

Can Turkey Escape from the Middle-Income Trap? What Has Been Done? What Can Be Done? Lessons from South Korea

Mustafa Malkoç YAŞAR

Turkey has been a middle-income country for nearly half a century. Unlike Turkey, South Korea has managed to rapidly grow and become a high-income country. The success of South Korea may be an inspiration for many developing countries that cannot move from the middle-income trap, such as Turkey. This qualitative study focuses on the dynamics of development in both countries. Population, education, foreign trade, and R&D policies since 1953 are examined. Lessons from South Korea show that upgrading exports from low and middle tech to high tech is crucial for economic development.

Keywords: Middle-Income trap, Turkey, Korea, Economic planning

JEL Classification: O10, O21, O52, O53

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I. Introduction

Middle-income trap (MIT) is a relatively new phenomenon in the literature of economics. MIT was first defined by Gill and Kharas (2007). The concept of MIT refers to an economy that is stuck between poor and rich economies (Bozkurt *et al.* 2014). In 1960, 101 middle-income countries were reported, among which only 13 became high-income countries in 2008 (World Bank 2013, p 12). Turkey is one of the 88 countries that failed to climb from middle income to high income. By contrast, South Korea is one of the 13 countries that managed to jump from middle income to high income.

The year 1953 is a critical period for both countries. In July 27, 1953, a ceasefire agreement was signed in the Korean Peninsula and officially ended the Korean War. In 1953, Turkey turned into a middle-income country for the first time in its history (Keskingöz and Dilek 2016, p 660). In same year, the GDPs per capita of Turkey and South Korea were 247 and 66 USD, respectively. Nearly half a century later in 2015, the GDPs per capita of Turkey and South Korea reached 9,257 and 27,097 USD, respectively. The numbers indicate a large growth difference between the two countries. This study focuses on the social and economic development processes of both countries to present their differences. Therefore, this study has two main research questions:

- a) How did South Korea manage to rapidly grow?
- b) Why did Turkey fail and fall behind?

To answer the above-mentioned questions, different determinants of economic growth are analyzed. The paper is organized into seven sections. Following the introduction part in Section I, the literature of MIT is presented in Section II. An overview of two economies is given in Section III. Population and economic planning process are described in Section IV. Education policy of the two countries is discussed in Section V. Foreign trade and R&D are presented in Section VI. The conclusions are elaborated in Section VII.

II. Literature of MIT

Since the first introduction of MIT in literature, several studies have been conducted. Kharas and Kohli (2011) expanded the definition

of MIT. Kanchoochar (2014), Gill and Kharas (2015), and Glawe and Wagner (2016) then conducted various surveys of MIT literature.

The definition of MIT has been argued in literature. Gill and Kharas (2007) made a theoretical definition of MIT. Ohno (2009) also made a theoretical definition by including economic adjustments in the development process. Kharas and Kohli (2011) defined economies in the MIT that cannot compete with low-wage and highly skilled economies. Quantitative definitions of MIT are also available in literature. Eichengreen *et al.* (2012) defined the MIT as growth slowdown by using average growth rate. Countries are considered to be in the MIT when their growth rate of per capita income in 7 years average is at least 3.5% with a minimum of 2% decline. They also reach growth slowdowns within two different levels of per capita income of 10,000 and 15,000 USD. Bulman *et al.* (2014) defined the MIT as the fact of staying between 10% and 50% of US per capita income for 49 years. Similarly, the World Bank (2013) defined the MIT as the situation of staying between 5% and 45% of US per capita income for about 50 years. Many other country-based studies have been conducted in the last decade. The current study focuses on works in literature that are related to Turkish and South Korean economies.

Yeldan *et al.* (2012, 2013) comprehensively analyzed the Turkish economy and underlined that regional development is a key factor to overcome the MIT for Turkey. They suggested that, instead of making decisions from the central government only, local administrations of regions must be involved in the decision-making process in Turkey. Bozkurt *et al.* (2014) empirically explored the Turkish economy by using data from 1971 to 2012 with the ARDL method. The results showed that the per capita income of Turkey is affected by high education enrollment and domestic savings.

