Energy Policy 69 (2014) 143–153

Contents lists available at ScienceDirect

Energy Policy

journal homepage: www.elsevier.com/locate/enpol

Motor fuel prices in Turkey

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HIGHLIGHTS

- The key issues (e.g. taxes) related to motor fuel prices in Turkey are explored.
- Their impact on transport activities and income distribution is also investigated.
- An econometric analysis is performed to estimate motor fuel demand in Turkey.
- Motor fuel demand in Turkey is found to be quite inelastic.
- Turkish fuel market is open to opportunistic behavior by firms and the government.

ARTICLE INFO

Available online 24 February 2014

Keywords:
Model construction and estimation
Fiscal policy
Motor fuel prices

ABSTRACT

The world's most expensive motor fuel (gasoline, diesel and LPG) is sold most likely in the Republic of Turkey. This paper investigates the key issues related to the motor fuel prices in Turkey. First of all, the paper analyses the main reason behind high prices, namely motor fuel taxes in Turkey. Then, it estimates the elasticity of motor fuel demand in Turkey using an econometric analysis. The findings indicate that motor fuel demand in Turkey is quite inelastic and, therefore, not responsive to price increases caused by an increase in either pre-tax prices or taxes. Therefore, fuel market in Turkey is open to opportunistic behavior by firms (through excessive profits) and the government (through excessive taxes). Besides, the paper focuses on the impact of high motor fuel prices on road transport associated activities, including the pattern of passenger transportation, motorization rate, fuel use, total kilometers traveled and CO_2 emissions from road transportation. The impact of motor fuel prices on income distribution in Turkey and Turkish public opinion about high motor fuel prices are also among the subjects investigated in the course of the study.

1. Introduction

With a gross domestic product (GDP) of $794.5 billion in 2012 and a population of 80.7 million people, Turkey is the 17th largest economy of the world (CIA, 2013). As can be seen in Table 1 (IEA, 2013b), Turkey is heavily dependent on fossil fuels to meet its energy requirements, with oil (27%), natural gas (32.7%), and coal (30.2%) being the predominant primary energy sources, accounting for a significant majority (90%) of the total primary energy supply. They also account for approximately 72.4% of the country's total final energy consumption. Turkey's domestic energy resources, especially those of oil and natural gas, are very limited; so its dependence on the imports is very high. Turkey imported 78.7% of its primary energy consumption in 2011.

Turkey's economy is increasingly driven by its industry and service sectors, although its agriculture sector is still responsible for about 25% of employment. An aggressive privatization program has reduced state involvement in infrastructure, industry, banking, transport, and communication sectors. Oil began to flow through the Baku–Tbilisi–Ceyhan pipeline in May 2006, marking a major milestone that will bring up to one million barrels per day from the Caspian to international oil markets. Several gas pipelines projects are also moving forward to help transport Central Asian gas to Europe through Turkey, which over the long term will help to address Turkey's dependence on imported oil and gas to meet 97% of its energy needs. Turkey remains dependent on often unstable, short-term investment to finance its large trade deficit. The stock value of foreign direct investment stood at $117 billion at the end of 2012. Turkey's relatively high current account deficit and political

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http://dx.doi.org/10.1016/j.enpol.2013.10.075

Table 1
Energy balances of Turkey in 2011 (ktoe).

Flow/product	Coal	Natural gas	Oil	Hydro	Other renewables	Electricity	Other	Total
Production	17,840	625	2342	4501	6751	0	5	32,064
Imports	15,533	36,115	36,484	0	0	392	0	88,524
Exports	0	−588	−7467	0	0	−313	0	−8369
Other changes	553	625	−939	0	0	0	0	239
Total primary energy supply	**33,925**	**36,778**	**30,420**	**4501**	**6751**	**78**	**5**	**112,459**
% share	*30.2*	*32.7*	*27.0*	*4.0*	*6.0*	*0.1*	*0.0*	*100.0*
Power plants	−18,208	−17,753	39	−4501	−1118	19,728	1216	−20,598
Losses	0	−4	0	0	0	−2784	0	−2787
Other	−2623	−1359	−2230	0	−189	−4001	0	−10,403
Total final energy consumption	**13,094**	**17,666**	**28,229**	**0**	**5445**	**15,805**	**1221**	**81,458**
Industry	6939	7877	1559	0	0	7366	1216	24,957
Transport	0	219	14,557	0	11	58	5	14,849
Residential	5786	7225	1275	0	5434	3807	0	23,528
Commercial and public services	278	2040	0	0	0	4131	0	6449
Non-energy use	0	252	5944	0	0	0	0	6196
Other	90	52	4894	0	0	443	0	5479

