

# Case Studies from Central and Eastern Europe and the Commonwealth of Independent States

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## PETROLEUM PRODUCT SUBSIDIES

### Turkey

#### Context

Prior to reforms, the Turkish petroleum sector was dominated by state-owned vertically integrated enterprises. Before 1990, the public distribution company Petrol Ofisi and the public refining company TÜPRAŞ were subsidiaries of Türkiye Petrolleri Anonim Ortaklığı (TPAO), the public petroleum exploration and production company. At that time, the industry was governed by public decrees under which prices of petroleum products were set largely by the government.

The petroleum sector reform started in the 1980s as part of broader economy-wide reforms moving toward a market-oriented regime. The policy regime prior to these reforms involved heavy state intervention in economic activities, in particular in the form of government ownership of enterprises in critical industries, such as energy, telecommunications, petrochemicals, iron, and steel. The state also played a critical role in the allocation of financial resources, especially through state-owned banks. However, after a major balance of payments crisis in the second half of the 1970s and a military coup in 1980, Turkey was determined to transform its economy into a more market-oriented regime, through mass liberalization of domestic markets and international trade.

#### Reforms Since 1989

The petroleum sector reform aimed to achieve several objectives:

- *Improve the fiscal position of the government.* The reform would eventually eliminate petroleum subsidies, both consumer and producer subsidies.
- *Reduce the inefficiencies in the petroleum sector.* Private participation would introduce competition, improve efficiency, and limit monopoly abuse in the sector.

TABLE 9.1

Turkey: Key Macroeconomic Indicators, 2000–2011					
	2000	2003	2008	2010	2011
Nominal GDP per capita (US\$)	4146.8	4534.9	10272.4	10062.4	10521.8
Real GDP growth (percent)	6.8	5.3	0.7	9.0	8.5
Inflation (percent)	55.0	25.3	10.4	8.6	6.5
Overall fiscal balance (percent GDP)	n.a.	–10.0	–2.4	–2.7	–0.3
Public debt (percent GDP)	51.6	67.7	40.0	42.2	39.4
Current account balance (percent GDP)	–3.7	–2.5	–5.7	–6.3	–9.9
Oil imports (percent GDP)	3.6	3.8	6.6	5.2	7.0
Oil exports (percent GDP)	0.1	0.3	1.0	0.6	0.6
Oil consumption per capita (liters)	254.7	246.0	310.1	304.6	n.a.
Poverty headcount ratio at US\$1.25 per day (PPP) (percent of population)	n.a.	2.5	0.0	n.a.	n.a.
Fuel subsidies (percent GDP)	0.0	0.0	0.0	0.0	0.0

Sources: International Energy Agency; IMF, *World Economic Outlook* (WEO); World Bank, *World Development Indicators*.

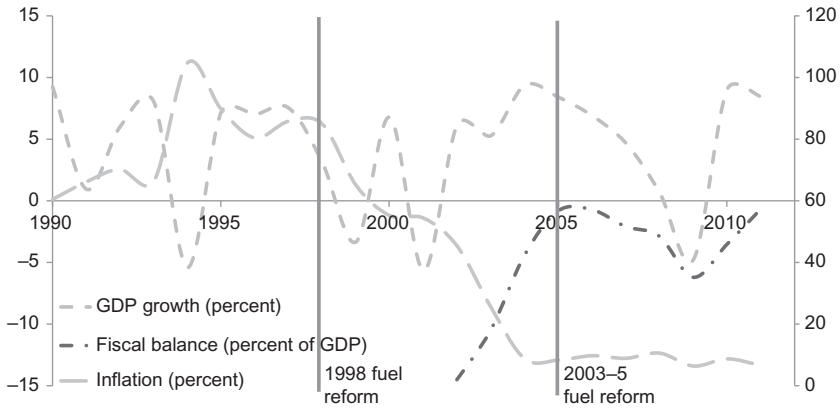
Note: n.a. = not applicable; PPP = purchasing power parity.

- *Meet the preconditions for Turkey's European Union (EU) membership.* The reform was also urged by various international institutions that provided support during several economic crises.

Turkey initiated a series of reforms that can be characterized as a long process toward full price liberalization, privatization of state-owned enterprises, and a competitive energy market.

Under a new law passed in 1989, private companies were allowed to set prices, and in 1990 public companies began to be privatized. Under the 1989 law, importers, refining companies, distribution companies, and retailers were, in theory, to be allowed to set the prices of crude oil and petroleum products. The privatization process of public refining and distribution companies started in 1990 and was fully completed in 2005. This did not, however, achieve a liberalization of prices at the time. The reason was that the government maintained control of the state-owned enterprises that dominated the petroleum product market, which in practice set the prices of petroleum products—even though a liberal price regime was adopted legally. These reforms were adopted when the government was led by the Motherland Party, a center-right nationalist party that supported restrictions on the role government could play in the economy and favored private capital and enterprise.

In 1998, the automatic pricing mechanism was adopted by the government, which set a ceiling on the prices of almost all oil products based on international petroleum prices and the exchange rate. In principle, refining companies and importers could set prices freely, provided these prices did not exceed the ceilings. However, there were still license requirements for importing and capacity requirements for storage, and these requirements presented large barriers for market entry. In practice, distribution companies and retailers were not allowed to set their prices freely; instead, prices were set by the government TÜPRAŞ, the public refining company, benefited significantly from the automatic pricing mechanism and was able to make profits. TÜPRAŞ had often incurred losses before



Sources: IEA; IMF staff estimates; IMF WEO database.

**Figure 9.1** Turkey: Macroeconomic Developments and Energy Subsidy Reforms, 1990–2011

the mechanism, because the government kept the prices of petroleum products low. The automatic pricing mechanism reform was also under the watch of the Motherland Party, whose popularity, however, had declined significantly.