Koçak and Bulut (2014) investigated whether the Turkish economy is in the MIT by using data from 1950 to 2010. They found that the Turkish economy is not in the MIT. Similarly, Keskingöz and Dilek (2016) used the same approach with data from 1960 to 2014. They also claimed that Turkey is not in the MIT and has three more years to avoid the MIT.

Yılmaz (2014) argued that Turkey is in the MIT and suggested the upgrade of the Turkish education system to create skilled and highly capable human capital. Tuncel (2014) similarly claimed that Turkey is in the MIT and encouraged the public research organizations to take a

TABLE 1
CLASSIFICATION OF COUNTRIES BY INCOME ACCORDING TO THE WORLD BANK

ECONOMY CLASSIFICATION	GNI PER CAPITA
Low-Income Economies	995 USD or less
Lower Middle-Income Economies	996–3,895 USD
Upper Middle-Income Economies	3,896–12,055 USD
High-Income Economies	12,056 USD or more

Source: World Bank (2018a), <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups>

large role in Turkey to overcome the MIT.

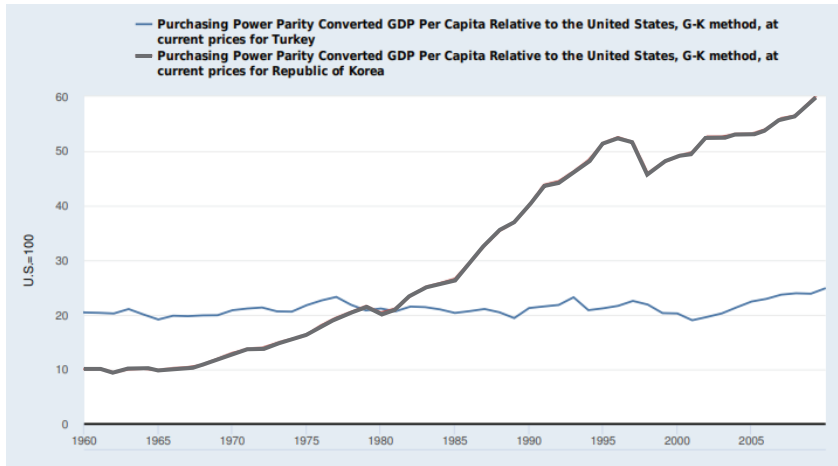
Lee (2013, 2016) comprehensively analyzed the Korean economy at country, sector, and firm levels. He compared Korea with other countries to show how Korea converged and escaped the MIT. He emphasized that knowledge is a key factor for economic catch-up. Sung (2010) argued the phenomenon called “Korean Miracle” and demonstrated that the devotion of Koreans may be a key factor for the rapid growth of Korea. Kasenda (2014) researched the MIT in Asian countries by comparing them with Korea and noticed that education and R&D are crucial for overcoming the MIT. Kim (2010a, 2010b) explained the importance of development plans and the role of the government in the economic development of Korea. Chu (2010) emphasized that education and human capital formation are key elements of the economic development of Korea.

III. Overview of Turkish and South Korean Economies

Prior to comparing Turkish and South Korean economies, whether the Turkish economy is in the MIT must be determined first. Using the World Bank’s country classification in terms of income will lead first comparison.

The World Bank categorizes countries with per capita income between 996 and 12,055 USD as middle income economies. The per capita level of Turkey in 2017 was 10,540 USD (World Bank 2018b). Turkey is currently a middle-income economy. On the contrary, South Korea with the per capita income of 29,742 USD is classified as a high-income economy.

Following the MIT definitions by Bulman *et al.* (2014) and the World



Source: Penn World Table 7.1, retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/>

FIGURE 1
RELATIVE PER CAPITA INCOME OF TURKEY AND SOUTH KOREA (%)

Bank (2013), Turkish and South Korean relative per capita income can be compared easily.

