



Instituto para el Desarrollo Industrial
y el Crecimiento Económico A.C.

THE DEVELOPMENT OF A THIRD GENERATION INDUSTRIAL POLICY

WORKING VISITS TO
THE FEDERAL REPUBLIC OF GERMANY
AND THE REPUBLIC OF KOREA

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Executive Summary

The future of Mexico's economic development does not solely depend on the success of the recently approved structural reforms; it depends on their successful implementation. In order to increase the creation of wealth and to achieve an equal distribution of it, a transformation of the industrial, academic and public management system is required.

Therefore, the Institute for Industrial Development and Economic Growth (IDIC by its acronym in Spanish) considers appropriate to maintain the continuity of Mexico's transformation process through the "Enhancement of Sustainable Productivity Growth and National Economic Competitiveness Law Initiative". It represents a key step to recover an industrial promotion policy, which in other countries has been an essential factor to strengthen their domestic economy and international competitiveness.

It is also important to look for the "creation of a modern policy for economic development which considers that job creation, value creation and capital formation are done by the private sector. But better results can be achieved when the private sector works together with the public sector, particularly with the national government".

Being aware of this situation, IDIC -following its vision and mission, as well as its commitment with the Corporate Advisory Council for Economic Growth, which has been gathered by President Enrique Peña Nieto- planned work visits to the Federal Republic of Germany and the Republic of Korea. Both visits aimed to achieve a better understanding on the German and Korean experience on industrial development in order to adapt it to our local environment and create feasible proposals considering our country's reality.

Structural changes that are made by nations must solve the problems which hold back their productive activities performance. Hence, the industrial sector plays a strategic role in those transformations.

Industrialization fosters the creation of added value and strengthens national production. Thus, if companies remain selling imported products without adding some value to them or integrating them to their production cycle; their economic relations will be undermined. Midterm this practice will reduce the creation of well-paid jobs and productive investment.

The United Nations Industrial Development Organization (UNIDO) states that “...industrial development is a driving force for integrating new technologies to production processes and it is also the most important source and agent for technological innovation. It creates new skills and attitudes toward jobs, encourage institutional changes and create modern business skills”.

Industrial development also boosts welfare. The economic history of the world has proven that the most developed countries had implemented some major industrialization projects which have fostered their economic growth and social development.

- Through the visits to the Federal Republic of Germany and the Republic of Korea, the situation previously stated was confirmed. While satisfying their needs and considering their own capabilities, both countries see the industrial sector as one of the primary drivers for the economic and social development.¹

Even in time of crisis the positive relationship between their social welfare and the industrial sector is evident. Between 2008 and 2009, due to their national

¹ In both countries the industrial sector’s contribution to GDP is significant. In Germany it accounts for 29.1% and in Korea the industrial’s contribution is 31.1%. In order to achieve those rates, the active role of the national industry is required.

industries' dynamism, both economies managed to better overcome the situation than other countries.

- In Germany as well as in Korea, society knows that short-term and long-term economic growth and also job creation are based on trading goods and services which are locally made by national corporations.
- They are not interested in attracting foreign investment solely to assemble products. Instead, they have worked on strengthening their national companies by adopting economic development policies in the industrial sector.
- Their economic success is determined by the national private sector's boost and its positive relation with the public sector's economic policy strategy.
- Another tactic implemented by the German and Korean governments has been the reinforcement of their industrial capabilities and promotion of their internal markets.
- Both are open economies, but mainly export-oriented. In order to encourage exporting locally made goods, Germany and Korea have created their own brand names and companies.²
- Because of that, nowadays they are in a knowledge-based economic development phase; the so-called "locally created" phase.
- Innovation is required to move towards the knowledge economy. Whether creation equals to innovation or not is defined by the markets. In fact, markets state that if the product or process is able to achieve economic success, generate more opportunities for investment, jobs, growth and welfare, then it is an innovation. Otherwise, it is not.

² However, German and Korean industrial organizations differ. Germany has SMEs (small and medium-sized enterprises) and large companies, while South Korea is oriented to the large ones.

- At the beginning of their industrialization processes, there were fiscal and monetary policies that supported their industries. The support is still being held by the creation of complex incentives that contribute to their industrial companies' development.
 - Creation of economic development zones: in Korea these zones are being created, while in Germany they are already up and running.
 - Appropriate infrastructure programs aimed at supporting logistics and mobility.
 - Modern and efficient telecommunications systems.
 - Public and private financing systems.
 - Small and medium-sized high-tech business incubator systems.

Creating business incubators is a fundamental factor to be considered in an industrialization process, especially when resources are scarce.

- In order to be part of an incubator, a company needs to have a high added value productive profile. It means that it must be able to make innovative contributions to large companies or to the economy. In other words, the company should be able to become an element of the national or global value chains.

A systemized relationship between the public, private and academic sectors is critical for achieving industrial development.

- In Germany the dual education system allows employees and students to develop the required skills to effectively perform their job functions. Also there are different institutions, such as Acatech, Steinbeis University and Fraunhofer Institute, which ensure innovation is continuously being transferred into companies. There are more than 800 basic and practical

research-oriented institutions which contribute to the German industry's innovation and solutions.

- South Korea has a high quality university system. Companies, such as Samsung and LG, leverage on it to develop new products and processes by creating their own research centers. There are also modern universities, such as Hayang, which are created to foster the transfer of technology between the private and academic sector. The goal in Korea is to increase the number of high added value small and medium-sized companies. Therefore, the financing options and incentives are oriented to business people who create new technological products.

Even though there are differences that exist between the German and Korean model, there is a similarity.

- “The market makes decisions and Government supports them”. Although this rationale is more palpable in South Korea than in Germany, it also rules the German society.

Producing technological innovation is considered a fundamental factor by both governments. Therefore, making innovations is always supported by them. Nevertheless, there is an important requirement, innovation should be useful to industries.

Germany and South Korea also see think tanks as an essential factor for their growth. In Germany there are several universities, public organizations and private institutes that have developed a strong relationship with the German government. On the other hand, in Korea, there are advisory councils that were created to support the Prime Minister and all Korean government's ministries.