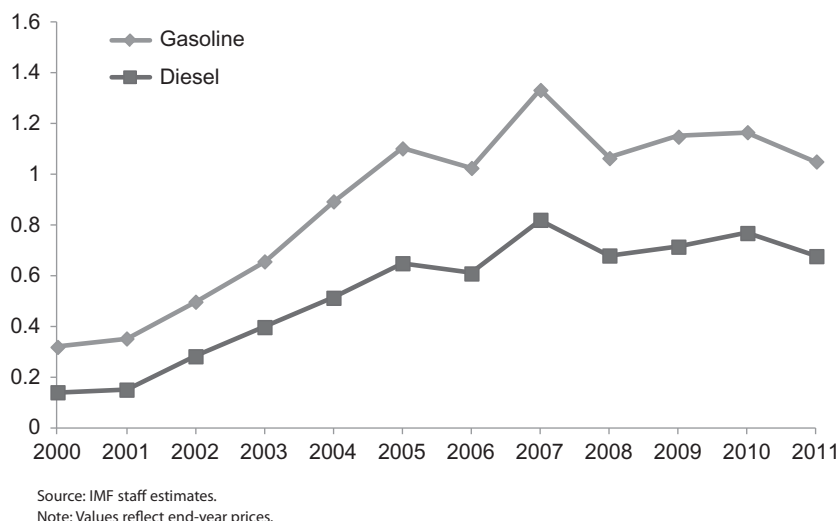
In 2003, regulatory authority over the petroleum product market moved to an independent agency. The Petroleum Market Law was passed in 2003 to achieve the institutionalization of the market economy and to comply with EU legislation and other international obligations. The law took the regulatory authority of the petroleum market from the Ministry of Energy and Natural Resources and placed it under the control of the Energy Market Regulatory Authority, an independent agency that was also the regulator of the electricity market at the time. Under the Petroleum Market Law, government control of the petroleum market, such as through license requirements and importation limits, was loosened. The privatization of state-owned enterprises was also accelerated under the law and was completed by 2005.

The most important impact of the Petroleum Market Law was the full liberalization of fuel prices, which came into effect in 2005 (Figure 9.1). Since then, fuel prices have been set by the market. Turkish gasoline and diesel prices are now among the highest in the Organisation for Economic Co-operation and Development, owing to the relatively high excise taxes that are reflected at the level of retail prices (Figure 9.2) (IEA, 2010).

The 2003 and 2005 reforms were introduced when the Justice and Development Party was in power. The Justice and Development Party is a center-right conservative party that came to power in 2002 by a landslide victory and has since maintained a strong majority in the parliament.

### *Mitigating Measures*

In addition to the existing social safety net programs, several targeted measures were taken to mitigate the impacts of reforms:



**Figure 9.2** Turkey: Gasoline and Diesel Net Tax, 2000–2011 (U.S. dollars per liter)

- Tax exemption for liquefied petroleum gas (LPG) consumption.* Between 1999 and 2001, the government supported the use of LPG by households for cooking purposes by forgoing both value added tax (VAT) and the special consumption tax. These tax exemptions resulted in the price of LPG being below that of both gasoline and diesel. As regular motor engines cannot use LPG, the government expected the fuel's use in cars to remain limited. However, an underground industry soon developed to make gasoline and diesel engines compatible with LPG. With a payback period of less than two years, the operation proved sufficiently simple and cheap for drivers to convert their vehicles to LPG use. Alerted by the resulting loss of tax revenue, the government began to phase out this tax expenditure at the end of 2000. This provision resulted in significant increases in LPG consumption.
- Tax exemption for public transportation.* According to the New Turkish Corporate Tax Law passed in 2006, public transport companies owned and managed by municipalities, villages, or special provincial administrations are exempt from VAT and excise tax.
- Rebate for diesel used in agriculture.* In Turkey, the tax rate on diesel fuel is very high, thereby affecting the real income of farmers. A rebate program was introduced by the Ministry of Agriculture in 2007 to help farmers grow specific crops. There are three different types of crops defined by the ministry, which correspond to different aid levels. The amounts of aid are calculated according to the area of the land used in growing specified crops and paid according to a schedule defined by the cabinet. There are no restrictions on how grant money is spent. The measure is to be phased out.

## Lessons

Broad support for and firm commitment to market reform was key to the success of subsidy reforms in Turkey. Turkey started a more liberalized regime for energy pricing in the late 1980s and early 1990s and sustained these reforms under the administration of various political parties. Aided by economy-wide reforms to enter the EU, energy sector reforms have received broad support with little setback. Because of this, only very limited mitigating measures were adopted and the popularity of government did not appear to have a large bearing on the success of energy reforms.

Improving economic conditions also helped advance reforms. In the past two decades, the Turkish economy has grown steadily; inflation has been lowered substantially; and the overall fiscal balance has also been improving. The short-term impact of energy reforms on household welfare has been limited because of relatively high household income. This assured the public that the country was moving in the right direction and prevented any setback to reforms from occurring.

Independent agencies for energy policy can help steer technical decisions away from politics. Under the Petroleum Market Law, an independent agency, the Energy Market Regulatory Authority, was responsible for implementing the laws and regulating the petroleum sector. This took the technical decisions on pricing and market regulation out of the hands of politicians and ensured the stability and consistency of reforms.

## ELECTRICITY SUBSIDIES

### Armenia

#### Context

In the early 1990s, Armenia began the transition to a market-based economy with a financially weak electricity sector. The industry was dominated by a vertically integrated and monopolistic power company and characterized by heavily subsidized

**TABLE 9.2**

**Armenia: Key Macroeconomic Indicators, 2000–2011**

	2000	2003	2008	2010	2011
Nominal GDP per capita (US\$)	593.5	874.1	3,605.9	2,840.4	3,032.8
Real GDP growth (percent)	5.9	14.1	6.9	2.1	4.4
Inflation (percent)	−0.8	4.7	9.0	7.3	7.7
Overall fiscal balance (percent GDP)	−6.3	−1.5	−1.8	−4.9	−2.7
Public debt (percent GDP)	48.9	32.9	14.6	33.3	35.1
Current account balance (percent GDP)	−14.6	−6.8	−11.8	−14.7	−12.3
Oil imports (percent GDP)	0.1	0.1	0.4	0.3	0.3
Oil exports (percent GDP)	0.0	0.0	0.0	0.0	0.0
Oil consumption per capita (liters)	133.7	139.3	159.5	127.6	n.a.
Poverty headcount ratio at US\$1.25 per day (PPP) (percent of population)	n.a.	10.6	1.3	n.a.	n.a.