As shown in Figure 1, the GDP per capita of Turkish economy is only over the 20% level of the US, whereas the GDP per capita of Korean economy nearly reaches the 60% level of the US. The graph shows that Turkey was in better situation than Korea until the late 1970s. However, Korea managed to be equalled to Turkey in the early 1980s. Thereafter, the countries have started to diverge.

Bulman *et al.* (2014) and the World Bank (2013) defined the MIT as the phenomenon of staying between the levels of 10%–50% and 5%–45%, respectively. The ratio of Turkey has stayed in these ranges for nearly half a century. Therefore, this study assumes that Turkish economy is in the MIT.

This section aims to show the past and current status of Turkish and South Korean economies. As mentioned in the introduction part, the starting date for comparison is 1953. After the end of the Korean War, South Korean economy exhibited the characteristics of a classic low-income country. At the same period, Turkey jumped from low income to middle income. Until 1980, both economies had grown. However, South Korea surpassed Turkey in GDP per capita to date. Table 2 shows the

TABLE 2
DEVELOPMENT OF GDP PER CAPITA IN TURKEY AND SOUTH KOREA

Year	Turkey	South Korea
1953	247 USD	66 USD
1960	359 USD	79 USD
1970	533 USD	253 USD
1980	1,518 USD	1,703 USD
1990	2,655 USD	6,514 USD
2000	4,129 USD	11,951 USD
2010	10,003 USD	18,299 USD
2015	9,257 USD	27,097 USD

Source: TURKSTAT (2017), <http://www.turkstat.gov.tr/> and KOSIS (2017), <http://kosis.kr>

development process of GDP per capita in both countries.

Since the 1970s, South Korea has achieved enormous growth in GDP per capita. Although Turkey showed good effort in the 2000s, it is still far from South Korea. The values in the table introduce the following questions: “*What did South Korea do right? and What did Turkey do wrong?*” These questions can be answered by analyzing the components of economic development.

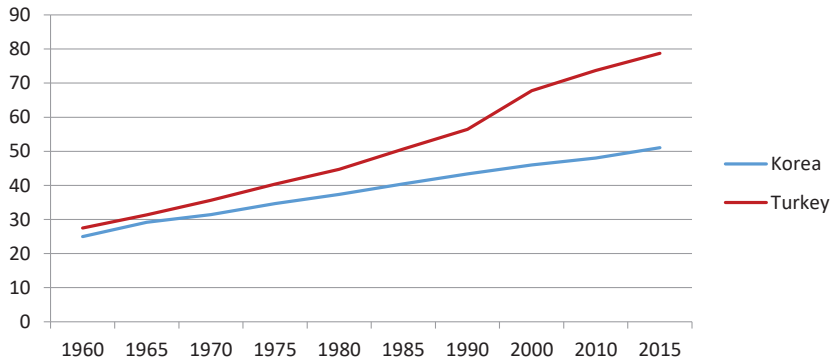
IV. Components of Development

A. GDP Per Capita: A Basic Formula

Per capita parameter can be used to determine whether an economy is in the MIT. GDP is an aggregate measure of production in a country in a year as known. After calculating GDP, per capita income can be easily calculated using a basic formula as follows:

$$\text{GDP Per Capita} = \text{GDP} / \text{Population.} \quad (1)$$

As shown in Formula (1), population is the key factor to determine per capita level. When constant GDP is used, high population equals low per capita level. Whether population is a reason for the divergence between Turkish and South Korean economies is determined by analyzing the population growth.



Source: TURKSTAT (2017), <http://www.turkstat.gov.tr/> and KOSIS (2017), <http://kosis.kr>

FIGURE 2
POPULATION GROWTH OF TURKEY AND SOUTH KOREA (MILLION)

At the beginning of the 1960s, the population of the two countries was quite close. In 1960, Turkey's population was 27.5 million, whereas South Korea's population was 24.98 million. The population gap between the two countries was less than three million people. The values in 2015 show that Turkey had 78.74 million inhabitants, whereas South Korea had 51.06 million inhabitants. At present, the difference between the population of the two countries is nearly 30 million. In other words, the population gap between the two countries has increased by nearly 10-fold in only over half a century.

