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# SUBSIDY REFORMS IN THE MIDDLE EAST AND NORTH AFRICA REGION

A REVIEW

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## ABSTRACT

The paper takes stock of eight country studies and a cross-country analysis to review the experience with subsidy reforms in the Middle East and North Africa region between 2010 and 2014. This unprecedented period of subsidy reforms occurred during a period of extraordinary political changes, which makes this particular experience unique. The paper reviews the facts and the different paths to reforms taken by different countries faced with different challenges, and discusses the pros and cons of alternative policy options. It concludes with an assessment of the experiences and a discussion on future prospects.

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# **Subsidy Reforms in the Middle East and North Africa Region: A Review**

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**JEL:** H2, H7, N7, O13, Q1, Q4

**Keywords:** North Africa, Middle East, Energy Subsidies, Food Subsidies.

## Introduction

Between 2010 and 2014, the Middle East and North Africa (MENA) region, experienced an extraordinary wave of energy and food subsidy reforms. These reforms did not achieve the objective of removing subsidies completely—far from it, but they were extraordinary in two important respects. They were unprecedented because no other period in the history of the region had seen such a wave of subsidy reforms and because they occurred during an extremely complex period from a social and political perspective—a period of war, revolutions, and social upheavals.

What triggered the reforms? Who reformed, when, how, and why? What are the pros and cons of reforms? These are some of the questions we discuss in this paper. Using the information contained in a cross-country comparative analysis and eight country case studies (Verme and Araar, 2016), this paper summarizes events and reflects on some of the choices made by policy makers and emerging (although still unfolding) lessons. A brief history of subsidies will show how their evolution followed a similar pattern across the countries of the region, a pattern mainly guided by oil prices and shifts in the dominant political views of the time. We then ask what triggered the reforms and try to pinpoint the key factors that eventually forced governments to take action on reforms. Next is a summary of the essential elements of the subsidy reforms in those countries that implemented reforms between 2010 and 2014. Last is a discussion of reforms and the challenges that remain in completing the reforms.

## A Brief History of Subsidies

Consumer subsidies are part of the history of the MENA region. In some countries, subsidies were already present during the colonial period and were part of the colonial heritage when countries became independent. Each case study in Verme and Araar (2016) briefly reviews the origin and evolution of subsidies during the post-independence period, and this section reviews some of the salient features of this history.

Consumer subsidies have evolved to serve different purposes depending on the country considered and the historical period. Most of the consumer subsidy systems as we know them today were introduced in the MENA region between the 1940s and 1970s. Price stabilization was the initial motivation for these subsidies. As countries emerged first from World War II and then from the colonial struggles, one of their main concerns was price instability and rising prices on

basic consumer goods. This situation encouraged several governments to experiment with price stabilization mechanisms whereby price increases and decreases would be mitigated via a price adjustment mechanism designed to keep price variations contained within established margins. The initial idea was not to subsidize products, but to contain price fluctuations. In the francophone countries of the Maghreb these mechanisms became known as *caisses de compensation* (compensation fund) precisely to underline their stabilization role as opposed to a subsidy role.

Some of these *caisses de compensation*, such as the one established in Morocco during World War II, maintained financial stability for a fairly long time, while other similar experiments incurred financial constraints early on. All these stabilization mechanisms eventually turned into subsidy systems. The reasons are multiple, but three factors are sufficient to explain the incapacity of these stabilization mechanisms to maintain financial rigor. The first is that nominal prices tend to increase in the long term, so that periods when the stabilization mechanism earned an income were few. The second is that it is politically convenient for a government to keep prices fixed when international prices rise but much harder politically to keep domestic prices high when international prices decrease. There is a behavioral asymmetry here explained by politics and subsidies progressively became a political instrument to buy political consensus. The third factor is related to the businesses and the interest groups that are generated by the very existence of subsidies and that become with time an obstacle to reforms.

As price stabilization mechanisms turned into subsidy systems, the rationale for these subsidies also started to change into a system of social protection. This change coincided with the turning of the MENA region toward socialism and the revolutions that put dictators into power between the 1950s and the 1970s. As the political and economic systems became more centralized, subsidies became instrumental in supporting the regimes. After Muammar Gaddafi's revolution, Libya quickly introduced in 1971 a national institution to oversee the prices of basic commodities, which contributed to the expansion of subsidies across food and energy items and which became one of the main instruments of the regime to quell discontent. But subsidies fitted well with all other types of regimes in the region, whether they were monarchies, democracies, pseudodemocracies, or dictatorships. During this period, the state takes a paternalistic role with a mix of socialist and Islamic ideology that sees subsidies as a form of social protection.