- The role of think tanks is to study their local economy and global trends. But they also do research about what other countries are doing,

especially those in which their government and companies are interested in.

The previously disclosed characteristics, which can be seen in both countries, explain the success of Germany and South Korea in enhancing their internal development and international economies.

Introduction

The future of Mexico's economic development does not solely depend on the success of the recently approved structural reforms; it depends on their successful implementation. In order to increase the creation of wealth and to achieve a more equal distribution of it, a transformation of the industrial, academic and public management structures are required.

Constitutional reforms have allowed Mexico to achieve major progress. In fact, those reforms changed the institutional context that had ruled the economic relationship between firms, households and government. Their goal is to overcome the slowly growing economy that has defined Mexico for the last three decades.

Therefore, IDIC considers appropriate to maintain the continuity of Mexico's transformation process through the "The Enhancement of Sustainable Productivity Growth and National Economic Competitiveness Law Initiative". It represents a key step to recover an industrial promotion policy, which in other countries has been an essential factor to strengthen their domestic economy and international competitiveness.

IDIC also acknowledges the Mexican authorities' resolution, which states that "nowadays, all nations -including those that have solid economies based on a market-system approach and the leading role of the private sector- have some active instruments of economic promotion policy."

It is also important to look for the “creation of a modern policy for economic development which considers that job creation, value creation and capital formation are done by the private sector. But better results can be achieved when the private sector works together with the public sector, particularly with the national government”.

Hence, promoting an active cooperation between the private, public and academic sectors is a great formula to increase welfare. In fact, the most successful developed countries and emerging economies have made use of this rationale to raise national welfare.

IDIC –following its vision and mission, as well as its commitment with the Corporate Advisory Council for Economic Growth, which has been gathered by President Enrique Peña Nieto– planned working visits to the Federal Republic of Germany and the Republic of Korea. Both visits aimed to achieve a better understanding about the German and Korean experience on industrial development in order to adapt it to our local environment and create feasible proposals considering our country’s reality.

This report provides a summary of the key findings as well as a general conclusion regarding the German and Korean situation and it also shows the activities performed during both visits.

I. Working visit to the Federal Republic of Germany

The German rationale of innovation

Germany’s current social and economic development would not be possible without its industrial strength. As a result of the strong relationship between the public and private sector, Germany has achieved a major technological progress and the creation of innovation-driven firms. In fact, German authorities have

promoted public policies that are related to the private sector's investment strategies.

The outcome of these historical transformations is a solid production chain within the German industrial sector. Due to the active role of the industrial sector, Germany has managed to better overcome the global economic slowdown. Actually, Germany emerged from the economic slowdown with lower unemployment and higher growth rates than other European countries.

- The German industrial development model has historical and economic basis that demonstrate the strong relationship between the public and the private sectors and the scientific and technological development facilities. All surrounded by a systematic and holistic approach.

A positive effect of this systematic interaction is that innovation is a fundamental part of the German productive and social structures, as well as in the public management activities. As a matter of fact, in Germany there are:

- More than 800 publicly-funded research institutes.
- 91 research groups and networks organized in innovation clusters. SMEs and large companies as well as research centers are grouped together to form a cluster.
- 567.000 research and development employees.
- Bilateral, European and multilateral cooperation with more than 40 countries.
- Research and development expenditures for 79.4 billion Euros in 2012.

The rationale behind that infrastructure is that innovation is essential in order to achieve higher levels of productivity, competitiveness and economic welfare.

- To accomplish those goals and get long-lasting results, Germans think of innovation as a market-oriented process aimed at increasing welfare. It

means that Germans not only seek scientific progress *per se*, but they work towards relating a major part of it to the industry and the high added value services' sector.

Structure of Germany's education and research systems

A network of research centers has been established in Germany in order to connect them and coordinate their efforts. The main participants are gathered around:

- Higher-education research institutes.
- Extra-university research institutes.
- Industrial research.

In Germany there are 427 higher-education institutions which jointly have 2.5 million students enrolled.

- 43.8 billion Euros -from public resources- were allocated to the higher education system in 2011.
- The Federal Government and Federal States of Germany (Lander) invested 4.6 billion Euros by 2006 and 2007 to promote high-level research, as part of their Excellence Initiative.
- The R&D gross national expenditures were of 79.4 billion Euros in 2012, it accounts for the 2.98 % of GDP.

The main extra-university research institutes are:

- **Max Planck Society:** there are 83 members among research centers and institutes, around 17,000 employees and 1.5 billion Euros as budgetary resources. Seventeen Max Panck Society' researchers have gotten a Nobel Prize.
- **Helmholtz Association of German Research Centers:** there are 18 research centers, around 36,000 employees and annual resources for 3.8 billion Euros.

- **Leibniz Association:** there are 89 members among research centers and institutes, 17,200 employees and annual resources for 1.5 billion Euros.
- **Fraunhofer Society:** there are 67 members among research centers and institutes, 23,000 employees and annual resources for 2 billion Euros.

The previously mentioned institutes are focused on basic and applied research. They cover a broad range of research areas. Most research is done due to legal agreements with any of the following sectors: industrial, service, or public. They also provide information, collaboration, consulting services, knowledge and technology transfer to the social, economic, politics and higher education systems.

- The above mentioned institutes jointly place the German economy at the forefront of the market-oriented innovation, which contributes to all local firms' development, despite the company's size.

Besides there are excellent extra-academic institutes pursuing innovation's development, such as:

- **Federal Research Institute:** there are 40 institutes financed by Federal Ministries with 21,300 employees.
- **Länder Research Institutes:** there are 130 research organizations and 6,300 employees.
- **Academies of Science:** the Union of the German Academies of Sciences and Humanities is comprised of eight academies. Particularly, Acatech is an academy of science and engineering which is focused on the development of an interdisciplinary dialogue between firms and research institutes. Its board includes scientists and ex business executives. Its goal is to assure that innovations and technology applications are functional for markets. It means those creations can solve a tangible problem of the German society and economy.

The relationship between the public and the private sectors

The innovation model previously described is a result of the well-aligned efforts of the private sector and the German government, at its federal and state level.