The divergence of the population of the two countries may be due to many factors. This topic is another interesting research direction in itself. In economic perspective, population has advantages and disadvantages for an economy. In this concept, the nature of the population in the two countries is examined by the planning perspective in the following section.

B. Economic Planning and Nature of Population Growth in Turkey and Korea

After the World War II, the contents of economic development changed. Only quantitative growth is initially considered, but the idea of development has been transformed by including quantitative and qualitative growths. Economic planning, which is a consensus designed

TABLE 3
DEVELOPMENT PLANS, GOALS, AND ACHIEVEMENTS OF TURKEY AND SOUTH KOREA

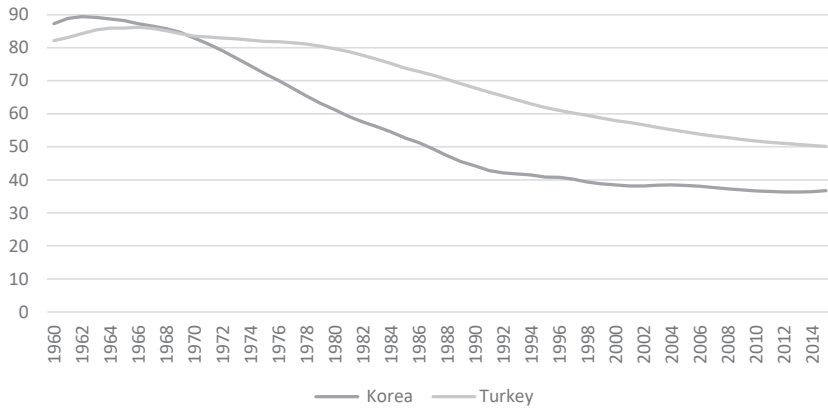
PLAN	Turkey			South Korea		
	Dates Covered	Planned Growth (%)	Actual Growth (%)	Dates Covered	Planned Growth (%)	Actual Growth (%)
First Plan	1963–1967	7	6.6	1962–1966	7.1	7.8
Second Plan	1968–1972	7	6.3	1967–1971	7	9.6
Third Plan	1973–1977	7.9	5.2	1972–1976	8.6	9.2
Fourth Plan	1979–1983	8	1.7	1977–1981	9.2	5.8
Fifth Plan	1985–1988	6.3	4.7	1982–1986	7.6	9.8
Sixth Plan	1990–1994	7	3.5	1987–1991	7.3	10
Seventh (New Economy) Plan	1996–2000	5.5–7.1	3.1	1993–1997	7.6	9.8
Eight Plan	2001–2005	6.7	5			
Ninth Plan	2007–2013	6.5	3.9			
Tenth Plan	2014–2018	5.5				

Source: South Korean Development Plans, Kim (2010a), 1st–7th Turkish Development Plans, Soyak (2003), 8th–9th Turkish Development Plans, calculated by the author.

to achieve major economic purposes, was popular at that time (Mihçi 2001).

The economic planning process of Turkey and South Korea has various similarities. South Korea started to prepare development plans in 1962, whereas Turkey started in 1963. Development plans for both countries cover five years of the economy. South Korea has finished preparing development plans with its last plan called “New Economy Plan” that covers the period of 1993–1997 (Kim 2010a). Unlike South Korea, Turkey is still preparing its development plans. The 10th development plan covers the period of 2014–2018, and the government is working on the 11th plan that covers the period of 2019–2023.

