A Review of Foreign Direct Investments in Turkish Energy Sector

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## Abstract

Energy sector is one of the key sectors that can affect economic development and contribute to sustainable development goals. In addition, growing energy security concerns, maintaining low costs and improving efficiency warrant implementing various government policies and encouraging better coordination among different actors. It is in this context, foreign investments can play an important role in developing economies to address these issues. The literature on FDIs to other sectors is colossal and well documented; however, studies on energy sector have been limited and mostly carried out for the developed economies and major developing economies. In this paper, a contribution to the literature has been made by examining analyzing Turkish energy sector, which has promising prospects for the Middle East and South-Eastern European regions. The review shows that Turkey has taken steps to create a favorable environment for foreign investors; yet, it still struggles with structural economic problems and energy-market related issues. Moreover, European integration process has made significant contributions to Turkish economy. In this regard, macroeconomic stability and together with pursuit of economic and institutional reforms to complete accession negotiations for EU membership is critical to stimulate further investments into the energy sector.

Keywords: Foreign direct, investment, energy, Turkey

## Introduction

Foreign direct investment (FDI) has proven to be a fast and reliable source to help getting access to new technologies, develop manufacturing capabilities and finance new investments in many countries. As liberalization of markets and interactions among countries has increased, foreign direct investment flows have increased as well. While earlier foreign direct investments in the energy sector were limited to natural resources (mostly hydrocarbons), liberalization of energy markets, introduction of regional power markets, and new renewable energy technologies have increased FDI inflows to power and natural gas sectors, mostly to benefit from untapped potential in many countries.

Higher economic growth has contributed to an increasing energy demand in Turkey, and the government has taken many policy measures to support investments in the energy sector. Besides, Turkey’s location and its proximity to major energy suppliers create opportunities as an energy hub in the Middle East region. Many foreign investors have shown their interest in energy projects in recent years.

Despite the importance of this sector in achieving higher economic growth, FDI inflows in Turkish energy sectors have not attracted enough attention and limited research has been done to identify determinants of FDI flows into the sector. In this respect, this study aims to contribute to the literature by providing a broad review of foreign direct investments in Turkish energy sector and compare its performance with other economies. The article starts with an overview of the foreign direct investments in the world in Section 2. Section 3 presents trends in Turkish energy sector and Section 4 presents literature review on the foreign direct investments in Turkish energy sector. Section 5 discusses the issues in Turkish energy sector and Section 6 concludes the article.

## Overview of Foreign Direct Investments in the world

Foreign direct investments (FDI) are an important source of technology transfers and their contributions to higher economic growth and development in many developing economies (Ali & Guo, 2005; Jadhav, 2012; Khachoo & Khan, 2012). According to OECD FDI “reflects the objective of establishing a lasting interest by a resident enterprise in one economy (direct investor) in an enterprise (direct investment enterprise) that is resident in an economy other than that of the direct investor”. Furthermore, if a foreign investor owns at least 10%, directly or indirectly, of the voting rights in the domestic venture, investment qualifies as direct investment (OECD, 2009). IMF also uses 10% threshold of ordinary shares or voting stock as a basis for treating it as a direct investment relationship between the two parties (IMF, 2008).

According to World Bank data on FDI inflows, global FDI inflows have increased significantly $10 billion in 1970 to $2.4 trillion in 2016, with an average annual growth of 11.8%. Figure 1 shows that Europe and Central Asia has been the largest recipient of FDI inflows, followed by the North America region. However, East Asia & Pacific countries have surpassed North American countries after 2000, and exceed $600 billion in 2014. Latin American countries have also managed to attract FDI inflows to their countries recently; however, Sub-Saharan Africa and North Africa & Middle East countries were not able to increase growth in FDI inflows.