Such relationship is enhanced by the German business organization in which major employers share office space with others seeking to promote communication and interaction between them.

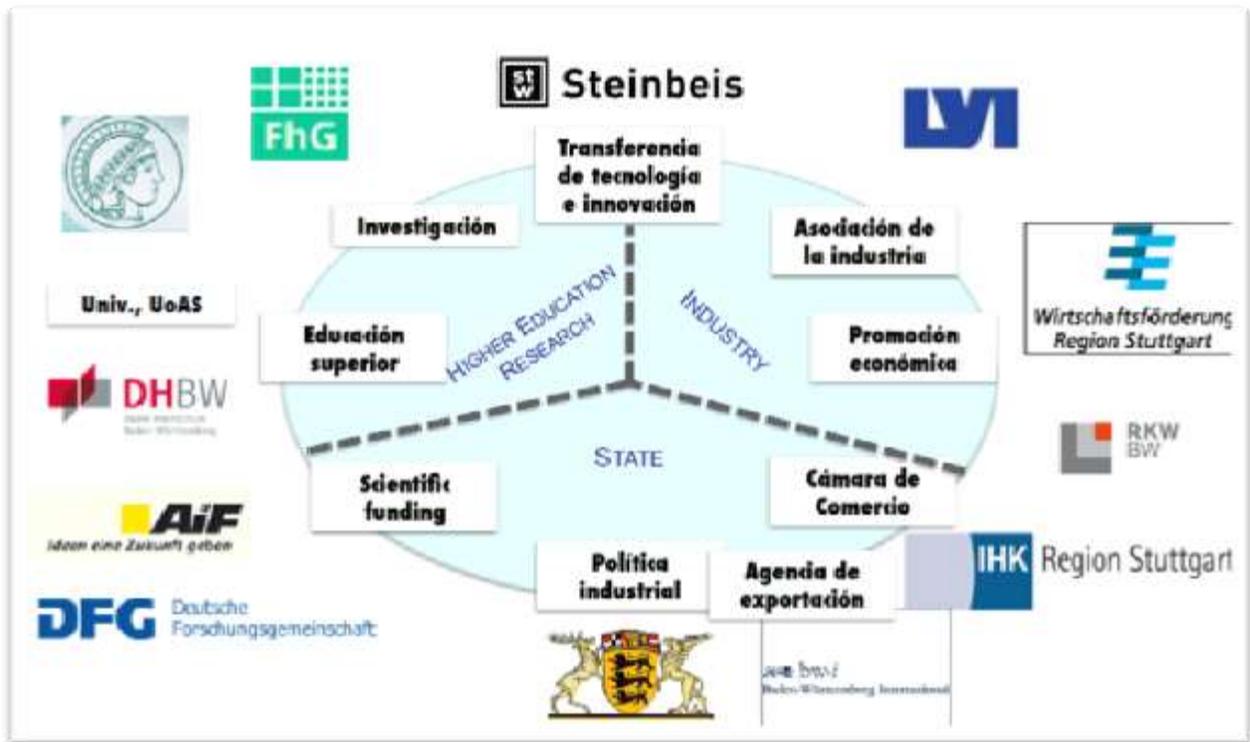
Also, the industrial and business associations support the exchange of technology and innovation between the industry and higher education system. In fact, some Baden-Württemberg's industrial associations have created universities specialized in technology and innovation transfer.

The best example of the previously mentioned fact can be the Steinbeis University and the LVI industrial association symbiosis. They work together with commerce chambers and research centers to ensure that industrial policies designed by the public sector effectively impact innovation and technological progress.

- The basis of such symbiosis is coherent: Germany acknowledges that innovation and education are the fundamental factors to cope with global competition, not low added value labor.
- Their dual education system is focused on developing highly skilled professionals and workers. At university and postgraduate levels, young people are prepared to understand, develop and apply innovation. Technicians and professionals are prepared to perceive and to use innovations; plus to perform an outstanding job.
- The private and public sectors know that low-skilled labor is not a long-lasting factor to face international competition, e.g. China's and Africa's competition.

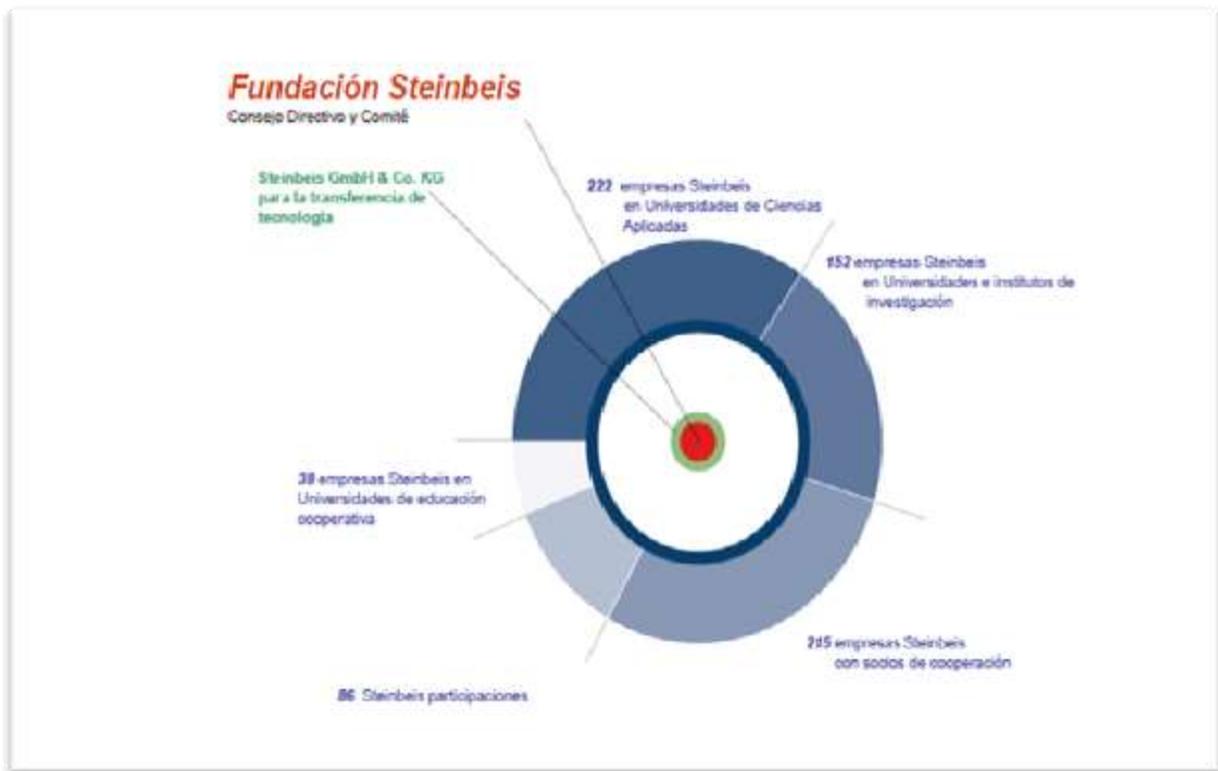
The mutual understanding among the private and the public sectors arises as a need of creating economic welfare through innovation and technological progress. Within this context, there is also an interaction between both sectors and think tanks. These institutes provide both sectors with information regarding global trends, current and future needs and institutional changes that must be made. The interaction between public and private sectors with organizations, such as Konrad-Adenauer and Friedrich Ebert foundations, is a great example of such multilateral relations.

