth, good business environment, and strong national competitiveness. From the author's point of view, China's FDI in North Africa should focus on three types: resource-oriented investment, export-oriented investment, and industry-oriented investment. China's FDI in this region should be*

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mainly streamed into such sectors and industries as energy, agriculture, machinery, and telecommunication.

Key Words: *China's FDI in Africa; Cause; Arab Countries in North Africa; Strategic Options*

FDI and foreign trade are the two major channels through which a country participates into business on the international market. Amid deepened and upgraded development of economic globalization, the connection between trade and investment is being continuously enhanced, and investment is becoming an important factor influencing and shaping the trade growth of various countries. Since the 1970s, the FDI from developing countries has been on an impetus of tremendous and drastic growth, attracting more and more attention from Western economists. For a full and accurate understanding on this impetus, the motives and conditions shaping it should be precisely and convincingly explained by theories of FDI, just like the theoretic explanation already made on FDI in developed countries. Since the establishment of China-Africa Cooperation Forum, the economic cooperation between China and Africa has been promoted into a Golden Age (Zhang, 2010). In 2000, the total volume of trade between China and Africa exceeded the level of 10 billion US dollars, followed by an annual growth of over 30% in the consecutive eight years. In 2008, the total volume of China-Africa trade added up to 106.8 billion US dollars, exceeding the level of 100 billion US dollars, while China's FDI into Africa reached 5.49 billion US dollars. In that same year, Africa enjoyed the largest share of growth of FDI inflow from China among all the various regions of the world that absorbed China's FDI, an increase of 249% from the level of 2007. In the end of 2008, the stock of China's FDI in Africa added up to 7.8 billion US dollars, taking a share of 4.2% of its total in the whole world. China has established nearly 1600 enterprises in Africa, a 12.9% of its total number of overseas enterprises (Ministry of Commerce of China: 2009). With China's investment in Africa expanding steadily, African trade partners of China can be found in every corner of that continent.

I. The General Situation of China's FDI into North Africa

The break-out of the US financial crisis in 2008 posed unprecedented challenge and testing on China's economic and social development, which in turn accelerated the "going global" pace of Chinese enterprises for more active and extensive international economic cooperation. In 2008 China's FDI into external world exceeded 50 billion US dollars, with a net outflow of 5.591 billion US dollars, in which a total amount of 5.49 billion US dollars flowed into African countries. In that year Africa headed the list of regions that enjoyed the largest share of growth of FDI from China, with an increase of 249% from the 2007 level. Calculated in the end of 2008, the total stock of FDI from China was 183.9 17 billion US dollars, scattered over 174 countries and regions of the world, including a stock of investment of 7.8 billion US dollars in Africa that accounts for a 4.2% of the total. China's investment in Africa covers 81.4% of that continent, and there are nearly 1600 Chinese enterprises established and operated in Africa, accounting for 12.9% of the total number of overseas Chinese enterprises.

China's FDI into Arab countries of North Africa can be characterized by the following data. Calculated in the end of 2008, the total stock of China's investment in Africa added up to 7.8 billion US dollars, of which its stock of investment in Arab countries of North Africa took a share of 27%, reaching 2.08 billion US dollars. (Data can be surveyed in Table 1) This shows the outstanding and significant status of North Africa and Arab countries in the total distribution pattern of China's investment in Africa. The Arab countries of North Africa become a major destination of FDI from China into Africa.

Table 1. Stock of China's Investment in North Africa 2003-2008

Unit: 10,000 US Dollars

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Country	2003	2004	2005	2006	2007	2008
Algeria	570	3,449	17,121	24,737	39,389	50,882
Egypt	1,429	1,428	3,980	10,043	13,160	13,135
Libya	86	87	3,306	2,857	7,083	8,158
Mauritania	182	213	240	2,012	1,514	2,476
Morocco	431	906	2,059	2,701	2,965	2,806
Sudan	55	17,161	35,153	49,713	57,485	52,825
Tunisia	156	128	215	391	357	357

Source: Ministry of Commerce, People's Republic of China

Based on the statistics over the stock, it can be concluded that a general trend of steady growth can be found on China's annual investment into this region, except a slow-down in 2008 due to the severe impact from international financial crisis of that year (Table 2). The FDI from China mainly concentrated into Sudan, Algeria, and Egypt, reflecting a somewhat imbalanced distribution over various countries of that region.