Figure . FDI Inflows by Region - Million USD (Source:WB)

## FDI inflows in Turkish Energy Sector

Turkey is an upper-middle income economy which has achieved considerable economic growth in the last three decades. It is a candidate country for the EU membership and it is one of the largest economies in the Middle East region (World Bank, 2016a). Until 1980s, Turkish economy was heavily dependent on public sector investments, and import-substitution policy was adopted to support domestic industries using tariffs and non-tariff barriers. Hence, foreign direct investment was limited to specific sectors mostly to automotive and medicine. Following the military coup in 1980, Turkey started to follow a more liberal economic policy, including major privatizations, lifting government controls on capital movements and foreign trade. As a results, FDI inflows to major sectors have increased; however, political instability, inconsistent economic policies and resulting financial crises, institutional problems and concerns on rule of law and issues with the property rights limited FDI inflows, and investments were mostly made in services sector such as tourism, banking, insurance and commerce (Eduardo & Martín, 2014; Erkilek, 2003). After 2001 economic crisis, Turkey initiated new economic reforms with more focus on enhancing regulatory capacity, increasing transparency, supporting export capacity and integration with the European Union. As a result FDI inflows increased from 0.5% of GDP in 2002 to 3.4% in 2007. However, global financial crisis and recent problems in the region affected Turkey adversely, reducing to 1.5% of GDP afterwards.

Figure 2 shows FDI inflows to the selected developing countries. As seen from the figure, FDI inflows to Turkey as percent of GDP have been lower than the average of the developing economies. Annual FDI inflows to Turkey were around 0.81% of GDP on average during 1970-2016, while the average FDI inflows to developing economies were twice of Turkey’s, 1.74%. Brazil’s FDI inflows were 1.86% of GDP and Mexico’s FDI inflows were around 1.83% of GDP annually on average.

Figure . FDI inflows to Developing Economies (Source:UNCTAD)

Compared to the other major competitors, Turkey’s position in FDI inflows is still not promising. Table 1 shows FDI inflows to Turkey and its neighboring or major competitors. As seen from the Table, Turkey’s position relatively worse compared to Brazil, Israel, Mexico, and only after 2000, Turkey managed to attract FDI inflows, which is still lower than the average.

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| Table 1. Average FDI Inflows to Selected Countries- % of GDP | | | | | |
| Country | **1970-79** | **1980-89** | **1990-99** | **2000-09** | **2010-2016** |
| Brazil | 1,21 | 0,77 | 1,40 | 2,69 | 3,24 |
| Egypt | 1,02 | 3,72 | 1,33 | 3,87 | 1,88 |
| Greece | 0,58 | 0,98 | 0,74 | 0,84 | 0,82 |
| Israel | 0,64 | 0,32 | 1,19 | 3,74 | 3,37 |
| South Korea | 0,67 | 0,36 | 0,69 | 1,23 | 0,74 |
| Mexico | 0,51 | 1,16 | 2,03 | 2,93 | 2,56 |
| Portugal | 0,46 | 0,75 | 1,67 | 2,77 | 2,44 |
| South Africa | 0,47 | 0,00 | 0,57 | 1,89 | 1,20 |
| Turkey | 0,13 | 0,15 | 0,34 | 1,72 | 1,75 |
| Developing economies | 0,58 | 0,70 | 1,94 | 2,97 | 2,52 |
| Source:UNCTADSTAT | | |  |  |  |

In terms of sectoral FDI inflows in Turkey, financial services received the highest share among all sectors, $50 billion between 2005 and 2017 as shown in Table 2. Manufacturing and energy sectors followed financial sector, and energy sector received almost 14 billion USD in the last decade. The major reasons for the increase were privatizations, liberalization of the energy markets and large inter-governmental projects in the energy sector such as Akkuyu Nuclear Power Plant Project.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Table 2. Breakdown of FDI Inflows by sector in Turkey, $ Million,** | | | | | | | | | | |
| **Source: Ministry of Economy, Turkey** | | | | | | | | | | |
| **Sector /Year** | **2005-2009** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** | **2016** | **2017** | **Total** |
| Manufacturing | 12309 | 924 | 3597 | 4343 | 2207 | 2894 | 4225 | 2241 | 1261 | 34001 |
| Financial Serv. | 29480 | 1621 | 5883 | 2084 | 3415 | 1535 | 3516 | 1766 | 1452 | 50752 |
| Energy | 4941 | 1824 | 4293 | 924 | 2334 | 1322 | 1340 | 678 | 943 | 18599 |
| Wholesale & Retail | 3245 | 435 | 709 | 221 | 377 | 1165 | 598 | 688 | 591 | 8029 |
| Mining | 734 | 136 | 146 | 213 | 242 | 449 | 207 | 148 | 448 | 2723 |
| Construction | 1129 | 310 | 301 | 1427 | 178 | 232 | 106 | 291 | 627 | 4601 |
| Real Estate | 1406 | 241 | 300 | 173 | 128 | 252 | 171 | 283 | 31 | 2985 |
| Health &Soc. Serv. | 525 | 112 | 232 | 546 | 106 | 204 | 58 | 274 | 62 | 2119 |
| Trans. & Storage | 1479 | 183 | 222 | 130 | 300 | 594 | 1524 | 635 | 1350 | 6417 |