Chart 1. Institutional interactions



Source: Steinbeis University

Chart 2. Steinbeis Foundation



Source: Steinbeis University

Those alliances are formed to serve the following objectives:

- Utilizing research outcomes.
- Making knowledge available.
- Providing holistic solutions.
- Expanding the transfer network.
- Providing commercial solutions for the public sector and small and medium-sized enterprises.

Conclusions of the working visit to Germany

In order to promote an industrial-based economic development in Mexico, a strong partnership between the public and all productive sectors and the education system is required. Using the international experience, such as Germany's, is a strategy that can be followed in order to create synergies and coordinate the efforts done by the society. A society that is committed to enhance its economic and social welfare.

Therefore, IDIC puts forward a summary list of the key findings about its visit to Germany, such as the importance of creating a new collaborative culture between the public and the private sectors.

Besides, it is indubitable that education must be improved at all levels just as it has to be related to industrial needs. Mexico needs such plan in order to achieve higher productivity and competitiveness' levels.

Unless Mexico stops focusing on creating low-added-value job, its persistent issues of poverty will not be solved.

For years to come business should be linked to academic research and technological progress. To build this new model, the government, the private sector and universities should work together. Otherwise, Mexico will not be able to

compete on a global basis, in which innovation will characterize successful countries.

II. Working visit to Republic of Korea

South Korea's economic development demonstrates how successful the positive synergy between the state's economic policy, the private business sector's strategy and the public and private education system is. Such relationship has been embraced for the last forty years.

The long-term vision conceived by the Korean government was truly reinforced by the business sector. Besides, each productive sector provides support to each other. In fact, the automotive sector's development is connected to the steel industry's strength, which also sustains the shipbuilding industry.

- Considering the following rationale, "The market makes decisions, Government supports them", the South Korean economy and society have experienced a radical transformation. A war-devastated country is nowadays an emerging nation that shows signs of a developed economy.

South Korea's chosen path to economic recovery has promoted the "Made in Korea" rationale for the last years and nowadays it is focused on enhancing the "Created in Korea" basis by providing interesting incentives to its companies. This was achieved by promoting the idea of public economic policy designed in accordance with the business sector's needs.

Besides, the South Korean government encouraged industry-oriented applied technological innovation. As a matter of fact, they were not interested in undertaking merely scientific research, but in solving the lagging-economy issues and social problems they had.

South Korea created its own industry's organization model, although the international institutions had been promoting another one. Their goal was to develop stable Korean firms that were able to compete globally. In order to accomplish it, big companies should have been committed to: increase wealth creation, achieve a more equal distribution and place South Korea in an international position. Such conditions were followed.

South Korea's economic and social progress: the outcome of leadership and collaboration.

Due to the previously mentioned new model, Korea is not the poorest country in the world anymore. The famine and scarcity that most Koreans experienced in the early 60s already belongs to history.³

When 80% of South Korea's territory was battered by war, the country -led by President Park Geun-hye- started an economic revival process which was based on its own ambitious industrial development plan.

- At that moment international organizations, such as the World Bank⁴, were wondering if Korea's industrialization plan was appropriate. But the Korean government accurately disregarded their input.

Korea went against the perception of comparative advantage. It neither allocated its financial resources nor devoted its efforts to the primary sector of economy. Instead, it concentrated its efforts on promoting its chemical and heavy industries.

That strategy allowed Korea to create an appropriate atmosphere for building up three key sectors: steel, automotive and shipbuilding. Nowadays, Korea is the world leader in those three sectors.

At the beginning three criteria guided the development of the industrial sectors:

- National defense: machinery and nonferrous metals.

³ Income per capita was 82 dollars in 1961, almost the same of Ghana's and Sudan's. It rose to 26,204 dollars in 2013. (Tae-shin Kwon, President and CEO of Korea Economic Research Institute).

⁴ DoHoon KIM, President of Korea Institute for Industrial Economics and Trade.

- Economic: steel and petrochemical.
- New industries incubator: shipbuilding, electrical machinery and automotive.

Current rates demonstrate that the previously mentioned measures were effectively implemented:

- A factory of Posco, a steel company, produces as much as all the steel produced in Mexico.
- Hyundai is capable of producing 1 car every 10 seconds in just one of its factories.
- Between 60 and 80 vessels are built each year at Korean shipyards. One of them has enough capacity to store more than 80% of Mexico's daily oil production.

Those facts not only illustrate how accurate the decision -made by the Korean government nearly half a century ago- was, but they also imply that Korea achieved their goal of reducing its dependence on international support and imports.