Table 2. Inflow of China's Direct Investment into North Africa 2003-2008

Unit: 10, 000 US Dollars

Country	2003	2004	2005	2006	2007	2008
Algeria	247	1,121	8,487	9,893	14,592	4,225
Egypt	210	572	1,331	885	2,498	1,457
Libya	10	6	25	-851	4,226	1,054
Mauritania	170	9	36	478	-498	-65
Morocco	19	180	85	178	264	688
Sudan	-	14,670	9,113	5,079	6,540	-6314
Tunisia	-	22	-	173	-34	-

Source: Ministry of Commerce, People's Republic of China

At present, China's investment in this region covers diverse sectors and industries, including trade, processing and manufacture,

resource prospecting and development, agriculture and comprehensive development of agricultural products. The resource-related industries still enjoy the largest share of investment, including prospecting and development of oil, non-ferrous metal, etc.

II. Economic Analysis on the Motives of China's FDI in Africa

A. Principle of International Economics behind the Motives of China's FDI in Africa

British economist David Ricardo, the representative of the Classical School of Political Economics, pointed out that a country should formulate its industrial policy in conformity to its comparative advantages. In another word, in a two-country model, when the resources and productive technologies owned by either country are fixed and limited, each should organizes its production in accordance with the principle of "producing the most advantageous and the least disadvantageous categories of commodities of the two countries in their mutual comparison", and then both countries exchange with each other. In this way, the absolute numbers of commodities owned and enjoyed by both countries could be substantially increased. Swedish economists Heckscher and Ohlin further pointed out that industrial policy should be based on its natural endowment of productive elements, because the comparative advantage is always rooted in the pattern of natural endowment of that country. They maintained that a country should manufacture the commodities that mainly contain the most plentiful productive elements in its natural endowment. Now as a matter of fact, the FDI from China is just promoted by China's domestic demand for an optimization of its industrial structure, which means the theory of comparative advantage could offer some kind of guidance and reference to Chinese entrepreneurs when they are making strategic options over target industries of their overseas investment.

Vernon (1966) declared his noted theory of product life cycle. In his

opinion, the life cycle of new products would be continuously reduced and FDI's role as a substitute for export from its source country will be increasingly strengthened, due to the process of internationalization of transnational companies. He initiated a dynamic research on the foundation of competitive advantage of firms, and its process of transformation in which the previous capital-intensive nature of products is gradually metamorphosed into labor-intensive one. He argued that the transformation of nature of products should be regarded as the general basis, on which investment is transferred from industrialized world to developing countries, and which determines the options of geographical destinations and timing of FDI. This theory tells us that owing to the close correlation between FDI and product life cycle, investors usually make very rational and cautious choice over the target areas for their investment, whose economic development levels must be confirmed as accurately proportional to and harmonized with the specific stage of life cycle of the products manufactured by these investors. Although this theory does not mention a clarified strategy of options over target industries for FDI, it does indirectly explains the necessity and feasibility of selecting specific but appropriate target industries for FDI in accordance with certain stage of life cycle of products of investors. This idea looms in the analysis over appropriateness of transfer of products among various types of countries in their specific stages of life cycles.

The theory of "expansion of marginal industries" invented by Kiyoshi Kojima (1978) argues that FDI should be launched first by investors from domestic marginal industries, and then escalated into uplifting sequence. FDI should be considered not as a substitute for trade, but as an active force that could complement, create, and even expand trade. This theory maintains that international trade is usually based on the comparative advantages, whereas FDI is normally started by investors from comparatively disadvantageous industries, which could finally expand the comparative advantages of both countries in the two-country model of traditional trade theory. He

explained the national motive of FDI from macro level, laying a theoretic foundation for gradient transfer of industries. Therefore a proper degree of FDI from “marginal industries” can promote international trade and effectively upgrading the industrial structure of trading countries, pushing the overall economic development. Meanwhile, such FDI can be easily integrated into domestic national economy of host countries because the technological and managerial gap between host countries and source countries is usually small on the target industries of the FDI. In this sense, the FDI from so-called marginal industries can be viewed as the most effective means of technological transfer. This theory can also be used as a guidance and reference to the choice of target industries for China’s FDI.