Sources: IEA; IMF, WEO; World Bank, *World Development Indicators*.

retail prices. The sector was largely dependent on fuel imports from other countries of the former Soviet Union. The collapse of the former Soviet Union and the conflict with neighboring Azerbaijan led to severe disruptions in oil supply. Electric generation declined by almost 50 percent in 1990–95, resulting in chronic power shortages.

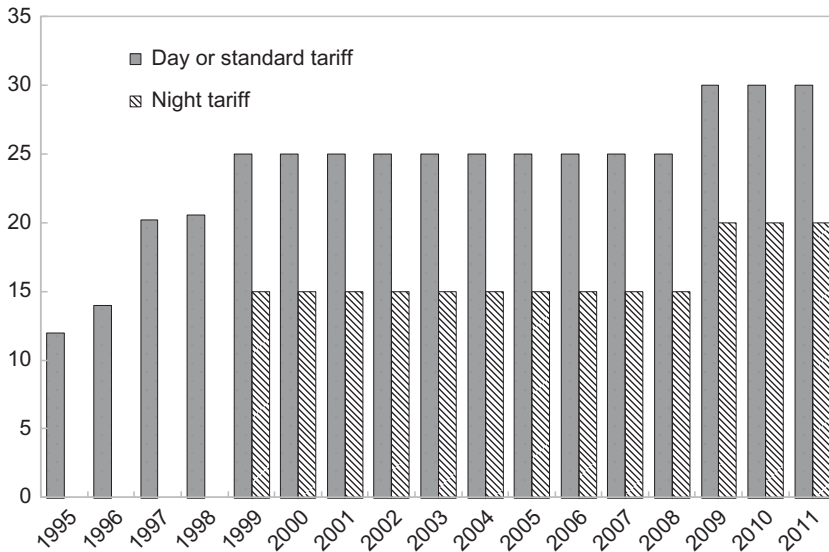
Fiscal and quasi-fiscal subsidies were large and unsustainable. After the transition to a market economy, the power generation mix shifted from oil to hydro-power. Despite the fact that the latter is a cheaper source of electricity production, electricity subsidies remained very large, amounting to about 11 percent of GDP in 1995. There were various forms of subsidies:

- *Implicit consumer subsidies owing to low retail prices.* Prices were set below levels needed to cover operating costs and capital depreciation. Because there were no transfers from the budget to cover these costs, the electricity companies financed them by accumulating debt with the banking system. Electricity tariffs for households included a cross-subsidy from other energy users (companies and the public sector), which were among the largest non-payers of electricity bills.
- *Power theft and low collection rates.* These can be considered as subsidies because they lower the effective tariff rates paid by customers. It was estimated that 40 percent of electricity bills were uncollected in 1996, with the biggest nonpayers including other government-owned utility companies in water and heating.
- *Explicit budget support.* Although there were no direct subsidies for the Armenian power sector, state support was substantial in the form of loans made directly from the budget, which equaled, for example, 0.2 percent of GDP in 1996. In addition, the sector benefited from loan guarantees. Unpaid taxes were another source of support, equaling about 1.5 percent of GDP in 1996.

### *Reforms Since the Mid-1990s*

Electricity prices rose sharply in the years 1995–99 toward cost-recovery levels, effectively eliminating the bulk of the subsidies. Residential tariffs more than doubled over 1995–99 to reach 25AMD per kWh, a level considered close to cost recovery (Figure 9.3) and consistent with the levels of tariffs charged to nonresidential users, considerably reducing cross-subsidies. Efficiency gains from the electricity sector reforms have helped reduce the fiscal burden of the sector in spite of a long period of unchanged prices since 1999. In 2009, retail prices were raised by 20 percent following an increase in the price of gas supplied by Russia.

Changes in both the level and structure of tariff increases were the centerpiece of the reforms. The tariff structure changed with the removal of the lifeline tariff in 1999. Although meant in principle to help protect low-income households by providing lower rates for low levels of consumption, the lifetime tariff was subject to abuse. In particular, households and meter readers colluded to delay the reporting of high winter consumption levels. A year earlier, discounted tariffs for low-



Source: National authorities.

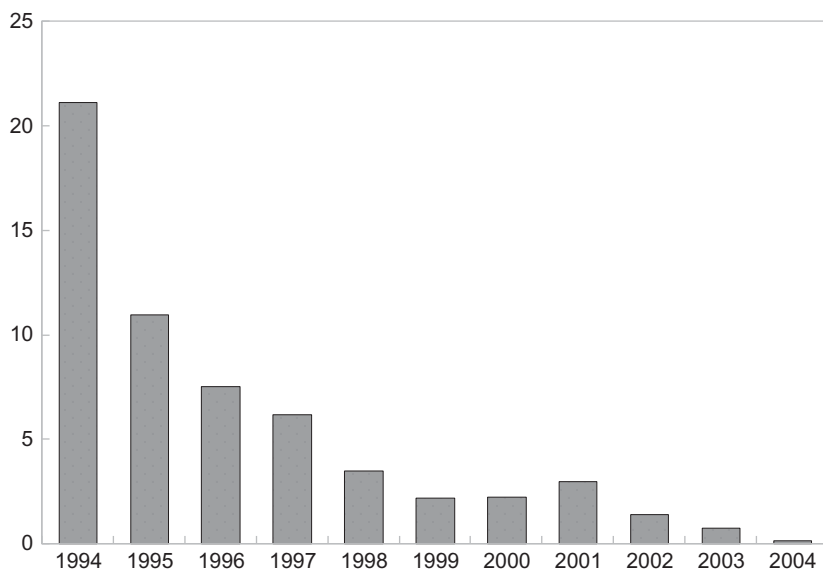
**Figure 9.3** Armenia: Residential Electricity Tariffs, 1995–2011 (Armenian drams per kWh)

income consumers, electricity company employees, and military personnel were withdrawn, following an overhaul of the social protection system to better target it to the poor. Price reforms contributed to reducing the deficit of the electricity sector from about 21 percent of GDP in 1994 to less than 3 percent of GDP in 2000 (Figure 9.4).