- In the 60's the imports from the United States accounted for 50% of the Korean budget. Thus, its budgetary resources allocation was limited. Nevertheless, in terms of economic policy and international trade South Korea is not a follower anymore; nowadays this nation is a leader which set the rules.
- The South Korean transition to a Knowledge Economy was due to the industrialization process this Asian country implemented several years ago. Consequently, this change fosters South Korea's productive growth and new business creation.⁵

⁵ Korea as a Knowledge Economy. Evolutionary Process and Lessons Learned. World Bank Institute and Korea Development Institute.

Afterward the heavy industries development's goal was achieved; South Korea pursued to build higher technological capabilities. Despite the international organizations and experts' suggestions, South Korea was committed to develop its electronics and telecommunications industries. Korean companies, such as Samsung and LG, today are able to compete on a global basis and successfully overcome the competition from its European, Japanese and North American counterparts.

Because of those development strategies, Korean society enjoys a higher level of economic and social development supported on business and work ethics. In fact, Korea has emerged as one of the largest economy in the world.

Key factors to be considered in Mexico

Without a long-term vision such as Korea's, it would be really difficult for other countries to adopt a model of economic development like the one this Asian country implemented.

Even though the Korean model has some specific characteristics that make it hard to be used in nations with no long-term vision, there are some factors that should be considered by economic and social policy makers who want to promote economic and social development in countries, such as Mexico, that have the potential to achieve a high economic growth through strengthening its industrial sector.

- The first lesson offered by South Korea is the adoption of a nationalist economic plan. Its main objective was to create the right environment for its companies so that they can face competition and become globally competitive. However, Korea never gave up on international trade and cooperation.
- The second factor that should be considered is that Korean companies were committed to compete internationally, achieve higher productivity

and competitiveness. They were driven towards a continuous improvement process in order to remain globally competitive.

- The third lesson is the public sector leadership and role in this development process. The President of the Federal Republic of Korea directly supervised the plan for increasing exports. Monthly meetings were held to control the international trade structure, supervise the industrial needs and analyze the effectiveness of the official measures for exports promotion. Due to his leadership, Korea's President only missed 5 meetings in an 18-year period in order to ensure all his government officials have an active role in such development process.
- The outcome is indubitable: exports, as a percentage of the GDP, rose from 3% in 1960 to 56% in 2012.
- Korea's current-account deficit was eliminated due to its high added value economy. The Korean economy has been running trade surplus since 1998. It means its goods and services exports exceed its imports.
- At the beginning of the development process, the foreign direct investment (FDI) played a minor role. Actually, Korea's plan was not to be dependent on foreign savings because such economy's dependence would limit the national strategy implemented by the government.
- Corruption and misuse of public resources by the private sector were punished by imprisonment. The Korean economic revival process was rigorous. In fact, Korean firms were conditionally allowed to import raw materials and capital goods. The main restriction was that they had to transform some of those goods into high added value exports and compete on a global basis.

- Thus, Korea kept their companies from being simple and everlasting assembly plants. Korea's goal was to go further and create its "own brand names" instead of solely attracting foreign firms and investments.⁶
- South Korea's government acknowledged that its future growth depended on the "Made in Korea" by Korean firms' rationale. The government also knew such rationale was important to further promote the "Created in Korea" by Koreans firms' basis.
- Another element that should be mentioned is that in order to achieve the previously mentioned objectives and to foster the Korean firms' development, the South Korean government adopted an economic and fiscal plan. Through this plan, companies that were able to compete in the international market could:⁷
 - Obtain funds at preferential rates.
 - Keep earnings from exchange rate.
 - Aim for a depreciated exchange rate which benefits them on the international markets.

The government implemented such measures because it knew that Korean firms were about to face tough competition from large multinational companies. Most multinational firms had monopoly-like characteristics or features of oligopoly. Therefore, unless such development process was adopted, Korean firms could not be successful on an international basis.

The chosen path to economic recovery was, by that time, unorthodox for the economic thinking. Actually, it remains unorthodox even today. Korean firms were asked to compete in the international market in order to increase their productivity and competitiveness while they were allowed to exercise economic dominance in the domestic market.

⁶ Actually at the beginning of South Korea's industrialization process, foreign investment played a minor role as a source of financial capital for its productive activities. (Tae-shin Kwon, President and CEO of Korea Economic Research Institute).

⁷ DoHoon KIM, President of Korea Institute for Industrial Economics and Trade.

The unorthodox economic recovery process explains Korea's current situation. Samsung accounts for more than 20% of Korea's GDP. Hyundai and its affiliate KIA control 70% of the auto market in Korea. Even Korea's informal economy is mainly based on "Made in Korea" goods.

Such situation attest the relevance of Rodrick's argument: Each country must follow policies that are tailored to its local economic needs and realities. There is no unique and universal model.⁸

- Due to Korea's success in implementing its strategy, most domestic earnings are used to create more opportunities for investment, jobs and innovation.

Besides, it is important to note that the economic recovery process was based on the manufacturing industry.

- Such industry accounted for 14.4% of the GDP in 1962. Fifty years later its contribution increased to 31.1%.⁹
- The industrial structure also changed. Before launching the development process, South Korea's economy was mainly based on its agriculture and low added value textiles industries. But today its leading industries are the telecommunications, shipbuilding, steel, semiconductors and automotive.
- Korean companies are the world leaders in the following industries: mobile telephony, digital TVs and displays. Also, Korea is the second-largest shipbuilding nation in the world and it is also a major player among the world's top 10 automobile, machinery, steel, petrochemicals, textiles and electronics producers.

Most of those achievements have been possible because of the globally-competitive Korean firms.

The last factor obviously differs from the dynamism of Mexico's economy. Although both countries are export-oriented, Korea has managed to create its own

⁸ Dani Rodrick, *One Economics, Many Recipes*. Princeton University Press.

⁹ DoHoon KIM, President of Korea Institute for Industrial Economics and Trade.

large companies which nowadays are world tech leaders that reinvest in Korea as well as they generate new value chains. On the other hand, in Mexico, most manufacturing exports are done by foreign multinational companies. Therefore, it neither increases reinvestment in Mexican firms nor does it contribute in a productive manner to Mexican companies' value chains.

All those factors made Korea's current-account surplus possible since 1998.¹⁰ Furthermore, Korea is able to invest in the local and international market.