The theory of “small-scaled technology” was initiated by U.S. economist Wells (1983). It makes an explicit narration over the feasible and practicable paths for FDI from developing countries, with a reasoning based on the principle of comparative advantage. The so-called comparative advantage in this theory mainly refers to the advantage of low cost, which is usually viewed as a major characteristic of developing economies. Employing a model derived from product life cycle theory, the classical dynamic theory of FDI, Wells argued that the unique nature of the standardization stage of a product’s life cycle offers special chances for developing countries to make their own FDI overseas, since a precious advantage of low cost of production are owned by those transnational companies from developing countries. He analyzed the comparative advantages of transnational companies of developing economies from three aspects. First, developing countries own technologies of small-scaled production that can effectively serve small markets. Second, they enjoy advantages on their ethnically-unique commodities that can be manufactured by utilizing their various domestic resources, including mature technologies, facilities, talents, and capacities of research and development. These commodities can be manufactured by them at uniquely low cost. Third, they can effectively operate marketing

strategies that are sophisticatedly configured to low price products. Companies from developing economies can offer products with good quality at low price in an efficient way, to which companies from industrialized countries are no match. At the same time, developing countries are generally in close vicinity to target countries of their FDI, which can provide geographical convenience for their transnational companies to formulate a localized low-price strategy based on full utilization of local labor, infrastructural facilities, and advertising means at very low cost.

B. Domestic Theoretic Summarization over the Motive of China's FDI in Africa

Wang Mingxing and Sun Jianzhong came up with the idea (2002) that China should seek its "dynamic comparative national interest" by means of transnational direct investment in the process of international capital flowing, which should be guided by the "pioneering strategy" of "going global". Chen Zongde (2004) pointed out that China should first select some specifically appropriate industries as the priority targets for its FDI, which might include agriculture, infrastructure, manufacturing, IT industry, and construction. Piao Yingji (2005) took a retrospective contemplation on the role of FDI of mining industry over the overall economic development of African countries, with a special focus on the endogenous development and evolution of Africa. Han Lingmei (2006) analyzed geographical factors' influence over the investment strategies of Chinese companies in Africa, putting her argument on the basis of international direct investment theory with a special focus on the practical significance of China's FDI into Africa. Zhang Rui (2007) researched the major characteristics, path dependency, and objective options of China's FDI in Africa, and the influence of policy-application mechanism of Chinese governmental over it, constructing his idea on analysis over market potential and business environment of Africa. Liu Fang (2008) argued that there are three

major motives that push China's FDI into Africa. The first motive is to seek overseas prospecting and development of resources, promoting both import and export of China, which is reflected on the induced export and converse import effect. The second motive is to explore and occupy the African market, and the expansion of African market will pull Chinese foreign trade into an effect of dynamic change. At the initial stage, investment will have a positive effect on trade. However, it will become a substitute for trade when it is expanded to a certain degree in collaboration with production. The third motive is to evade the trade barriers, which elusively shapes the influence of China's FDI in Africa over its foreign trade. The leveling direct investment acts as a substitute for trade, while the vertical direct investment promotes China's trade with Africa.

III. Analysis on the Motives of China's FDI in North Africa

A. The Influence of the Conditions of North Africa over China's FDI in This Region

Based on his investigation over key factors determining international institutions' investment over Africa, Moses M. Ikiara concluded that a rather optimistic prospect can be obtained for FDI in those African countries that have large capacity of domestic market, fast economic growth, large margin of return for investment, and highly liberalized trade. Therefore the relative advantages of Arabic countries of North Africa in the fields of economic levels, business environment, and overall national competitiveness make them tremendously attractive to foreign investment (Ikiara, 2003: 30). That's why China's FDI in Africa is mainly streamed into these countries.