Efforts to improve collection rates also reduced the commercial losses of electricity companies. Meters were transferred from residential premises to communal hallways to prevent misreporting and tampering (Velody, Cain, and Philips, 2003). Meter readers were no longer allowed to collect cash, reducing the risks of corruption. Bill payments started to be collected through banks and post offices. Strict enforcement of disconnection policies has also led to an improvement in collection rates.

A public awareness campaign helped mobilize support for strengthening collections. The authorities emphasized that bill payments would help solve the problem of frequent power cuts and limited power availability (Velody, Cain, and Philips, 2003). The increase in collection rates was impressive, rising from 40 percent in 1996 to almost 100 percent by 2003, although it weakened temporarily in 1999 on account of the sharp increase in tariffs (Figure 9.5).

Tariff reforms were complemented by institutional reforms, paving the way for private sector participation. Private sector participation brought some efficiency gains, with system losses in percent of gross supply declining from 30 percent in 1999 to 10 percent in 2010. The authorities also established an independent regulator in 1997, with the mandate to set up and review electricity tariffs and regulate



Source: Sargsyan, Balabanyan, and Hankinson (2006).

**Figure 9.4** Armenia: Electricity Sector Financial Deficit, 1994–2004 (Percent of GDP)

the sector. The law empowers the regulator to ensure that tariffs fully cover medium-term costs, including depreciation, debt service, and other capital costs.

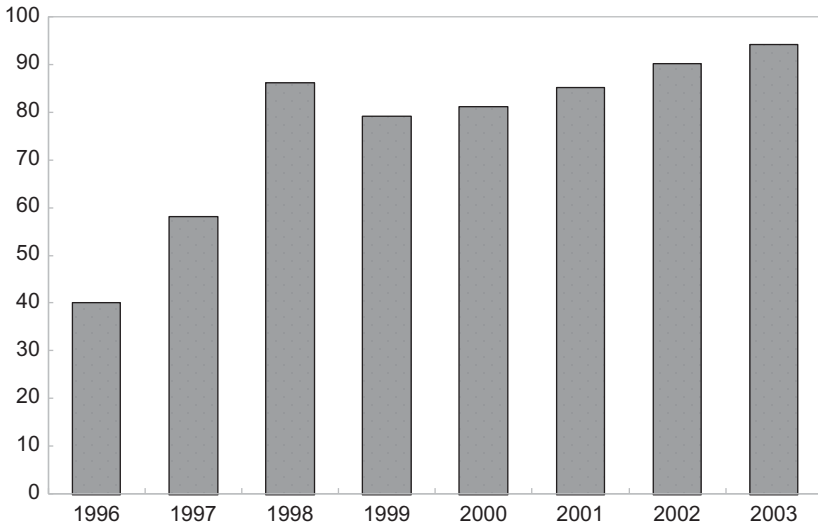
Strong political will and donor assistance supported subsidy reforms. According to Sargsyan, Balabanyan, and Hankinson (2006), political will was crucial for the initial impetus toward power sector reform and for the success of the privatization process. Despite the initial failed tender for privatizing the distribution system, the authorities learned from their early setbacks and persisted in their reform efforts, while also addressing weaknesses in the legal and regulatory framework. Further, the electricity price increase took place before privatization, demonstrating the authorities' commitment to reforms. Equally important was the fact that the government kept its commitments after privatization, notably by not backing down from the strict application of disconnection policies, even though some public organizations and ministries were affected. Finally, donors, including the IMF, the World Bank, and the United States Agency for International Development, provided significant support to the reform agenda, mainly through conditional loans and technical assistance.

### *Impact of the Reforms*

The reform of the electricity sector contributed to fiscal adjustment. The fiscal deficit declined sharply—from 16.5 percent of GDP in 1994 to 9 percent of GDP in 1995 and further to 6.3 percent by 2000 (Figure 9.6).

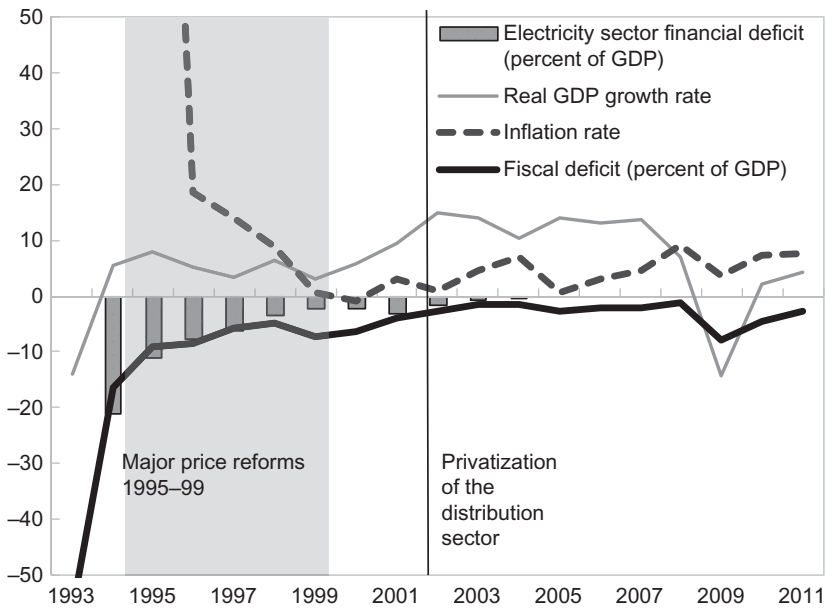
The impact of electricity price increases on inflation was mitigated by successful macroeconomic stabilization. The pre-reform period (1993–94) was characterized





Source: Nixon and Walters (2005).

**Figure 9.5** Armenia: Electricity Bill Collection Rate, 1996–2003 (Percent)



Sources: IEA; Sargsyan, Balabanyan, and Hankinson (2006); World Bank, *World Development Indicators*.

**Figure 9.6** Armenia: Macroeconomic Developments and Electricity Subsidy Reforms, 1993–2011

by very high government deficits financed largely by the central bank. As a result, hyperinflation ensued. Successful macroeconomic stabilization resulted in a decline in inflation from over 5,000 percent in 1994 to single digits by 1998, reflecting monetary policy tightening and a sharp fiscal consolidation.