As indicated earlier, growing energy demand in Turkey is directly linked to its economic performance reflected in higher economic growth. The energy use (kg of oil equivalent per capita) has increased more than 50%, on the other hand electricity consumption (kWh per capita) has increased three-fold in the last two decades (World Bank, 2016b). Three key major sources of energy were coal, oil and hydropower until late 1990s; however, pertaining to higher utilization of gas in heating and electricity generation, natural gas became one of the major sources for energy supply in recent years. In the 1990s, energy industry was heavily controlled by the public sector, and companies in the energy sector were state-owned, with the exception of the petroleum industry in which its distribution by private companies was also permitted. However, bulk of the distribution was managed by public enterprises, the largest fuel distribution company (Petrol Ofisi) and four of five refineries (TUPRAS) were also state-owned. Similarly, electricity generation, transmission and its distribution were primarily managed by state-owned companies and they were vertically integrated with Turkish Electricity Authority (TEK) founded in 1970. The process of economic reforms, primarily motivated to reduce budgetary deficits, led to developing Built-Operate-Transfer (BOT) and Transfer-of-Operating Rights (ToOR), in order to allow private participation in generation investments. In 1993, TEK was divided into two state economic enterprises, Turkish Electricity Generation Transmission Co. (TEAS), responsible for the generation and transmission, and Turkish Electricity Distribution Co. (TEDAS), taking the responsibility of distribution of electricity and electricity services in trade. Further reforms initiated after 2001 economic crisis, and as a requirement of accession negotiations with EU, a new Electricity Market Law (EML) was enacted in 2001, aiming to promote competitive and liberalized electricity market. This led a further division of TEAS into three separate economic enterprises, namely Turkish Electricity Transmission Co. (TEIAS), Electricity Generation Co. (EUAS) and Turkish Electricity Contracting and Trading Co. (TETAS). EML was based on bilateral contracts, power exchange, and regulated third-party access scheme (TBMM, 2013). The new law permitted private companies to invest in electricity generation with the exclusion of transmission. In the process, state-owned power plants (except for very large hydropower plants) and its distribution were also privatized, aiming to attract further investment into this sector. Similar reforms were made in the natural gas sector with the enactment of Natural Gas Market Law (NGML) No.4646 in 2001 which facilitated in the development of a competitive and liberalized market of natural gas. NGML also aimed to bring financial stability, a transparent natural gas market to cater consumers demand of natural gas and ensuring supply at competitive prices (EPDK, 2001). Petroleum Pipeline Corporation (BOTAS) was reorganized and its monopoly over gas imports, its transmission, sales and pricing were removed.

The process of privatization of energy sectors opened up new investment opportunities for foreign investors. Gradually most of the stated-owned companies over the years have been bought by many foreign companies, either directly or as joint-ventures. Cukurova and Kepez (two electric utilities) were bought by Rumeli Elektrik in 1990 (OIB, 2016). In 1992, Ipragaz (LPG Company) was also privatized, and Primagaz A.G.(Dutch-French company) bought it for $64 million. Furthermore, during early phase of these reforms in the 1990s, shares of several public energy companies had been privatized in lesser amounts through public offerings (such as Petrol Ofisi-TUPRAS in 1991). In the power distribution sector, a different model of ToOR-backed share-sale model was employed to privatize the sector. In this model, investor can own all the shares but it allowed distribution assets to be owned by Turkish Electricity Distribution Company. In this process, eighteen companies were privatized between 2009 and 2013.