Table 3 shows that, the actual growth of Turkey has never reached the value placed in the development plans. On the contrary, the economic growth of South Korea is beyond the planned value. The development plans target many other topics aside from economic growth. Family planning program was acquainted in 1961 and was



Source: World Bank (2018b), <http://data.worldbank.org/>

FIGURE 3
AGE DEPENDENCY RATIO (% OF WORKING-AGE POPULATION)

an integral part of the first five-year development plan of South Korea (Whang 1981, p 1). The second development plan of South Korea, which covers the period of 1967–1971, has five major policies, including family planning and population control (Kim 2010a, p 45). Economic planners of South Korea believed that population growth can be an obstacle for the economy (Whang 1981, p 5), but a strong opposite opinion in Turkish society posits that Turkey should not change the population policy and should stay away from family planning at the beginning of the 1960s (Doğan 2011, p 300). Understanding the importance of the population in economic performance has taken a considerable time in Turkey. The fourth development plan in the country, which covers the period of 1979–1983, emphasizes that population policy is a derivation of economic policy; the fifth development plan of the country covers not only quantitative population growth but also qualitative population growth (Doğan 2011, p 301–302).

Despite the law no. 557 enacted in 1965, family planning was not on the agenda for Turkey until 1983. Law no. 2827 was enacted in 1983 and repealed the old law which was in use from 1965. However, this initiative was quite late because the population gap between Turkey and South Korea in 1985 was tripled and reached nearly 10 million. This situation has caused another problem called dependent population. Specifically, only people from the age range of 15–64 can be defined

as labor. Inhabitants who do not belong to this age range are not contributing to GDP, but they share it with the rest of the population. Figure 3 shows the development process in terms of population ratios for both countries.

Turkey was in a better situation in 1960 with a dependency ratio of 82.1%, whereas South Korea had a dependency ratio of 87.2%. The ratio of the two countries was nearly equal in 1969. South Korea implemented family planning policies since the 1970s and showed rapid decrease in dependency ratio. The same decrease started in Turkey in the late 1980s, but Turkey failed to catch up again with South Korea. This situation has made a considerable difference between the two countries.

C. Using Population

Population not only has disadvantages but also has advantages in the mean of economic growth. Economic growth is affected by many factors. From the popular production function of neo-classics, we can easily manage the importance of independent population.

$$Y = f(K, L) \text{ or Cobb-Douglas-type } Y = K^\alpha L^\beta \quad (2)$$

In Formula (2), Y is the total output, K is the capital, and L is the amount of labor. Formula (2) claims that a direct connection exists between population and output level. Solow (1957) added technology level into the equation and thus transformed the formula into Formula (3).

$$Y = f(K, A, L) \text{ or Cobb-Douglas-type } Y = K^\alpha AL^\beta \quad (3)$$

In Formula (3), A is the technology. Solow (1957) claimed that technology is an important factor in the economic development process. An economy will need more than capital and labor to reach a high output level. Since Solow's work, production function has been improved by many economists. Lucas (1988), Romer (1990), Grossman and Helpman (1990), Rebelo (1991), and Aghion and Howitt (1992) introduced the different endogenous models to the development literature. They argued that technology, human capital, and R&D are the key elements of economic development.

TABLE 4
PISA RANKINGS OF TURKEY AND SOUTH KOREA

Years	Turkey			South Korea		
	Math	Science	Reading*	Math	Science	Reading*
2000	—	—	—	3/41	1/41	7/41
2003	34/40	35/40	33/40	3/40	4/40	2/40
2006	43/57	44/57	37/56	3/57	11/57	1/56
2009	43/74	43/74	42/74	4/74	6/74	2/74
2012	44/65	43/65	42/65	5/65	7/65	5/65
2015	50/69	52/69	50/69	7/69	11/69	7/69

*Reading test languages are students' mother languages (Turkish and Korean).
Source: OECD (2018), <http://www.oecd.org/pisa/test/>

Human capital can only increase by knowledge. Local learning and access to foreign knowledge are important factors to overcome MIT (Lee 2013, p 25). Knowledge creation is strongly related to education policies. The educational status of Turkey and South Korea is discussed in the subsequent section.