Populations start to see subsidies as a human right or natural entitlements; governments are

happy to use subsidies as a tool to gain consensus and are unprepared to take the risks associated with removing them. Countries that attempted major reforms in the 1970s and 1980s had to backtrack these reforms such as Tunisia in the aftermath of the 1983 reform.

The prolonged use of subsidies and the benefits that they provided to some enterprises generated a new rhetoric for their use as enterprise support mechanisms. Import substituting, infant industry protection, or export-oriented growth are some of the terms used to justify subsidies in this context. These terms were used to defend a system of production born and raised with subsidies. Enterprises found themselves in the middle of the subsidy system in two different but connected ways. On the one hand, consumer subsidies covered domestically produced products so that consumer subsidies had first to pass through producers. For example, bread subsidies were and are still administered by subsidizing flour for bakeries. This kind of subsidy evidently creates distortions on the production side and incentives for the creation of shadow markets. Subsidies on liquefied petroleum gas (LPG) are administered by financing the distributors of LPG bottles, which creates an entire distribution system around this product alone. Moreover, some consumer products such as diesel or sugar are widely used as production inputs by enterprises, artificially reducing costs. On the other hand, producer subsidies accompanied consumer subsidies throughout the period. This combination of producer and consumer subsidies generated a much distorted apparatus of production highly dependent on subsidies. Not surprisingly, general equilibrium models often find that when subsidies are removed, the gross domestic product (GDP) declines in the medium term. The reason is that many businesses are expected to survive and export only in the presence of subsidies and they become noncompetitive and go out of business when subsidies are removed.

The 1990s were characterized by a structural transformation of the economies, but became somehow a lost decade in terms of subsidy reforms. The socialist period in the MENA region came to an end during the 1990s when enlightened dictators, presidents, and monarchs started to implement structural reforms, including privatization, liberalization and financial stabilization in the aftermath of the fall of the Berlin Wall. Subsidies were seen as a possible area of reform, but little was accomplished in terms of removing existing subsidies for two good reasons. One is that oil prices were extremely low (around US\$ 20 per barrel) and the second is that countries started to grow thanks to the initial reforms. These two factors resulted in subsidies being a relatively small share of GDP, decreasing the pressure for reforms. It is, however, a lost decade for subsidy

reforms in that low oil prices would have allowed governments to remove price regulation mechanisms and subsidies with a small impact on household welfare as compared to the decade that followed.

The 2000s brought about the first urge for reforms but no reforms; rather, it was a period that could characterize subsidies as one of the last instruments for fragile governments to maintain power. The change in attitudes toward subsidies was generated by two concomitant factors. The first follows from the previous period. As countries start to reform their economies, it becomes increasingly clear among international observers that subsidies are an obstacle to further reforms, and this idea starts to generate a debate on subsidy reforms also within countries. The second and most important factor is oil prices. Starting from the beginning of the decade the price of oil rises with a relentless growth process, which drastically changes the weight of subsidies on the economy. Subsidies, for the first time, become an unsustainable burden for the budget.

Increasing oil prices have a double cost: they not only increase subsidies, but also contribute to higher prices of nonsubsidized products, including food. This general increase in prices, in turn, generates resentments on the part of the population and a wall of adversity toward subsidy reforms. Moreover, through the 2000s none of the countries in the region has gone through political reforms, and rulers continue to use subsidies as a tool to contain discontent. In Libya, for example, Gaddafi implemented a drastic reform of food subsidies in 2008 only to roll it back completely on the eve of the Libyan revolution as one of his last attempts to contain discontent. Hence, subsidies become increasingly a burden for state budgets, but they remain a political hazard for fragile rulers.

The incapacity of governments to remove subsidies during a period of hard budget constraints relates to oil prices and government instability but also finds its roots in a combination of factors that, taken individually, may seem reasonable to many observers. Table 1 shows 10 factors that justify removing subsidies as well as 10 factors that would seem to justify subsidies. Subsidies are costly to the government and tax payers; they distort investments, production, and consumption; and they can support nondemocratic institutions. Yet, subsidies are easily portrayed as good policies. Politicians are rightly concerned about the risk of political uprising, various stakeholders benefit indirectly from subsidies thanks to established monopolies or oligopolies. Export-oriented firms benefit from lower input costs and can better compete on international markets. Consumers benefit from reduced prices and reduced volatility on prices,

and this applies to all consumers. Subsidies also worked as a social protection mechanism, compensating for the general increase in prices of the late 2000s, and in many countries of the MENA region, subsidies are perceived as an acquired right.