Figure shows FDI inflows to energy sector (FDI related to extraction of crude petroleum and natural gas; service activities incidental to oil and gas extraction and FDI inflows to electricity, natural gas and water sectors) in Turkey and average of selected OECD countries (Austria, Czech Republic, France, Germany, Mexico, Netherlands and Poland). Data is taken from OECD BMD3 Database which covers data between 1990 and 2013[[1]](#footnote-1). As seen from the figure, FDI inflows to Turkish energy sector followed a similar pattern with the average, but lags behind two or three years. Recent surge in Turkish FDI is mostly related with privatization and power generation investment related FDI mostly.

Figure . Energy FDI inflows to Turkey (Source:OECD)

### Literature Review on FDI Inflows to Turkish Energy Sector

FDI movements has been mostly examined under portfolio and capital movements, and early studies have focused on factors such as ownership advantages, risk aversion, risk diversification, and asset acquisition etc. (Sethi, Guisinger, Phelan, & Berg, 2003). The literature on FDI inflows has two major categories for investment decisions: Internal factors and external factors. While the first one examines companies' internal motives for direct investments, the second branch focuses on the external factors and policies that affect FDI decisions (Blonigen & Piger, 2011). Within this context, four major motives are presented for FDI flows:

1. Natural-resource seeking FDI which aims to gain access to a natural resource in a region,
2. Market-seeking FDI which aims to benefit from market size in the host country,
3. Efficiency-seeking FDI which aims to reduce production costs or access to domestic innovative capabilities,
4. Strategic-asset seeking FDI which aims to acquire assets in the local economies (Dunning, 2003; Hornberger, Battat, & Kusek, 2011).

Different theories focusing on FDI inflows have stressed multiple factors are affecting FDI decisions which can be grouped under four categories (Aleksynska & Havrylchyk, 2013; Bevan, Estrin, & Meyer, 2004; Biswas, 2002; Blonigen, 2005; Demekas, Horváth, Ribakova, & Wu, 2005, 2007; Loewendahl & Ertugal-Loewendahl, 2000; Sethi et al., 2003; van Wyk & Lal, 2008):

1) Macroeconomic policies and Business/Investment Environment: Interest rate, risk premium, interest rate, labor costs, tax rates, inflation rate, etc

2) Quality of institutions and Political stability: Legal Framework, Property rights, Rule of Law, etc.

3) Human and Social capital: Culture, traditions, education etc.

4) Country-specific characteristics: Resource endowment, Infrastructure, Location and proximity to other markets etc.

Studies on energy investments suggest that there are many obstacles for energy investments in developing economies, and policies promoting energy investments such as restructuring, privatization and financial incentives are assumed to promote energy FDI inflows (Akampurira, Root, & Shakantu, 2009; Ekholm, Ghoddusi, Krey, & Riahi, 2013; Gabriele, 2004; IEA, 2003; OECD/IEA, 2007, 2008; Streimikiene & Siksnelyte, 2014). Research on FDI in the energy sector in developing economies has mostly been conducted on natural resource investments (oil and natural gas to a great extent). Recently, with the growing concerns on climate and emissions and more interest on renewable energy technologies, studies are conducted on FDI in the power sector (Bezuidenhout, Coetzee, & Claassen, 2014; Khatun & Ahamad, 2015). These studies, similar to the FDI studies in other sectors, underlined the problems such as regulatory barriers, risks and uncertainties in incentive schemes, poor institutional quality, lack of finance, problems and frictions in energy markets are the major obstacles for foreign investors (Blackman & Wu, 1999; Curran, Lv, & Spigarelli, 2016; Khatun & Ahamad, 2015; Komendantova, Patt, Barras, & Battaglini, 2012; Lv & Spigarelli, 2015; Resmini, 2000; Streimikiene & Siksnelyte, 2014; Zeng, Liu, Liu, & Nan, 2017). Most empirical studies have shown that institutional quality and business environment are found to be the major driver of energy FDI inflows to developing economies. Yet, country-specific characteristics, notably market potential and public policies to encourage energy investments also promote energy FDI inflows.