Sound macroeconomic policies and structural reforms were effective in facilitating growth, which averaged about 5.5 percent during 1995–99. It is difficult to disentangle the impact of the subsidy reform on growth from that of other macroeconomic policies and structural reforms, but it is likely that the electricity sector reform facilitated growth by improving power reliability and boosting electricity production.

### *Mitigating Measures*

Offsetting measures were needed in light of the high share of the poor's expenditure on electricity. The 1999–2000 household survey showed that the share of electricity spending in household spending was almost twice as high in poor households as in nonpoor households (Table 9.3). This was especially the case among the urban poor. The following were the measures instituted:

- *Social safety net.* Tariff reforms coincided with an overhaul of the social safety nets, marked by the introduction of a cash transfer program, the Poverty Family Benefit. In 1999, the government replaced child and family allowances by a cash transfer program, the Poverty Family Benefit, which in contrast to the previous safety net program, is means tested. The program was not specifically targeted to offset the effect of higher electricity prices, but it has helped beneficiaries maintain real consumption in the face of higher electricity bills. The design of the benefit, however, helped increase the collection rate and improved energy efficiency, as the benefit is withdrawn if a household overconsumes and does not pay its electricity bill. The Poverty Family Benefit is considered a relatively well targeted program. It covered 25 percent of households initially, but coverage gradually declined to 18 percent in 2010 as eligibility criteria were tightened. This allowed an increase in the average payment by 40 percent in real terms between 2006, while maintaining the cost of the program at around 1 percent of GDP.
- *Cash transfers.* In addition, two one-off cash transfers were made to low-income households in 1999–2000 to help them cope with higher electricity prices. Beneficiaries included eligible households under the Poverty Family Benefit program and other households considered to have difficulties paying their bills.
- *Dual-rate meters.* A small-scale government program was started in 1999 to provide dual-rate electricity meters for low-income households. The use of dual-rate meters allowed households to benefit from discounted night tariffs and removed the need for energy suppliers to use high-cost generators during peak times of use.

**TABLE 9.3**

Armenia: Electricity Share in Total Household Spending ( <i>Percent</i> )		
	Rural	Urban
Poor	13	16
Nonpoor	7	9

Source: Lampietti and others (2011).

## Lessons

Strong political will is important for reform to succeed. The government was persistent in its efforts to achieve successful privatization and undertook politically costly tariff reforms. Although donors also played a role, their best efforts would have proven ineffective if government officials had not committed fully to the reforms (Sargsyan, Balabanyan, and Hankinson, 2006).

A good regulatory environment that limits interference in setting tariffs can facilitate reform. A proper legal framework for private sector participation was put in place, and an independent regulatory commission was created to determine tariffs.

Measures to improve collections are essential. Strict enforcement of disconnection policies and collection schemes (e.g., through bank accounts) that limit the risk of collusion between consumers and meter readers can increase collection rates.

An effective public awareness campaign linking payments of utility bills to more reliable service helps garner support for reform.

Implementation of mitigating measures for the poor helps fortify support for reform. A means-tested cash transfer program was introduced, improving the targeting of social safety nets. Additionally, two one-off cash payments and the provision of dual meters for low-income households helped soften the impact of electricity price increases on the poor, thereby facilitating public acceptance of the reforms. In the case of Armenia, there were useful synergies between the simultaneous reforms of the social protection system and the energy sector.

## Turkey

### Context

The Turkish electricity sector was dominated by a state-owned vertically integrated company prior to the reform. The Turkish Electricity Authority (TEK) was in control of generation, transmission, and distribution. TEK was later restructured into two separate state-owned companies, the Turkish Electricity Generation and Transmission Company (TEAS) and the Turkish Electricity Distribution Company (TEDAS).

The electricity sector reform started as part of the economy-wide reforms toward a market-oriented regime in the 1980s. The policy regime prior to these reforms was featured by heavy involvement of the state in economic activities, in

particular in the form of government ownership of enterprises in critical industries, such as energy, telecommunications, petrochemicals, iron, and steel. The state also played a critical role in the allocation of financial resources, especially through state-owned banks. However, after a major balance of payments crisis in the second half of the 1970s and a military coup in 1980, Turkey was determined to transform its economy into a more market-oriented regime, through mass liberalization of domestic markets and international trade.

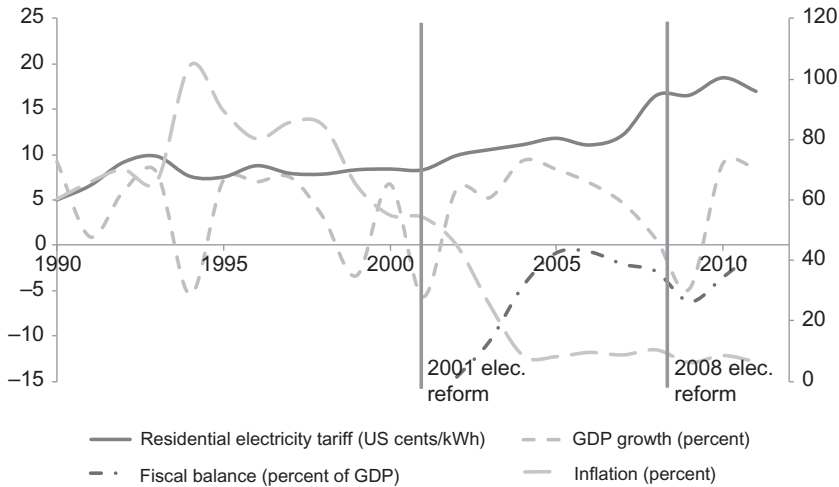
### *Reforms Since 1984*

The electricity sector reform was set to achieve several objectives:

- *To better meet the growing electricity demand and to improve the fiscal position of the government.* The reform would eventually eliminate electricity subsidies, both consumer and producer subsidies. In addition, it was apparent that the government did not have the fiscal capacity to finance the expansions necessary to meet the future electricity demand.
- *To reduce the inefficiency in the electricity sector.* Private participation would introduce competition, improve efficiency, and limit monopoly abuse in the sector.
- *To meet the preconditions for Turkey's EU membership.* The reform had also been urged by various international institutions, which provided support during several economic crises.