All these reasons for keeping subsidies appear to be legitimate but each of these reasons is linked to a particular interest group and results in a net cost for the economy at large. For example, the risk of social uprising is real, but delaying reforms does not address the problem. Export-oriented firms benefited from increased export competitiveness but only in the short term and at the expense of reduced growth in production and productivity in the medium and long term. Subsidies worked as social protection mechanisms but in a much less efficient way than cash transfers targeted to the poor. In other words, although removing subsidies may result in a positive social outcome overall and in a better allocation of resources in the long run, the potential loss of short-term gains from particular interest groups is a powerful constraint to reforms. This was why it was so difficult to remove subsidies. The voices of the different interest groups were louder than the overall economic rationale of the social planner, a voice that few governments were willing to heed. It is natural to ask next, therefore, what broke this equilibrium and made governments move on with reforms.

Table 1: Pros and Cons of Subsidy Reforms

Ten reasons to remove subsidies

*Economic*

Distort consumption

Distort production

Distort investments

Delay important strategic decisions on energy

Encourage informality and illegality

*Political*

Support undemocratic regimes and populists governments

Nontransparent to the population

Ten reasons to keep subsidies

*Economic*

Reduce production costs and increase export competitiveness

Reduce price volatility, financial risks, and uncertainty for households

*Political*

Risk of social uprising

Buy political consensus

Benefit established monopolies/oligopolies related to politicians

### *Social*

Costly for the tax payers

Inequitable and pro-rich

Costly for the environment

### *Social*

Work as social protection mechanism

Compensate for general increases in prices

Benefit the poor, the middle class, and the rich

Perceived as a basic human right

Increased demand for subsidies due to economic decline in the MENA Region

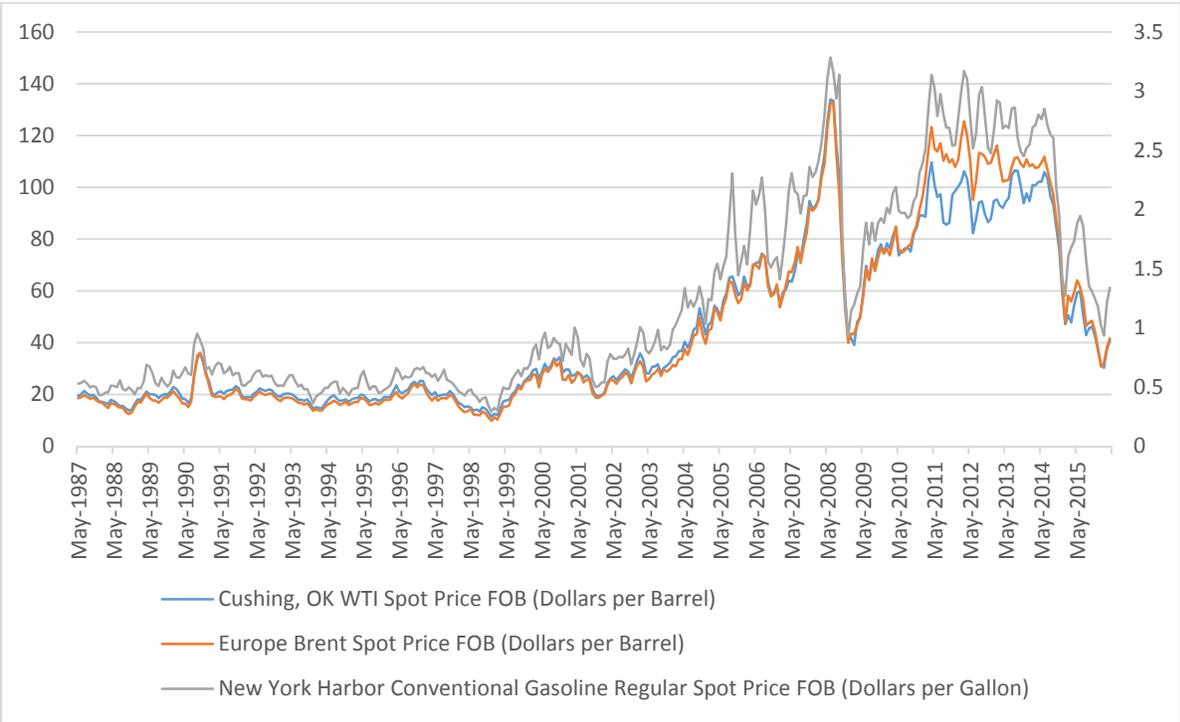
## What Triggered Reforms?