The role of think tanks and education

South Korea's economic development is backed by think tanks which are focused on providing support to the Prime Minister and to all Korean government's ministries. Nearly 50 think tanks and public institutes do research on a broad range of areas such as: economic, industrial, social, scientific, technological, ecological, pharmaceuticals, global issues, national security strategy, health and nutrition. Some of the most important economy-related think tanks are:

- **Korea Development Institute**
- Korea Education Development Institute
- Korea Energy Economics Institute
- Korea Environment Institute
- Korea Information Society Development Institute
- Korea Institute for Health and Social Affairs
- **Korea Institute for Industrial Economics & Trade**
- **Korea Institute for International Economic Policy**
- Korea Institute for National Unification
- National Youth Policy Institute
- Korean Women's Development Institute
- Korean Institute of Criminology
- Korea Institute of Curriculum & Evaluation
- Korea Institute of Public Administration
- Korea Institute of Public Finance
- Korea Labor Institute

¹⁰ Korea ran a 79 billion dollars trade surplus last 2013. For that reason, the Korean central bank had the world's seventh-biggest reserves holding more than 347 billion dollars. (Tae-shin Kwon, President and CEO of Korea Economic Research Institute).

- Korea Legislation Research Institute
- Korea Maritime Institute
- Korea Research Institute for Human Settlements
- Korea Research Institute for Vocational Education & Training
- Korea Rural Economic Institute
- Science and Technology Policy Institute
- The Korea Transport Institute

Those institutes, as a group, contribute to Korea's economic and public policy making.

- Such think tanks not only analyze Korea's economy, but they conduct global and other countries' analysis. Particularly those in which the Korean government and companies are interested in. Therefore, Korean firms always have the latest information about the markets where they are likely to invest.

Also, there is a high-quality education system in which students really compete for spots at top South Korean universities. Most of them are private universities and some of them are related to the largest South Korean private firms.

Because some companies, such as LG and Samsung, have their own research institutes at South Korean universities, the technology and innovation transfer is highly feasible.

The federal government has focused on improving the primary and secondary education to ensure that tertiary education has highly-skilled students.

Trends and challenges

Despite South Korea's great achievement, for the past 40 years South Korea's economy has been facing a decrease in its potential productive capacity. Currently, its potential GDP is 3%, but due to its downward trend, it would be 1.5% by 2050.¹¹

¹¹ Tae-shin Kwon, President and CEO of Korea Economic Research Institute.

Nowadays, a less dynamism of the Korean economy means a higher unemployment rate for graduates. As a matter of fact, it is expected that the rate of graduate unemployment would be one the highest among countries that have a similar or greater GDP.

In order to face such situation, South Korea has implemented a set of measures which are consistent to those adopted in the last decades:

- Promoting growth based on the knowledge economy. It means to adopt a high-added-value industrial development.
- Creating technology-oriented small and medium-size firm incubation centers. As a result of this strategy, graduates are able to work on innovation areas. Furthermore, the potential GDP would increase.
- Establishing “incentives schemes”. Due to Korea's participation in the World Trade Organization (WTO), the possibility of providing direct fiscal stimulus decreases. Hence, the Korean government promotes the creation of a “friendly environment” for business incubation by establishing “incentives schemes”. Indirect financing and incubation strategies were planned for universities and institutions that had been specifically created for those purposes.
- Enhancing the service industries’ sector. By this measure, the Korean society can take advantage of the already developed economic structure that can be improved by the development of better productive processes.
- Building new cities and economic development zones. The Korean government plans to gather companies that have similar capabilities in a same area so that those firms can create a positive synergy among them. In fact, the Korean think tanks consider that manufacturing industries and technological innovation can be the source of a new period of rapid economic growth. Particularly, the contribution of the following Korean

promising sectors: biomedical, green industries, eco-friendly smart cities and services industries.¹²

- Keeping pace of the infrastructure construction for roads, air, ocean, and rail transportation. In addition, South Korea is investing in information technology and telecommunication systems. As a result, its society and companies can enjoy efficient and reliable communication services, such as high-speed internet.
- Decentralizing federal agencies' functions by gradually redistributing some government's tasks.

Conclusions of the working visit to South Korea

South Korea proved that success can be achieved by the adoption of a tailored-made industrial policy that perceives local business promotion as a fundamental factor. Considering South Korea's participation in the international trade and its "Market makes decision and Government supports them" rationale, this Asian country's economy and society has radically been transformed. Nowadays, several countries from all continents get technological products and investments from South Korean firms which compete with European, North American and Japanese multinational companies.

A war-devastated country is, nowadays, an emerging nation that shows signs of a developed economy.

The Korean model was ad hoc -for a country that is looking to strengthen its companies-. Under a long-term vision, Korea focused on reinforcing its industrial capabilities. Its goal was to promote both "Made in Korea" and "Created in Korea" rationales.

Therefore, Korea developed a strategy that allowed general agreements between public and private sectors and academics institutions. The positive relationship

¹² Bank of Korea.

between them allowed Korea to achieve economies of scale and scope that nowadays enhance the country's productive capacity.

Despite the new challenges that the Korean economy faces, its model remains valid. The Korean government is still promoting the economic development based on the advanced manufacturing industry and the knowledge economy. Korea takes advantage of the already developed productive capabilities and the new infrastructure construction.

Overall, the Korean strategy keeps creating general agreements between the business and academic elites. Without such outcome, the technological development and innovation process will not contribute to sustaining the economic and social development that Korea has had for the last four decades.

III. General conclusions

In order to achieve economic and social development, Mexico should consider the experiences of other nations, such as Germany and South Korea, which have successfully achieved higher level of growth and economic development.

Both countries' experiences prove that the business sector, the education system and the government play a major role in the industrial development process. They should collaborate and be co-responsible for it. The relationship between the public and private sector is fundamental to achieve higher economic growth and furthermore, social welfare. Such relationship provides a great opportunity to leverage synergies between the business sector's expertise and the public sector's resources and strategic decisions. Thus, better results can be achieved.