Turkey has taken a series of steps to reform its electricity sector, with the goal to attract investment, encourage competition, and improve efficiency. The first law setting up a framework for private participation came into effect in 1984. The unbundling of the Turkish public electricity sector started in 1993. However, progress had been slow, with the public sector remaining dominant. An important attempt to privatize through sale of ownership rights in 1994 was struck down by the Constitutional Court. The privatization was able to resume only after an amendment to the Constitution in 1999. Instead, attempts to engage the private sector took the form of designing investment schemes such as build–operate–transfer, build–operate, and transfer-of-operating-rights contracts. These schemes, however, do not appear to have led to the development of competitive electricity markets in Turkey as these contracts locked generation companies into long-term exclusive sale agreements with predetermined prices and did not provide sufficient incentives for efficiency (Atiyas and Dutz, 2012).

By the end of the 1990s, the rapidly deteriorating fiscal stance led to pressures for a more ambitious privatization program, including in the electricity sector. In 2001, Turkey initiated a comprehensive electricity reform program by enacting its Electricity Market Law. The goal was to establish a competitive electricity market so as to increase private investment, improve efficiency, and ultimately strengthen Turkey's energy security while meeting the rapidly growing electricity demand. The state-owned enterprises were further unbundled into different business activities, including generation, transmission, distribution, and wholesale and retail



Sources: IEA; IMF staff estimates; IMF, WEO database.

**Figure 9.7** Turkey: Macroeconomic Developments and Energy Subsidy Reforms, 1990–2010

supply. In 2006, a wholesale electricity market was also introduced to spur competition and improve efficiency.

Between 2002 and 2007, tariffs remained unchanged as demand rose. Despite the progress in restructuring the electricity sector, the tariffs for electricity remained unchanged between 2002 and 2007, although the prices of inputs had increased significantly. This disconnection between price and cost resulted in limited funding available for the maintenance of existing infrastructure and for new investment. In addition, the low electricity tariff contributed to the rapid rise in demand during this period.

To address these problems, the government started moving gradually to full cost recovery in the electricity sector in 2008. In January, electricity prices were increased by 20 percent from the fixed level in previous years. In March, the government approved a cost-based pricing mechanism that enables automatic quarterly tariff adjustments to cover the changes in the cost of supply. The new pricing mechanism became effective in July 2008 and resulted in several price increases by the end of 2009 (Figure 9.7). Although the electricity price increased more than 50 percent during this period, the impact on household welfare appears to have been limited because electricity consumption has accounted for only a relatively small share of the total household budget (Zhang, 2011).

### *Mitigating Measures*

Turkey did not implement specific mitigating measures for the reform. It relied primarily on its social safety net to address the adverse impacts of electricity subsidy reforms on the poor.

## Lessons

Broad support for and firm commitment to the market approach has been the key to progress of reform in the electricity sector in Turkey. The electricity sector reform started in the 1980s and has made significant progress despite several obstacles.

Improving economic conditions also helped advance reforms. A growing economy and improving standards of living assured the public that the country was moving in the right direction and helped move the reform forward.

Independent agencies for energy policy can help steer technical decisions away from politics. Under the Electricity Market Law, the Electricity Regulatory Market Authority (EMRA), the independent agency in charge of the petroleum sector, was also responsible for implementing the electricity market laws and regulating the electricity sector.

## COAL SUBSIDIES

### Poland

#### *Context*

In the pretransition era, coal mines were state owned and posed a substantial burden on the public finances. Coal mining was one of Poland's largest industries and employers, characterized by excess capacity and overemployment, which contributed—along with controlled prices—to operational deficits. The importance given to the coal mining industry, especially in the pretransition era, made the mining sector and its employees an economically and politically powerful lobby. This was also reflected in special privileges granted to coal sector employees, including free coal. Although there is no hard evidence available on the fiscal cost of maintaining the coal mining sector during the central planning period, data from the early transition period show that the sector ran operational deficits and had accumulated substantial debts.

#### *Reforms Since 1990*

In the 1990s, Poland started transforming its large and inefficient coal industry as part of the economic transition process. The government made several attempts to reform the sector with the aim to (1) close unprofitable mines; (2) reduce employment levels to improve labor productivity; (3) eliminate the sector's overcapacity; and (4) make the mining sector profitable, with the ultimate objective of privatizing mining companies. In a first restructuring program, which ran from 1990 through 1998, coal mines were transformed into state-owned enterprises (SOEs) and the SOEs were consolidated into seven coal companies.

However, these early attempts of reform showed only limited results in terms of reducing capacity, employment, and fiscal costs. This was mainly due to incomplete implementation of the reform agenda and resistance from unions to proposed wage cuts and reductions in employment. More specifically, the coal