The studies on FDI inflows in Turkey, have also found similar results to those studies. While authors tried to validate different theories and approaches in analyzing FDI flows in Turkey, most of them have focused on macroeconomic variables, business environment, European Union accession process, institutions and micro-economic factors. These studies have found out that political and economic reforms contributed positively to investment environment, and economic integration with the European Union have supported FDI inflows to Turkey ; however, Turkey performed poorly compared to similar countries, and problems in rule-of law, lack of transparency in bureaucratic processes, unfavorable fiscal policy and taxation, unfavorable business environment, low innovative capabilities, economic instability, negative government attitudes towards foreign investors, weak enabling environment for privatization-related FDI, lack of effective investment promotion still constitute considerable obstacles against FDI inflows. (Basar & Tosunoglu, 2006; Bilgili, Tülüce, & Doğan, 2012; Emir, Uysal, & Doğru, 2013; Erdal & Tatoglu, 2002; Hadjit & Moxon Browne, 2005).

Sanchez-Martin (2014) discussed the role of energy networks in FDI inflows to Turkey. Using a qualitative theoretical framework to assess the impact of regionalization on FDI, the authors tried to explain the contribution of EU accession process considering the location of the host country and the degree of environmental change derived from the accession agreement. The authors concluded that liberalization, privatization and Turkey's position in EU's energy security strategy were the main factors for the increase of foreign investments in Turkish electricity, gas and oil sectors.

Sirin (2017) also conducted a panel data analysis to understand the drivers of FDI inflows to Turkish power market between 2002-2012 period. The study has found that privatization, EU Membership and relatively favorable cost and price competitiveness (real effective exchange rate) had positive effect on FDI inflows. Moreover, the author underlined the importance of business environment, quality of government institutions (governance) and support schemes for new energy technologies in attracting FDI to the power sector.

### Issues in Turkish economy and Energy Markets

Figure 4 shows regulatory restrictiveness index for OECD countries in 2003 and 2016. This index measures FDI restrictions on four main types: 1) Foreign equity limitations, 2) Discriminatory screening or approval mechanisms, 3) Restrictions on the employment of foreigners as key personnel and 4) Other operational restrictions. Although this index does not completely reflect the restrictions on FDI or gives a full picture of the business environment, it helps to understand the issues in a country. Turkey had the highest score in 2003, followed by Canada and Australia. With the economic reforms and European integration process, Turkey, at least managed to decrease restrictions on FDIs, and its score is close to OECD average. Nonetheless, countries similar to Turkey have lower scores, which may indicate a disadvantage in competition for new investments.

Figure . FDI Restrictiveness Index (Source:OECD)

Although restrictions of FDIs have decreased over time, some structural problems still exist in Turkey for businesses. According to the World Bank’s Ease of Doing Business Rank, Turkey ranked 60th among 190 countries in 2017. This index shows how the regulatory environment is more conducive to the starting and operation of a local firm, and evaluates the legal system, infrastructure and property rights. The best countries were New Zealand, Singapoure, Denmak, South Korea, USA, UK and Norway, whereas Turkey is close to Azerbaijan, Colombia, Peru and Chile. While Turkey has a better position in enforcing contracts (ranked 30th), protecting minority investors (ranked 20th), its position is bad in resolving insolvency (ranked 139th), starting a business (ranked 80th), and paying taxes (ranked 80th) (WB, 2017)[[2]](#footnote-2). In addition, financial constraints, taxation, the size of informal economy and the quality of the workforce as the major constraints in Turkish economy affects companies’ performance negatively (World Bank, 2010).

In energy markets, there are similar obstacles that limit FDI inflows. According to a study conducted by PwC in 20016, problems in renewable energy support schemes, declining prices in the electricity market, financial sustainability of natural gas power plants and power distribution utilities have created obstacles in attracting FDI to these sectors (PwC, 2016).