First, as members of the so-called "SANE" group (Africa Development Bank: 2007), Algeria and Egypt of North Africa have become part of the powerhouse that drives the overall economic development of African continent. These two countries enjoy good pace of economic development and high level of industrialization, with

special advantages of large capacities of domestic markets, which are reflected on their respective populations of 76 million and 33.9 million. The fast economic developments of these two countries are radiating their influence all over the neighboring areas, setting up a good example. Meanwhile these two countries also have convenient channels extending into international market, due to their geographical adjacency to industrialized world (Piao, 2008). Egypt enjoys a particular geographical advantage due to its location in the center of the whole Middle East region and adjacent to both Africa and European heartland market. Through its free trade agreement with European, American, and African countries, it now radiates its influence over Middle East and African markets, acting as a pivot and hub for external commodities to gain an access to European market. At the same time, the first quarter report of business prediction of 2010 issued by Business Monitor International (BMI) reveals that the economy of Sudan has been greatly improved in recent years. According to its calculation, the actual GDP growth rate of Sudan in 2009 reached 4.3%, higher than the estimated 3.2% in last quarter. It is also estimated that Sudan's economy will enjoy an impetus of growth in next several years. Its GDP growth rate might be uplifted to 6.1% in 2010, and its average GDP growth rate from 2011 to 2014 might be 5.1%. The major factor contributing to its economic growth is the rise of oil price.

Second, most Arab countries of North Africa enjoy political stability, and their business environments are comparatively good. The report of *Global Business Environment 2008* issued by the World Bank reveals that Egypt heads the list of countries implementing business environment reforms all over the globe. *The Business Report 2010* issued by the World Bank also pointed out that Morocco is the most active country of the world in terms of promoting economic reform for the purpose of assisting business transactions and perfecting business environment. According to the report drafted by the World Bank and International Finance Corporation, among all the African countries, only Morocco has accelerated information system

offering service to banking and credit. This report also mentioned that Morocco ranked one of the first 27 countries out of altogether 183 countries promoting banking reforms for easier credit. In the past 20 years, Tunisia has also gained outstanding achievement in its economic reform, which fuels the continuous economic development and tremendous improvement of its business environment. Due to its successful integration into the world economy, it ranks the 1st of African and Maghreb countries and 41st of all the 121 countries of the world in the ranking list of degree of international trade convenience of 2009, which was issued by World Economic Forum.

Third, the Arab countries of North Africa head the list of ranks of overall national competitiveness of Africa. In accordance with the statistical data revealed by *Global Competitiveness Report (2006-2007)* issued by World Economic Forum, Tunisia ranked the 30th, Egypt ranked the 63rd, Morocco ranks the 69th, and Algeria ranks the 78th, in the list of global competitiveness of altogether 125 countries of the world. Nevertheless, the ranking of these four North African countries were a little bit lowered in the *Global Competitiveness Report (2008-2009)*, in which Tunisia ranked the 99th, Morocco ranked the 73rd, Egypt ranked the 81st, Libya ranked the 91st, and Algeria ranked 99th. But a sober consciousness should be kept on the fact that their ranking of global competitiveness will be inevitably uplifted again once the global economy recovers from financial crisis and the prices for raw materials and staple commodities soars in turn.

B. The Influence of China's Domestic Conditions over China's FDI in Arab Countries of North Africa

First, China's domestic demand for a transformative upgrading over its domestic industrial structure offers a driving force pushing China's FDI into Africa. The profound significance of this domestic demand now can be more comprehensively and fully understood in the post-financial-crisis time. Kiyoshi Kojima argued in his theory of "expansion of marginal industries" that FDI should be initiated from

the domestic marginal industries and then be advanced to other industries in turn. He thought that in this way, the respective comparative advantages of a two-country model can be enlarged. The so-called "marginal industries" refer to those industries that are losing or to lose advantages in FDI's source country but still enjoy relative advantages of low cost and great market potential in host countries absorbing FDI. His model gives a macro-economic explanation over the national motive of initiating and expanding FDI overseas, which establishes a theoretic basis to justify the gradient transfer of industries. In China, the term of "marginal industries" should cover those over-supplying labor-intensive industries, including foodstuff and garment-manufacturing, on which we Chinese enterprises enjoy comparative advantages of relatively advanced technologies and excellent product quality. More importantly, those Arab countries of North Africa own capacities of accepting the transfer of these industries from China, in consideration of their sound economic basis, impetus of future development, and good level of productivity. In this sense, China's FDI into this region can satisfy Chinese domestic demand for adjustment and upgrading of its domestic industrial structure, not only making room for China's domestic high-tech industries, but also making the best use of over-surplus productive capacity.