Because education is a fundamental source for innovation and strategic sectors' development, and consequently in increasing a nation's productivity and competitiveness, it is also important that the education system is related to the country's productive needs, requirements and goals. The low added value that

nowadays infests Mexico's economy is one of the reasons that keep most firms unproductive and with poor jobs. In addition, there is a vicious circle of poverty, informality and labor-related precarity. Therefore, a new stage of industrialization is required. Such industrialization process should be based on education and high-added-value knowledge. Additionally, it ought to be related to technological and the research frontier in order to create productive innovation.

There is another lesson offered by the historic development of Germany and Korea that should be considered. It is the relevance of adopting a national cultural vision that has the development of local businesses, goods and services as a priority. Such vision will allow international trade to become a complement of the domestic market as well as a strategy to emerge as a participant in international markets based on the creation of its own value chains. In order to be competitive on an international basis, a country's society should positively appraise the locally-made or locally-created products first. Then, those goods and services could be valued by other countries. All those factors are required for achieving the goal of promoting of social welfare.

A long-term vision is also required. That vision should foster the increase of local firms' potential by using and developing its productive capabilities. At the same time, more job opportunities are created and local human capital is developed.

In order to achieve those outcomes, a social consensus is required. Such general agreement should include both public and private sectors. The government should actively lead the promotion of the country's development, while the business sector should cooperate in a purposeful manner by being accountable and co-responsible for it.

Appendix

I. Mexican delegation's itinerary in Germany

Visitors' Program -- Industry Association of Baden-Württemberg (LVI) in cooperation with the German Federation of Industries (BDI)

Project: Innovation Partnership Mexico

Delegation from Mexico, headed by Raúl Gutiérrez, Member of the Economic Advisory Council of the Mexican President Peña Nieto

Mexican Participants:

1. Ing. Raúl Gutiérrez

Member of the Economic Advisory Council of Mexican President, Lic. Peña Nieto

CEO of Mexican Steel Company DEACERO

President of Economic Research Institute IDIC

2. Prof. Jose Luis de la Cruz

Director of the Economic Research Institute IDIC in Mexico City

3. Lic. Eusebio Hidalgo Flores

Ministry of Economy of Mexico

Coordinator of the Advisory Council of the Ministry

4. Lic. Juan Antonio Reboulen Bernal

Corporate Affairs and International Relations Director of DEACERO Group

President of the PR-Commission of Mexican Chamber of Steel and Iron Industry (CANACERO) and member of policy advisory council of CCE

Participants from Germany:

5. Joachim Elsässer (LVI)

TOPICS:

- Cooperation between the Mexican and German economy

- Knowledge Partnership regarding industrial policy instruments, research and education cooperation
- Set-up of a private sector based bilateral network of applied research and education services based on partnerships between Mexican and German institutions
- Industry-University-Cooperation (Acatech, Steinbeis, Fraunhofer) and the German System of Dual Education
- Follow-up to the Partnership Agreement between the German Federation of Industries (BDI) with COPARMEX and Mexican Business Institutions

Sunday, 14th September

Welcoming and Dinner with Joachim Elsässer, LVI

Monday, 15th September

09:30 - 11:15

Bundesverband der Deutschen Industrie (BDI)

Federation of German Industries

Sigrid Zirbel

Director of the Department North and Latin America, Security and Defense, Global Governance

Thomas Huene

Department of Economic and Industrial Policy

11:30 - 13:00

Lateinamerikainitiative der Deutschen Wirtschaft (LAI)

Latin America Initiative of the German Economy

Deutscher Industrie- und Handelskammertag (DIHK)

Association of German Chambers of Commerce and Industry

Mark Heinzl

Director General of the LAI

Dr. Volker Treier

CEO of the Association of German Chambers of Commerce and Industry (DIHK)

15:00 – 15:30

Deutsche Bank

Bilateral German-Mexican Parliamentary Group

Chairman Michael Leutert, MoP

NN German Ministry of Foreign Affairs (AA)

Tuesday, 16th September

08:30 – 10:00

ACATECH - German National Academy of Science and Engineering

(National knowledge platform for cooperation between industry and academia)

Prof. Dr. Dr. h.c. Reinhard F. Hüttl

President of ACATECH

Wissenschaftlicher Vorstand und Vorstandsvorsitzender

Helmholtz-Zentrum Potsdam

Deutsches GeoForschungsZentrum GFZ

11:30 – 13:10

Lunch Meeting at Potsdamer Platz with experts for Knowledge Cooperation and Policy Dialog with Mexico

13:30 – 15:15

Friedrich Ebert Stiftung (FES)/ Friedrich-Ebert- Foundation

(Think tank linked to the German Social Democratic Party)

Dr. Andrä Gärber

Head of Dept. Economic and Social Policy (13:30 -14:15)

Katja Meyer

Country Desk Officer for Mexico (14:15 -15:15)

15:40 – 17:15

ACATECH - German National Academy of Science and Engineering

(National knowledge platform for cooperation between industry and academia)

Prof. Dr. Ekkehard Schulz

Member of the Board of ACATECH - former CEO of Thyssen-Krupp

Wednesday, 17th September

08:00 - 10:00

Stiftung Wissenschaft und Politik (SWP)

German Institute for International and Security Affairs

(Think tank financed by the German Government)

Prof Dr. Hanns Günther Hilpert

11:00 - 12:30

SE Patricia Espinosa,

Mexican Ambassador in Germany

Botschaft der Vereinigten Mexikanischen Staaten

17:00

Lateinamerikaverein (LAV) / Business Association for Latin America

(Association of German Entrepreneurs and Companies for the promotion of business partnerships and economic policy dialog with Latin America)

17:30 - 19:00

Guided Harbour Tour together with

Manuel Neumann

Regional Manager for Mexico of LAV

Dinner Meeting with

Christoph Schmitt,

General Manager of LAV

Manuel Neumann

Regional Manager for Mexico of LAV

GIGA German Institute of Global and Area Studies

Prof. Dr. Detlef Nolte

President

Further members of LAV (entrepreneurs with business relations with Mexico)

Thursday, 18th September

8:43

Train from Hamburg to Kiel (arrival 10:02)