V. Education and Catch-up

Education is the most important component for creating knowledge. The importance of education to economic growth is evident when the connection between human capital and knowledge is considered.

Education can be measured in many ways. In this study, the current status of education in the two countries is analyzed. Programme for International Student Assessment (PISA) scores are one of the best ways for comparing educational levels of countries. PISA is a triennial international survey that aims to evaluate education systems worldwide by testing the skills and knowledge of students (OECD 2018).

Although the results of PISA test are limited, they show the considerable difference between the two countries. Surprisingly, Turkey shows a deterioration rather than an improvement in education. The difference in education between Korea and Turkey may be due to many reasons. First, the government expenditure of Turkey on education was 4.29% of GDP in 2015, whereas that of South Korea was 5.25% (UNESCO 2018). South Korea achieved quantitative and qualitative growth in education through government support, whereas Turkey only achieved

quantitative growth.

The Ministry of Education of South Korea (2016) classified education policies into four sections. In the period of 1948–1960, the education system was focused on students that would build up the basic of economic growth. In the period of 1961–1980, the main aim of the education was to supply labor force for labor-intensive industries. In the period of 1981–1997, South Korea improved the quality of education. The Korean government also tried to enhance Korea's national competitiveness by giving support to engineering universities. Since 1998, South Korea has focused on creating knowledge-based labor force. With regard to the four terms in Turkey, Turkey passed through the first step called building up the basics in economic growth from the 1920s within the leadership of Mustafa Kemal Atatürk who is the founder of modern Turkey. Despite the 1929 crisis, Turkey finished the first term of education in the 1950s. Turkey managed to educate people for labor-intensive industries from the 1950s to 1980. In 1980, Turkey changed the economic system from import substitution to export orientation and the education system started the third term. Since 1980, education in Turkey has been quantitatively improved. The number of universities was only 19 in 1981 (Günay and Günay 2011, p 2). Between 1980 and 2018, 187 new universities were founded, and the total number of universities was raised to 206 in 2018 (CHE 2018). Although the quantity of education has improved, its quality of education has not changed.

Improving the quality of education is difficult because recruiting high-quality teachers is costly (Wong and Fung 2019). Other problems in Turkish education are examined using the best university rankings and student–teacher assessment.

According to the Times Higher Education (2018), Turkey is not qualified to be one of the best 200 universities in the world. By contrast, five South Korean universities are placed in the list. The best Turkish university is Sabancı University, which is ranked 351st and 400th best university in the world. The best university of South Korea is Seoul National University, which is placed the 63rd best university in the world. Comparing the two local best universities from the education quality perspective shows that, each staff member in Sabancı University has 22 students, whereas each staff member in Seoul National University has only 12 students. Notably, Sabancı is a private university, whereas Seoul National is a state university. The best state

university of Turkey, which is Bogaziçi University, cannot be compared with Seoul National University because each staff member in the former has 25 students.

The lack of quality in education hinders the successful catch-up of Turkish economy. As a result, the knowledge creation process of Turkey is unhealthy and has a large room for improvement. The problem in knowledge creation reflects other dimensions of the economy. These reflections on foreign trade and R&D are discussed in the subsequent section.

VI. Foreign Trade and R&D

The classic GDP formula for an open economy in Formula (4) indicates that foreign trade has an important effect on GDP level.

$$\text{GDP} = C + I + G + X - M \quad (4)$$

If $(X - M) > 0$, then the situation is foreign trade surplus, which positively affects the GDP. If $(X - M) < 0$, then the situation is foreign trade deficit, which negatively affects the GDP. From the comparison of the export and import statistics of the two countries, we can obtain the contribution of foreign trade to GDP for both countries.