Second, China's FDI in this region is also motivated by a request for diversifying its sources of procurement of energy and resources, because China's economic development is restricted by its huge demand on resources and energy. The recent statistics reveal that China's annual demand for energy is increasing by a two-digit rate. Amid its very fast economic growth, it has become the second largest energy consumer of the world. Experts have predicted that its energy dependency rate in 2010 will reach 60%. China will inevitably step onto the path of pursuing a "Going Global" strategy in addition to its already implemented strategy of self-strengthening of domestic energy production, because it is apparent that its domestic energy production can no longer meet its ever-growing demand, which has to

be met by taking advantage of new tide of economic globalization. Now China is not only extending its oil-prospecting cooperation with Russia, Kazakhstan, their neighboring areas, and Middle East countries, but also negotiating possible cooperation and coordination with oil-producing countries in Africa and Latin America. North African countries, such as Sudan, Egypt, Libya, and Algeria, own tremendous oil reserves. Under such circumstances, it is quite natural for China to strengthen its cooperation with North African countries in the fields of oil-prospecting and energy development, which should be positioned as one of the best paths for achieving diversification of sources of China's energy procurement.

Third, Chinese entrepreneurs' intend to evade trade friction and circumvent trade barriers also to contribute to their impulse to make FDI into that region. As a general law, the slow-down and recession of the world economy has intensified protectionism and trade wars. As the shrinking markets and rising trade barriers in Europe and North America have dealt a heavy blow to China, Africa begins to draw more and more attention from frustrated Chinese entrepreneurs who are desperately seeking new markets. They attach more and more importance to the exploration of African markets, regarding this region as a new hope of integrating their enterprises with waves of economic globalization and achieving more efficient allocation of resources for obtaining larger overall profit and welfare. As a matter of fact, protectionism continues to be strengthened, in company with the looming and extension of financial crisis that still maintains its horrible impetus of severe impacts on world economy relentlessly. Experts predict that China's export will meet even more frictions and barriers in 2010, which will appear increasingly diversified, comprehensive, and disguised. Xiao Yaofei, a scholar in Guangdong Foreign Studies University, pointed out those frictions of international trade would remain very frequent, spreading from traditional markets to newly-emerging markets and countries, and diversified by new forms of anti-dumping, special protection, and technological barriers.

In the past years, technological barriers of trade in the name of product safety and environmental protection were obstructing Chinese commodities, meanwhile new forms of trade frictions, such as anti-dumping and counter-veiling, were haunting Chinese exporters even more frequently. Statistical data of WTO shows that the anti-dumping cases against Chinese products account for 1/7 of total since the establishment of WTO. Now one out of every three anti-dumping cases in the world has put Chinese products as its target. In this sense, China has become the country suffering the most anti-dumping cases in the world. Under such circumstances, FDI for the purpose of localization of overseas production and sale is considered as an effective means to circumvent trade frictions and barriers. Since the end of the 20th century, many Chinese entrepreneurs have pioneered abroad for the purpose of getting rid of restrictions posed by various quotas. They are now investing and establishing factories and firms in Africa, enthusiastically exploring and securing broader overseas markets in that continent by utilizing beneficiary conditions of local countries. For example, Egypt has signed trade agreements with the US, EU, and the rest of Arabic world, so Egyptian export could effectively circumvent trade barriers and other restrictions in these areas, and even enjoys zero-tariff and other favorable treatments. Due to these trade agreements, Egyptian export of textile to the U.S. is not restricted by any quotas, and charged with no tariffs. Lured by such enormously preferential conditions, Chinese textile enterprises naturally create strong a desire of making FDI in Egypt. The Egypt Nile Textile Co. Ltd., a textile company wholly invested by Chinese entrepreneurs, shows a good case. It was established in 2000 with an investment of 2.5 million US dollars, which was recovered by returns in only a little more than one year. Now the annual net profit of this company reaches around 1 million US dollars.