10:30 – 15:00

Institut für Weltwirtschaft Kiel (IFW) / Institute for World Economy at University Kiel (one of the most prestigious German Economic Policy Research Institutes)

Prof. Snower

President

Dr. Peterson

Head of Economic Research

15:21

Train back from Kiel to Hamburg (arrival in Hamburg 16:51)

20:50

Flight from Hamburg to Stuttgart,

Friday, 19th September

10:00 – 13:00

Steinbeis Stiftung (STW) / Steinbeis Foundation

(Leading institution of knowledge- and technology transfer to medium sized industrial companies)

Steinbeis Hochschule Berlin (SHB) Steinbeis University Berlin

(Largest private university of Germany)

Prof. Werner G. Faix

Managing Director of the Steinbeis-University/School for International Business and Entrepreneurship (SHB/SIBE)

Jan Bandera

Director of the Steinbeis Institute for Economic Policy Dialog (STZ ETPD)

13:00 – 14:30

Lunch Meeting, in Restaurant Bistro Haus der Wirtschaft

Wolfgang Wolf

CEO and Executive Board Member of the Federation of Industry of Baden-Württemberg (LVI)

Jan Bandera

Director of the Steinbeis Institute for Economic Policy Dialog

Constanze Wolf

Abstractor for SME, Foreign Trade and Law of the Federation of Industry of Baden-Württemberg (LVI)

14:30- 15:15

Transport by car from Stuttgart to FESTO in Esslingen/ Berkheim

15:15 - 16:30

Visit to Company **FESTO – Didactic**

Dr. Theodor Niehaus

CEO

Dr. Theodor Ktistakis

Director Business Cooperation Latin America

Festo Didactic & GmbH & Co. KG

16:45 – 17:00

Visit to Company

FESTO AG

17:00 - 18:00

Meeting with

Dr. Eberhard Veit

CEO of FESTO

18:30 - 21:00

Dinner Meeting

Prof. Werner G. Faix

Rector of the Steinbeis-University / School for International Business and
Entrepreneurship

Dr. Theodor Ktistakis

Director Business Cooperation Latin America

Saturday, 20th September

Morning: Departure to Mexico

II. Mexican delegation's itinerary in South Korea

MISSION TO KOREA

PUBLIC POLICY AND INDUSTRIAL POLICY: THE KEYS OF KOREA'S ECONOMIC SUCCESS

OCTOBER, 12th to 22nd, 2014

Mexican Delegation

1. Lic. Beatriz Cecilia Tellez Lara

Head Adviser to the Minister, Ministry of Economy, Mexico.

2. Dr. Daniel Gonzalez Sesmas

Executive Economic Policy Senior Official, Department for Competitiveness
and Regulations, Ministry of Economy, Mexico.

3. Prof. Clyde Prestowitz

Founder and President of ESI (Economic Strategy Institute), Washington,
D.C.

4. Mr. Juan Antonio Reboulen

International Relations and International Commerce Director, DeAcero, Mexico.

5. Dr. Jose Luis de la Cruz

General Director, IDIC (Institute for Industrial Development and Economic Growth), Mexico

6. Dr. Renato Balderrama

Director, Center for Asian Studies, UANL, Mexico.

Advisors and backing in Korea:

- Dr. Kim Wonho (HUFS)
- Ms. Shinhye Hwang (International Meeting Partners-IMP)
- Embassy, Republic of Mexico in Seoul
- Trade Commission of Mexico (Pro Mexico) in Seoul

Advisors and backing in United States:

- Dr. Clyde Prestowitz (ESI)
- Dr. John Duncan (UCLA)

Advisors and backing in Mexico:

- Dr. Juan Felipe López Aymes (UANL)
- Embassy, Republic of Korea in Mexico

October Sunday 12th

Arrival to South Korea

Monday 13th, Seoul

02:00 to 04:00 pm

Visit to *Korean Institute for Industrial Economics and Trade (KIET)*

Meeting with officials and experts.

Dinner Meeting with Yonsei Researchers

06:30 to 08:00 pm

Meeting with Dr. Moon Chung-in and other 4 experts

Tuesday 14th

Meeting with Dr. Ki-hwan Kim, Chairman Seoul Financial Forum:

11:00 am to 13:00 pm

Seminar on the subject of Asia (Korea) - Mexico Economic Cooperation in KIEP

02:00 to 04:00 pm

Meeting with officials and experts.

Wednesday 15th

Visit to Federation of Korean Industries (FKI)

10:00 am to 12:00 pm

Meeting with Tae-Shin Kwon, President of KERI (Korea Economic Research Institute)

Visit to Hanyang University

03:00 to 05:00 pm

Meeting with President and experts.

Thursday 16th

Visit to Institute for Global Economics (IGS)

10:30 am to 12:00 pm

Meeting with Dr. Il Sakong, President (at his office in Chongang Daily)
Seoul Venture Incubator (SVI), belongs to *Small and Medium Business Administration (SMBA)*.

02:00 to 04:00 pm

Meeting with officials and experts.

Friday 17th

Seoul -Sejong -Daejeon

Visit to *Daedeok Innopolis* [Daejeon City]

- 09:30 - 10:30 **Innopolis Foundation**

- 10:30 - 12:00 **KIER or ETRI**

- 12:00 - 13:15 *lunch*

- 13:15 - 14:30 **KIER or ETRI**

* **KIER:** Korean Institute for Energy Research

* **ETRI:** Electronics and Telecommunications Research Institute

Visit to *Korea Development Institute (KDI) and Knowledge Sharing Program (KSP)* [Sejong City].

- 03:00 pm to 05:00 pm

- Meeting with officials and experts from KDI and KSP.

Going back to Seoul

Monday 20th Ulsan

Visit to:

- **Hyundai Heavy Industries in Ulsan** (Morning)

- **Hyundai Motor Company in Ulsan** (Afternoon)

Tuesday 21st

Ulsan - Pohang -Gyeongju

Visit to:

- **POSCO** (Morning)



Instituto para el Desarrollo Industrial y el Crecimiento Económico A.C.

<http://www.idic.mx/>

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President

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