TABLE 9.4

## Poland: Key Macroeconomic Indicators, 1990–2011

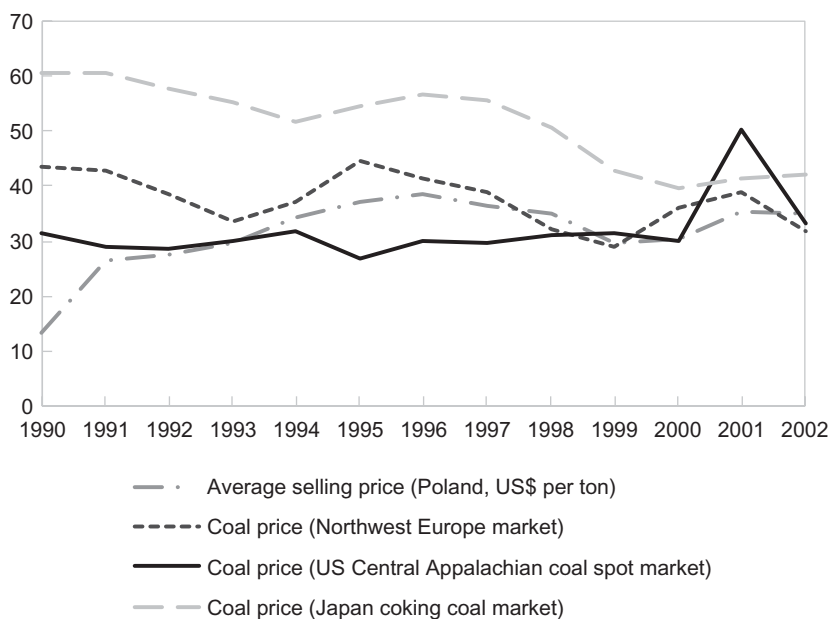
	1990	1992	1994	1996	1998	2000	2003	2008	2010	2011
GDP per capita (US\$)	1544.0	3149.1	6105.4	4056.0	4494.3	4477.7	5678.3	13876.3	12285.7	13539.8
GDP growth (percent)	−7.2	2.0	5.2	6.2	5.0	4.3	3.9	5.1	3.9	4.3
Inflation (percent)	585.8	43.0	32.2	19.9	11.8	10.1	0.8	4.2	2.5	4.3
Overall fiscal balance (GFS2001, percent of GDP)	n.a.	n.a.	n.a.	−4.9	−4.3	−3.0	−6.2	−3.7	−7.8	−5.2
Overall fiscal balance (GFS1986, percent of GDP)	0.0	−6.7	−2.9	−3.1	−2.5	−3.3	−5.6	−3.1	n.a.	n.a.
Public debt (GFS2001, percent of GDP)	n.a.	n.a.	n.a.	43.4	38.9	36.8	47.1	47.1	54.9	55.4
Public debt (GFS1986, percent of GDP)	90.1	82.4	64.6	42.4	36.7	37.7	48.4	47.0	n.a.	n.a.
Current account balance (percent of GDP)	1.9	1.0	5.3	−2.1	−4.0	−6.0	−2.5	−6.6	−4.7	−4.3
Oil imports (percent of GDP)	2.6	2.5	1.2	1.7	1.1	2.4	2.0	3.6	3.5	4.4
Oil exports (percent of GDP)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Oil consumption per capita (liters)	n.a.	n.a.	n.a.	n.a.	n.a.	407.6	401.5	530.0	470.7	n.a.
Coal production (million tons oil equivalent)	94.5	89.2	89.3	94.5	79.6	71.3	71.4	60.5	55.5	56.6
Coal consumption (million tons oil equivalent)	80.2	73.0	72.3	73.2	63.8	57.6	57.7	56.0	56.4	59.8
Coal price (Northwest Europe market in US\$ per ton)	43.5	38.5	37.2	41.3	32.0	36.0	43.6	147.7	92.5	121.5
Poverty headcount ratio at US\$1.25 per day (PPP) (percent of population)	n.a.	0.0	n.a.	1.4	0.1	0.1	n.a.	0.1	n.a.	n.a.

Sources: BP (2012); IMF, WEO database.

Note: GFS = Government Finance Statistics.

market was only gradually liberalized—allowing prices to increase to international levels by the mid-2000s (see Figure 9.8), limiting the opportunity for income growth for those mines that could have had viable operations under free-market conditions. In addition, the government provided insufficient resources to finance mine closures and social programs. As a result, the sector's debt level almost tripled between 1990 and 1998, amounting to US\$5.6 billion (over 3 percent of GDP), despite significant transfers from the government and local authorities.

Only the new hard coal reform program, started in 1998, resulted in an effective restructuring of the Polish coal mining industry. The 1998–2002 hard coal reform—which fell into a less favorable economic situation than the previous reform attempt as GDP growth was on a downward trend and fiscal deficits increased (see Figure 9.9)—and several subsequent plans provided additional funding for social schemes and expressed a commitment to write off the debt that the mines had accumulated over past years. Under these plans, 21 uneconomic mines were closed, about 100,000 workers left the sector (Table 9.5), and about 70 percent of the coal mining industry's liabilities was written off—contributing to the 2003 spike in the fiscal deficit. The substantial reduction in employment and capacity allowed reducing production costs (see Figure 9.10), and the debt



Sources: Blaschke and Lorenz (2004); BP (2012).

**Figure 9.8** Poland: Coal Prices in Poland and Selected International Markets, 1990–2002 (U.S. dollars per ton)

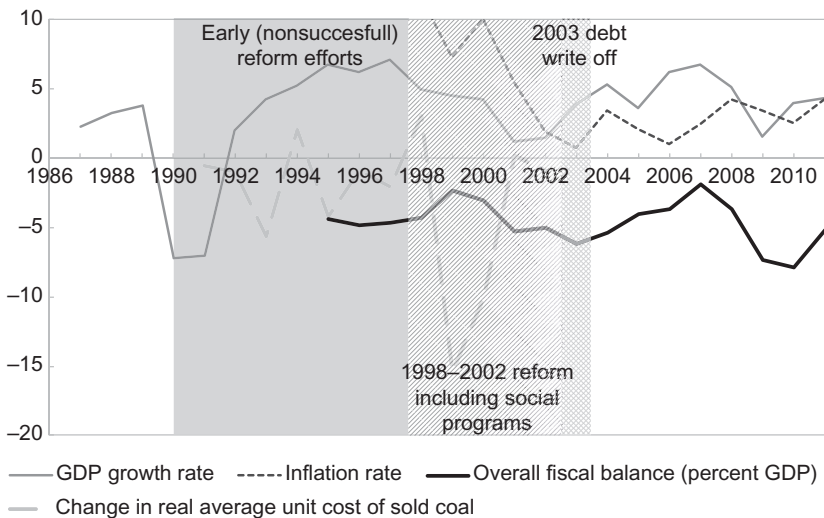


reduction gave the industry the necessary financial freedom. Consequently, the sector has been profitable from 2003 onward, and a first privatization took place in 2009. With more decisive action from the government, closer cooperation with unions, and supporting programs from the European Development Bank and the World Bank, Poland's coal mining sector was transformed into a commercially viable industry. Today the Polish coal mining sector comprises 31 mines grouped into seven joint-stock holding companies and is dominated by three state-owned companies.

### Mitigating Measures

The 1998 reform program was supported by social and labor market programs.