IV. Strategic Options for China's FDI in North Africa

A. Options over Types of Investment

In consideration of the local conditions and social & economic trends of North African countries, and the present situation of China's existing investment in this region, the author argues that the following types of investment should be regarded as the priority for China's future expansion of its FDI in this region:

The first type is resource-oriented investment. The per-capita reserves of most categories of natural resources are not plentiful. In the process of industrialization that sustained the fast economic growth, the inadequacy of resource supply is posing more and more severe restrictions on China's sustainable development of economy. The very limited amounts of reserves of natural resources inside China are far below the increasing demands that are derived from a desire for sustained and steady economic development. The gap is widened continuously. Under such circumstances, the rich reserve of natural resources in Egypt, Libya, Sudan, and other Arabic countries of North Africa attract attention of Chinese policy-makers and entrepreneurs. It is both natural and feasible for Chinese to invest more money on the oil fields and mines in these countries, so as to establish a mutually-complementary pattern of economic cooperation between China and these countries. It has been surveyed and confirmed that Egypt now owns an oil reserve of 3.6 billion barrels, an equivalent of 500 million tons. And it is also estimated that around 3.118 billion barrels of oil reserve has not been clearly prospected and confirmed. As the "Northern Gate of Africa" and an important member of OPEC, Libya also owns plentiful oil reserves. It is reported by *The Oil and Gas Journal* (OGJ) that the overall oil reserve located in Libya is 44 billion barrels, the largest in Africa. Due to advantageous geological conditions, the oil fields in Libya can produce excellent-quality oil at a cost as low as less than 1 dollar for a barrel in some of its internal regions (Luo, 2006). It is calculated at the end of January 2009, the already surveyed and confirmed oil reserve in Sudan is 5 billion barrels, mainly concentrated in Muglad and Melut

Basins of its south. In 2008 the oil productivity in Sudan is 480,000 barrel per day, while its oil consumption rate is 86,000 barrels per day, which means a surplus of 394,000 barrels per day is sold out, mainly to Asian markets. Official statistics reveals that the average rate of Sudan's oil export to China is 214,000 barrels per day in 2008, accounting for 55% of its total oil export.

The second type is export-oriented and market-oriented investment aiming at an exploration and protection of markets for Chinese traditional export. Some North African countries, such as Egypt, adopt an export-oriented policy, encouraging exports but restricting imports. Owing to China's huge surplus from its trade with this region, some of these countries are implementing protectionist policies toward China, obstructing China's commodities by some special tariff and non-tariff barriers, which are often supplemented by anti-dumping measures. Therefore Chinese entrepreneurs have to pay great attention to the exploration and maintenance of their North African markets. If it is not possible for Chinese exporters to circumvent some trade barriers by normal international tactics, FDI in these local markets becomes a rational option that can convert the pattern of domestic production and foreign sale into the pattern of localization of both production and sale. In this way trade barriers can be circumvented, meanwhile it is also quite convenient for designers and producers to approach local markets so as to capture accurate information on the volatile conditions of local market, which in turn decreases the transport expenses and helps to maintain and expand the market share. In this sense FDI could be viewed as another form of export, which exports are not end products, but capital goods such as machinery and equipments, and middle products such as components and raw materials. At the same time, FDI could also be viewed as a special form of export of intellectual property such as patents and technical know-hows. Moreover, Chinese investors should manage to infiltrate into the neighboring area around North Africa, because most Arab countries of this region, such as Egypt, have participated many

different regional economic organizations, which might provide some favorable conditions or preferential arrangement for export from these countries.