In the early 1960s, Turkey and Korea started with nearly the same level of foreign trade deficit. Notably, exports of Turkey were nearly 10 times more than those of Korea in the beginning. In the following decade, exports of Korea increased by 20 times and passed those of Turkey. The change in foreign trade policy was a critical point. Korea applied an import substitution strategy between 1953 and 1960. After the reconstruction because of war in 1960, Korea changed the strategy to export oriented (Kim 2010b). With the export-oriented strategy after 1970, exports of Korea substantially grown, but the trade deficit increased. Korea gained the first income surplus in 1986 and that surplus lasted until 1990. After the 1998 crisis, Korea always gained the surplus, which increased to nearly 90 billion USD in 2016.

Turkey applied an import substitution strategy until 1980. After 1980, Turkey changed the strategy to export oriented and increased its exports by six times in a decade. However, the imports also increased more than three times, which nearly doubled the foreign trade deficit in the same decade. Although a large boom in exports occurred from

TABLE 5
FOREIGN TRADE OF TURKEY AND SOUTH KOREA (1960–2016)

Years	TURKEY			SOUTH KOREA		
	Exports (X)	Imports (M)	(X-M)	Exports (X)	Imports (M)	(X-M)
1960–1961*	0.3	0.4	-0.1	0.04	0.2	-0.1
1970	0.6	0.9	-0.3	0.8	1.8	-1
1980	2	7	-5	17	22	-5
1990	12	22	-9	65	69	-4
2000	27	54	-26	172	160	12
2010	113	185	-71	466	425	41
2016	142	198	-56	495	406	89

*Data refer to 1960 for Turkey and 1961 for South Korea

Source: TURKSTAT (2017), <http://www.turkstat.gov.tr/> and KOSIS (2017), Kim (2010b) for 1961 and 1970 data of South Korea.

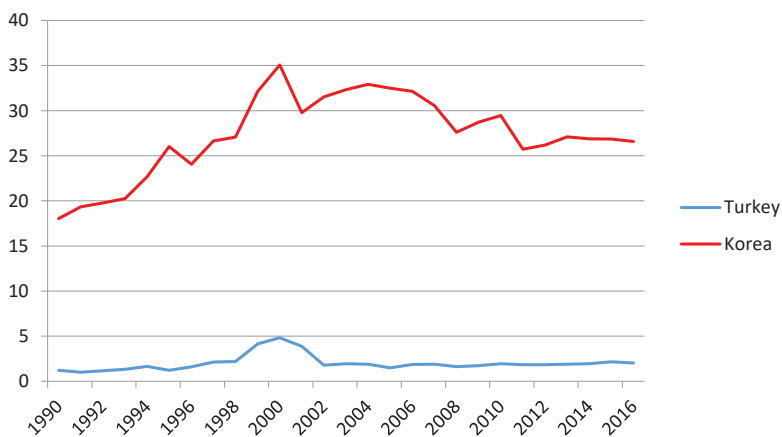
the early 2000s, Turkey failed to catch-up with the surplus in foreign trade. A strong correlation exists between education and foreign trade. Considering the unhealthy educational infrastructure in Turkey, the R&D activities stayed limited in the country.

Many indicators can be used to measure R&D level. One is R&D/GDP (%) ratio. In 1965, the R&D/GDP (%) ratio of Korea was 0.26, which increased to 0.37 in 1970 and reached 1.41 in 1985. In 2000, the ratio reached 2.39 (Lee 2016, p 61). The ratio further reached the top level with 4.27 in 2014. In 1996, the R&D/GDP (%) ratio of Turkey was 0.45, which reached 0.84 in 2010 and passed to 1.0 in 2015 (World Bank 2018b).

The other measurement is patent application. From the data of 2015, we can find the considerable difference between the two countries. In 2015, Korean firms and individuals granted 20,201 patents, whereas Turkish firms and individuals granted only 136. With regard to the total granted patents between 1977 and 2002, Korean firms and individuals granted 22,860 patents, whereas Turkey granted only 75 (USPTO 2017). The gap between the countries may be strongly related to educational issues.

R&D activities can also be measured from high-tech exports. Figure 4 shows the high-tech export ratios of the two countries.