- *Social program.* The social program provided welfare benefits to dismissed workers while they transitioned into retirement or into new jobs. Under the social program of 1998–2002, more than 53,000 workers left coal mining, of which 33,000 received some form of help.
- *Labor market program.* The labor market program intended to redeploy especially younger coal workers elsewhere in the economy. It included soft loans for the establishment of businesses and services provided from newly established employment agencies, which offered training and other support to ease the transfer to other sectors.



Sources: BP (2012); IMF, WEO.

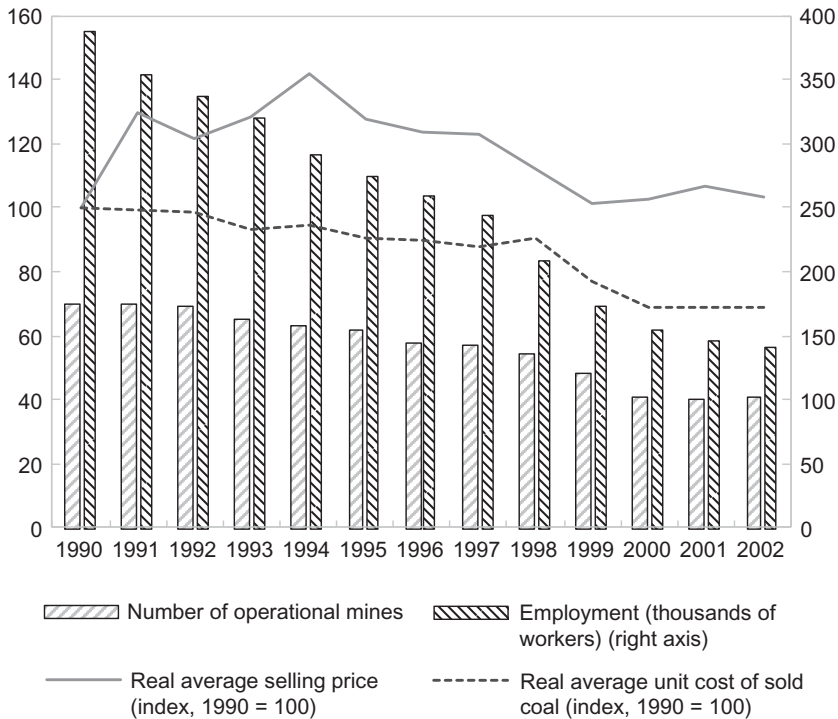
**Figure 9.9** Poland: Macroeconomic Developments and Coal Sector Reforms, 1987–2010 (Percent of GDP or Rate)

**TABLE 9.5****Poland: Selected Indicators of Coal Mining Industry, 1990–2006**

	1990	1992	1994	1996	1998	2000	2002	2004	2006
Number of operating mines	70	69	63	58	54	41	41	36	33
Production level (Mmt)	147	132	133	136	116	102	102	99	94
Employment (1,000 persons)	388	336	292	259	208	155	141	127	119
Productivity (mt per person)	380	392	454	526	558	659	725	780	790
Average coal price (US\$ per mt)	37	45	52	45	41	38	38	53	57
Average coal production cost (US\$ per mt)	54	53	51	48	49	37	37	44	55
Income (US\$ million)	8,848	6,347	6,722	6,933	6,148	5,619	5,477	6,473	6,222
Production costs (US\$ million)	8,104	7,237	7,233	7,731	7,760	6,107	5,634	5,568	6,025
Operating profit (US\$ million)	744	–890	40	–798	–1,612	–488	–157	850	235
Net financial profit (US\$ million)	–121	–1,497	–128	–777	–1,445	–504	–162	734	126
Debt (US\$ million)	1,879	3,558	4,490	4,293	5,585	6,232	6,066	2,335	2,130
Total payments from government and local authorities (US\$ million)	610	1,036	1,872	1,103	1,118	752	693	595	493

Source: Suwala (2010).

Note: Mmt = million metric tons; mt = metric ton.



Sources: Blaschke and Lorenz (2004); BP (2012).

**Figure 9.10** Poland: Indicators for the Coal Sector Reform, 1990–2002

### Lessons

Reforms need political commitment and might also need some financial resources to complete. Not providing either or both of these might lead to a costly prolongation or even worsening of the drain of fiscal resources. When Poland made the first attempt to reform the coal mining sector, the government did not demonstrate full commitment to implementing the reforms, and it did not provide adequate funding for social programs. As a consequence, the reforms dragged on, and the sector continued running deficits and accumulating debt. The reform would have been less costly if it had been fully implemented from the beginning.

When reforming subsidies of nationally important industry, reforms need to cover all aspects of the industry, including product and labor markets. Coal mines in Poland could not become profitable until the coal market was liberalized and prices were able to adjust in line with international price fluctuations. In addition, preferential employment conditions in the coal mining sector made it difficult to motivate employees to leave the sector voluntarily. Converting the publicly owned coal mines into stock companies that are managed according to business interests also leads to an adjustment of employment conditions. Together with the implementation of a social safety net for the sector's employees, this allowed for

an increase in the mobility of the labor force and increased workers' willingness to move to other sectors.

Reforms that come with substantial employment losses in major industries have to be designed in cooperation with unions and need to be supported by appropriate social and labor market programs. In Poland, the first mining sector reform attempts were not successful because they did not provide adequate support for the miners, who were most affected by the reforms and who had a strong lobby. The mitigating measures designed in cooperation with the unions and included in subsequent reform plans broke the resistance of the miners to the restructuring. The case of Poland's coal industry demonstrated that the role of unions in the reform process and the magnitude of the required social and labor market programs are especially important for an industry that (1) is a major employer for the economy and the absolutely dominant employer in some regions and (2) has employees with very specialized skills that are of very limited use outside the industry.

The assumption of social liabilities and accumulated debt can be instrumental to successful subsidy reforms, especially when the sector needs to be modernized. To become profitable under market conditions, the Polish coal mining industry needed to be transformed from an oversized and inefficient energy provider for a centrally planned economy into an internationally competitive lean and modern industry. Given the substantial financial burden from the past—from the rehabilitation of old mines as well as from obligations toward the sector's employees—the sector could not have survived the reform without financial support from the government. The assumption of past liabilities, as well as substantial support for transition costs, allowed the industry to move toward profitability and to eventually be weaned from public support.