The third type should be industry-oriented investment. Playing the role of promoting domestic industrial upgrading, FDI should be made from those domestic industries owning comparative advantages, so as to ensure that FDI can create a chain of radiation effects that helps to improve domestic industrial chains. The asset and stock of those already matured domestic industries should be transferred out so as to make room for newly emerging industries, meanwhile matured industries might be further perfected and its profit rate can be maintained once it is mainly transferred out. In the sector of manufacturing, comparative advantages can be found in such industries as textile, household electric appliances, electronics, and machinery, which not only own strong capacity of processing and assembly, but also control stable technologies and good quality of products, paving the way for the so-called "gradient transfer". Therefore these industries could be easily localized to meet market demands of in those Arabic countries of North Africa. The economic levels of North African countries are usually a little bit lower than that of China, so the FDI from these mature industries can meet domestic demand of upgrading the industrial structure and creating more jobs. As a matter of fact, cost is a key factor influencing the competitiveness of the product in the mature stage of its life cycle. Whereas in North African countries such productive elements as labor, land, as well as utility such as water, electricity, and gas supply, are quite cheap. Take Egypt as an example. In this country the land prices for industrial projects and export agriculture are very low. Recently, the land price of the industrial park of Sadat City has been lowered from 75 pound/sq. meter to 60 pound/sq. meter. Meanwhile in Egypt labor is also very cheap and plentiful. Its average level of monthly wage for common workers is between 65 and 200 US dollars, with a minimum wage of 37.5 US dollars per month. Furthermore, in order to attract

foreign investment and expand export, Egyptian government also provides some favorable policies and regulations in taxation. Therefore we can transfer capital of some saturated labor-intensive industries from China into these countries, which will not only create new jobs for host countries, but also lowered cost of Chinese enterprises.

B. Options over Types of Industries

First, we should continue China's cooperation with this region on energy industries, maintaining China's FDI into this field. Arab countries of North Africa own large reserves of natural resources, including strategic resources such as oil, natural gas, and metal mines. Sudan and Algeria, the two countries of this region, are emerging oil producers. Hence, China's FDI into the energy industries of this region has very significant influence over China's energy supply and strategic storage. North African countries lack capital and technologies to make use of their plentiful resources, while China has accumulated relatively advanced technologies and has established a sound basis of petrol and chemical industry. So a promising future can be fulfilled for the mutually-complementary cooperation of both sides on the sector of energy industries. Now 30% of the total oil imported into China is procured from Africa. Some of Chinese oil companies are also directly engaged in oil-drilling in Algeria and Sudan. In Sudan, Chinese companies has established a complete set of chains of oil industry integrating oil drilling with refinery, transport, and sale, covering all the starting, middle, and ending procedures of that industry. Promoted by investment projects, Chinese Engineering Technical Service Companies also make rapid progress there, establishing a supportive service system integrating all the necessary major and auxiliary procedures related to oil industry, including ground construction, geophysical prospecting, well-drilling, logging, pipe layout, and material supply. Now a good foundation for China's cooperation with oil-rich countries of North Africa has been completed. While North African countries are still making an effort to

get out of shadow of brought by the financial crisis, further deepening of bilateral cooperation in the field of energy industries could have a far-reaching influence on them.

Second, China should strengthen its cooperation with Arab countries of North Africa in the field of agriculture, into which we should bring more FDI. With the world economic integration, the economic connections between various countries are extended and enhanced. Now the agricultural cooperation between China and North Africa could play a decisive role for the optimization of allocation of agricultural resources, the expansion of frontier for future development of agriculture, and the promotion of bilateral economic and trade relation. Bilateral agricultural cooperation has just been initiated in recent years, with a need for more expansion of both depth and width. The relatively plentiful capital and huge market demand of China could invigorate agriculture in North Africa. Some unique agricultural technologies of North Africa, such as those for drought-resistance, irrigation, and breeding of seeds of some superior species of crops, could also offer new promises for China. Therefore bilateral agricultural cooperation should be further promoted and fully expanded.