Figure 4 shows that the level of high-tech exports of Turkey is



Source: World Bank (2018b).

FIGURE 4
HIGH-TECH EXPORTS (% OF MANUFACTURED GOODS)

relatively very low. Therefore, a value adding problem exists in the manufacturing process in Turkey. The value adding problem in foreign trade chapters can be analyzed by combining the two facts (low R&D and high-tech exports).

The foreign trade chapters of Turkey indicate that three of the five major elements are the same. In other words, Turkey has to import most of the goods for export. This situation is an important sign of import dependency of exports. To export 100 units, Turkey has to import 43 units as input (TEA 2012). At the same ratio, Korea has to import only 11 units for exporting 100 units (Kim 2004).¹

Under export dependency and low value adding process, Turkey will have difficulty gaining foreign trade surplus in the near future. Low R&D activity directly causes value adding problem and indirectly complicates to decrease import dependency ratio.

Korea also began with low value-added activities, but firms then realized the importance of upgrading to high value-added products. With the support of knowledge provided by a strong educational system and R&D activities, Korea managed to escape from the MIT. If a middle-

¹ Data refers to year 2000. Calculated by the author using data provided in (Kim 2004, p 4).

TABLE 6
MAJOR FIVE FOREIGN TRADE CHAPTERS OF TURKEY (2016)

Export		Import	
Chapter Name	Share in Total	Chapter Name	Share in Total
Vehicles other than railway or tramway (car, motorcycle, tractor) and parts	13.9 %	Boilers, machineries and mechanical appliances, parts	13.8 %
Boilers, machineries and mechanical appliances, parts	8.6 %	Mineral fuels, minerals oils and products of their distillation	13.8 %
Precious stones, precious metals, pearls, and articles	8.5 %	Electrical machinery and equipment (TV, Voice and Video Recorder) parts	10.2 %
Knitted and crocheted goods (Apparel)	6.2 %	Vehicles other than railway or tramway (car, motorcycle, tractor) and parts	9 %
Electrical machinery and equipment (TV, Voice and Video Recorder) parts	5.49 %	Iron and steel	6.4 %

Source: TURKSTAT (2017), <http://www.turkstat.gov.tr/>

income country fails in upgrading, then it may fall into the MIT (Lee 2013, p 23). Turkey's failure to move from the MIT is due to this reason.

VII. Conclusion

Turkey has retained its middle-income status for half a century. The relative GPD per capita of Turkey is only over the 20% level. Therefore, Turkey is trapped in the MIT similar to many other countries.

Lessons from South Korea show that controlling population is one of the key elements between the two economies in escaping from the MIT. Korea and Turkey implemented family planning policies in 1961 and 1983, respectively. The 20-year difference in policies resulted in a large divergence between the population of the two countries.

Meanwhile, Turkey has failed to provide knowledge-based education for the population. Knowledge of Turkish students ranks quite low among OECD countries. This situation hinders the country's initiative to create highly skilled human capital. Lack of knowledge has caused limited R&D activities, which has caused value adding problem in

manufacturing. Therefore, the high-tech exports of Turkey stay at a very low level.

Low- and middle-tech exports create low revenue for exports. When this situation is combined with high (43%) import dependency of exports, a large foreign trade deficit occurs in the economy. Therefore, Turkey opened its economy before it prepared the appropriate situation for foreign trade in 1980.

Apart from the reform in the education system, other reforms should also be done in Turkey to move to the high-income category in the future. First, new population policies should be formed to control the population. Moreover, new education policies should be developed, which is an important issue. New policies should include additional subsidies for R&D activities. The ratio of high-tech exports may be raised with the support of R&D. Low value-added exports must be upgraded to high value-added exports that can become the most important cure for the Turkish economy.

This study focuses on contrasts and similarities between Turkey and South Korea from past to current on the way to development. Lessons from South Korea are suggested for Turkey and may be an inspiration for many other developing middle-income countries.

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