As discussed in the literature, renewable energy technologies create opportunities for innovation and building domestic innovative capabilities; however, path dependency and inertia problems in energy technology innovation systems require consistent long-term policy, strong collaboration of actors (government agencies, universities and the business sector) and effective incentive mechanisms (Sirin, 2011, 2017). Turkey has significant renewable energy potential for electricity generation and heating (OECD/IEA, 2008), and this potential can contribute a lot to Turkey as well as to the European Union (Sirin & Ege, 2012). However, earlier support schemes have failed to attract investors to the market in some technologies, and investors refrained investments such as solar power investments (Dilli & Nyman, 2015; Topkaya, 2012). In 2010, new incentive schemes were initiated to support new renewable energy investments, and the share of non-hydro renewable energy in power generation has increased recently as shown in Figure 5.

Figure . Electricity generation by sources-GWh (Source:TUIK)

According to Ernst and Young's Renewable Energy Country Attractiveness Index (RECAI), Turkey has improved its rank from 24th (of 25 countries) in 2007 to 17th (of 40 countries) in 2017 (Ernst & Young Global Limited, 2017). Recent renewable energy support scheme- Renewable Energy Resource Area (Yenilenebilir Enerji Kaynak Alanlari-YEKA) is seen a promising scheme to support renewable energy technologies and attract foreign investors. This scheme was initiated in 2016 to reduce bureaucratic processes, to support technology transfer and domestic manufacturing capabilities. This scheme is a tendering process in which the participants compete in the lowest feed-in tariff per kWh. In this respect, it is similar to those tenders used in Great Britain in the early 2000s; however, in this scheme the winner of the tender has to purchase a defined share of domestic manufactured equipments (defined in the tender) in the power plant, and even more it has to produce equipment and conduct R&D activities for defined time-period. First Solar YEKA tender was made for 1000 MW installed capacity in March 2017. This tender required construction of Solar PV factory with annual 500 MWp production capacity and 15-year R&D plan. The winner was Kalyon-Hanwha Group, and the final price was 6,99 USD cent/kWh, which is almost half of the earlier incentive scheme. The wind tender was made in August 2017, and the final price was 3.48 USD cent/kWh. In this tender, again, the winner will build domestic wind equipment factory, and 65% of the equipment used in the project must be manufactured in Turkey.

These tenders are supported by various stakeholders for supporting domestic manufacturing and attracting foreign investors. It is still too early to reach a conclusion on the success of these tender given the unsuccessful outcomes in the other countries, but these tenders also provide new opportunities for new foreign investors.

## Conclusion

Energy sector is one of the primary sectors that can affect economic development and contribute to sustainable development goals. In addition, growing energy security concerns, maintaining low costs and improving efficiency warrant implementing various government policies and encouraging better coordination among different actors. It is in this context, foreign investments can play an important role in developing economies to address these issues.

The literature on FDIs to other sectors is colossal and well documented; however, studies on energy sector have been limited and mostly carried out for the developed economies and major developing economies. In this paper, a contribution to the literature has been made by examining analyzing Turkish energy sector, which has promising prospects for the Middle East and South-Eastern European regions.

The literature points out that institutional quality, consistent government policies and sound macro-economic environment are essential to attract foreign investments. In addition, energy market reforms and growing support for renewable energy technologies help countries to transfer new technologies via FDIs. The review in this paper shows that Turkey has taken steps to create a favorable environment for foreign investors; yet, it still struggles with structural economic problems and energy-market related issues. Moreover, European integration process has made significant contributions to Turkish economy. In this regard, macroeconomic stability and together with pursuit of economic and institutional reforms to complete accession negotiations for EU membership is critical to stimulate further investments into the energy sector.

There are some limitations of this study, and further research may focus on these issues. First of all, FDI data used in this study retrieved from OECD's BMD3 classification. Starting from 2014 OECD provides a more detailed FDI data (BMD4 classification). So, further research could benefit from using more detailed data. Moreover, detailed surveys and microeconomic analysis could shed light on the potentials and weaknesses in the Turkish energy sector for new foreign investments.

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1. OECD now uses Benchmark definition, 4th edition (BMD4) for FDI statistics, unfortunately no data is available for Turkey in BMD4 database. [↑](#footnote-ref-1)
2. Ranking of Economies-Doing Business, http://www.doingbusiness.org/rankings, accesses at 15/04/2018 [↑](#footnote-ref-2)