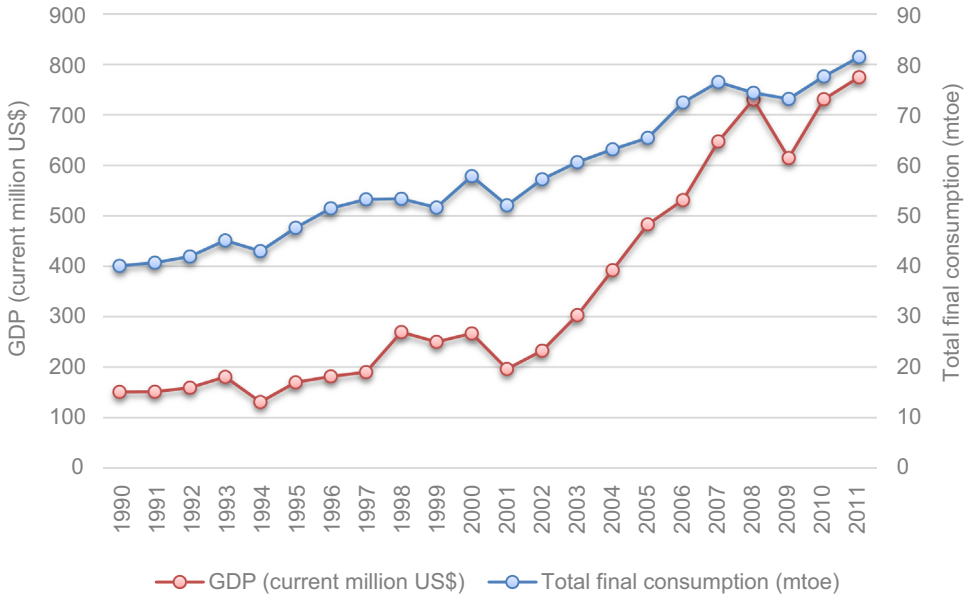

Fig. 1. Total final energy consumption and GDP in Turkey, 1990–2011.

turmoil within Turkey's neighborhood leave the economy vulnerable to destabilizing shifts in investor confidence (CIA, 2013).

Rapid population growth and economic development in the country have resulted in rapid increases in energy demand in recent years. Fig. 1 presents the development of gross domestic product and total final consumption in Turkey over 1990–2011 period (IEA, 2013b; World Bank, 2013b). As shown in Fig. 1, Turkish total final consumption has increased by an average annual growth rate of 3.6% in the last two decades while average annual growth rate of GDP was 9.7% in the same period. Turkey's per-capita energy consumption has remained low compared to EU and OECD countries. In 2011, per capita primary energy consumption was 4.1 and 4.8 toe in EU-27 and OECD countries, respectively; however this figure for Turkey was just 1.6 toe in the same year, indicating potential for further growth and need for additional investment in Turkish energy sector (EIA, 2013). Similarly, per capita electricity consumption is an indicator commonly used to measure the level of a country's economic development. Electricity consumption per capita in Turkey is below the world average. Despite increasing demand, Turkey's per capita gross consumption was still very low at 2776 kWh compared to the OECD average of 8382 in 2010 (IEA, 2012b).

The foreign trade and current account balances are among the main indicators used to assess a country's economy. The trade balance refers to the amount a country receives for the export of goods and services minus the amount it pays for its import of goods and services. On the other hand, the current account is the trade balance plus the net amount received for domestically-owned factors of production used abroad. Table 2 presents current account balance table of Turkey for 2012 (TurkStat, 2012, 2013b). In 2012, total Turkish imports amounted to $219.3 billion while total exports were $148.4 billion, resulting in approximately $65.2 billion foreign trade deficit. Since June 2011, official statistics regarding natural gas and crude oil import costs are not published by Turkish Statistical Institute (TUIK) at the request of BOTAS, the main public natural gas import company; instead, the total cost of natural gas and crude oil imports are classified as "confidential data" under the heading of "Mining and Quarrying" in Turkish current account balance tables (Milliyet, 2011). In 2012, "confidential data" item representing oil and gas imports was $39.5 billion, meaning that oil and gas imports accounted for about 18% of merchandise imports, 60.6% of trade deficit and 82.7% of current account deficit. Therefore, dependence on energy imports, persistent current