Third, much investment from China should be put into the telecommunication industry of North African countries. Egypt has the fastest expanding market of telecommunication products in the whole Middle East and Africa, with a potential overall capacity of over 5 billion US dollars. Since the relaxing of its control over this market in 2005, the demand has been soaring tremendously, which means countless opportunities for Chinese providers of telecommunication equipments and service. The expansion of telecommunication market of Egypt means a great demand for related equipments and components, including wires and cables, transformers and converters, base stations, microwave communication facilities, wi-fi wireless equipments, etc. Those competent Chinese telecommunication enterprises should enter the Egyptian market to seek some chances of

contracting large projects. In this way, China's export of related products can also be greatly promoted. Just recently, Algeria also issued its "Plan of 2013 Electronic Algeria" aiming at a change over its backward conditions in telecommunication technologies, so as to improve its governmental efficiency. In order to implement this plan, it also planned a series of large projects. At the same time, Zhongxing and Huawei, the two famous Chinese telecommunication enterprises already operating in Algeria, have gained considerable market share and official recognition in Algeria. Great prospect is waiting for more investment from more Chinese enterprises.

Fourth, China's FDI in this region should also be focused on machinery. Take Algeria as an example. It has issued its "Five-Year Economic Construction Plan for Period between 2009-2014". According to this plan, Algerian government will invest over 200 billion US dollars into national construction, especially infrastructure construction, which means a drastic increase of demand for machinery products in the future, offering almost immeasurable business opportunities for Chinese companies seeking contracting in this country. The auto industry is also listed as a focus for Algerian plan of economic construction. At present, there are altogether 3.7 million auto vehicles all over the country, and the sale of automobiles will be increased by a 2% annually. It is estimated that the total demand for new automobiles will reach 150,000 sets per year in the future, showing a great potential of large auto market. Domestic auto works of Algeria can only produce trucks and buses, so all the cars and vans have to be imported. The domestic annual auto production in Algeria is 3,000 sets, while its overall demand on the market is calculated as 8,000 sets. In 2007, Algeria imported altogether 217,000 sets of automobiles, with a total import volume of 2.7 billion US dollars. Of its total auto import of auto in 2007, 10% were actually imported from China. The data provided by the Ministry of Industry and Investment Promotion of Algerian government shows that China takes a share of over 10% in its auto market. Chinese-produced auto vehicles are cheap,

but their qualities are not as good as those produced in Europe and U.S., which is worsened by inadequate after-sale service. Consequently, a great improvement must be made on the functions and qualities of Chinese-produced auto vehicles, which should be supplemented by conformity to local manufacture standards, especially safety and environmental compatibility standards. At the same time supportive facilities and staffs of after-sale service and training on local technical and managerial staff members should also be strengthened. In this way, Chinese auto manufacturers will find many profitable chances in Algeria.

FDI and trade are two major channels for a country to participate in international markets. Amid deepening of economic globalization, the connection between trade and investment is intensified, so investment becomes an important factor influencing trade growth of various countries. The theoretic basis of economics, which can be used to explain and guide China's FDI in Africa to some degree, has been constructed by some enlightening and convincing schools of thoughts, including the model of complete substitute of investment for trade invented by Mundell, the theory of "expansion of marginal industries" initiated by Kiyoshi Kojima, the theory of life cycle of product initiated by Vernon, and theory of small-scaled technologies invented by Wells. Of course, none of these theories can fully explain China's motive of FDI in Africa alone. It is believed that China's FDI into Arab countries of North Africa is stirred up and influenced by both China's domestic conditions and local circumstances of North Africa, which are closely correlated to each other. China's domestic conditions related to its FDI in Africa include: its domestic demand for transformation and upgrading of its industrial structure, an inevitable request for diversifying sources of China's procurement of energy and resources in its energy and resource strategy, and its spontaneous impulse to circumvent trade frictions and barriers. While at the same time, the advantages enjoyed by Arab countries of North Africa compared to other African countries, such as steady economic development,

relatively good business environment, and strong national competitiveness, are major causes absorbing China's FDI. In consideration of the present situation of China's FDI in this region, the author argues that China should regard three types of investment as the priority for its FDI in this region, namely, resource-oriented investment, export-oriented investment, and market-oriented investment. The author advises that China's FDI in this region should be focused on such industries as energy, agriculture, machinery, and telecommunication.

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