The recent wave of subsidy reforms really starts with the 2010 reforms in the Islamic Republic of Iran and progressively expands to other countries of the MENA region in the midst of political turmoil. A combination of factors explains this wave of reforms, each of which cannot explain the reforms alone. One possible factor is the extent of the political changes that took the region by storm. Regime changes in the Arab Republic of Egypt, Libya, Tunisia, and the Republic of Yemen altered the political settings in these countries and had a demonstrative effect on countries that did not experience revolutions first hand. The popular revolutions affected the politics of other countries of the MENA region, and in some countries political changes occurred without a revolution. The new class of politicians was less averse to subsidy reforms than the previous regimes, perhaps because they were typically less connected than the old regimes to the benefits derived from subsidies. The spirit of change created a new social contract with the populations, who became less averse to reforms although subsidies remained in great demand.

But the main factors that explain reforms are economic and relate to the price of oil, regulated prices and the economic decline generated by the political changes. The period considered thus far was exceptional for world energy and food prices. Figure 1 shows average monthly oil prices (U.S. and European FOB prices in US\$ per barrel, left axis) and the price of gasoline (U.S. FOB price in US\$ per gallon, right axis) between May 1987 and April 2016.<sup>1</sup> Four distinct periods emerge. The first period, between 1987 and 2003, is characterized by oil prices below 40 US\$ per barrel. During this period, U.S. and European prices overlap, and the price of gasoline

follows closely the oil price. A second period is characterized by a steep surge in oil prices between 2003 and 2008 when price volatility increases and the price of gasoline follows less closely the oil price. The third period starting in 2009 follows the global financial crisis and is characterized by high and volatile oil prices where the U.S. and European prices and the price of gasoline increasingly diverge. The fourth period shows the most recent decline in oil and gasoline prices and also continued price volatility. The period considered by this paper (2010–2014) is unique in terms of both the level and volatility of oil prices.

Figure 1: U.S. and European Oil Prices, May 1987–April 2016

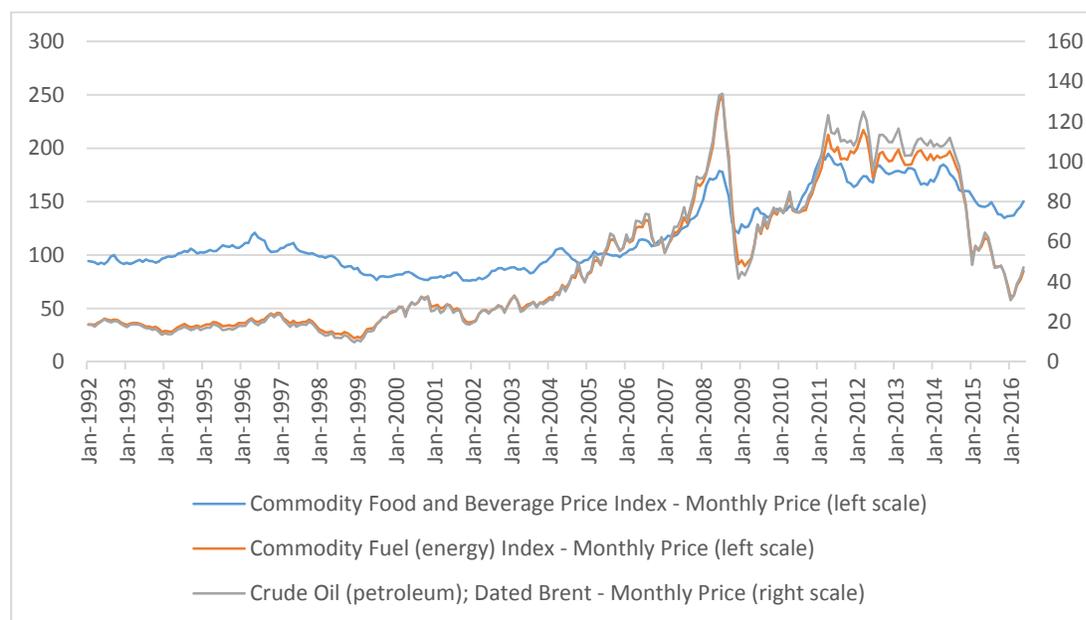


Source: Elaborated from data available at EIA 2015.

The picture is similar if we consider the commodities indexes for fuel and food (figure 2). The fuel energy index, which combines fuel products, shows that its trend overlaps with the oil trend up until the 2008 global financial crisis when we start to see more volatility and a certain divergence between the two trends. The food price index is naturally less associated with changes in the oil price but nevertheless is correlated with it. In particular, during the period that we consider more closely (2010–14) both the food and energy indexes show high levels and high volatility. In their reform efforts, governments faced increasing fiscal pressure and increasing

uncertainty. This aspect is crucial to understanding the political economy of reforms and why most governments in the region have put subsidy reforms at the top of their agenda in recent years.

Figure 2: Commodities and Oil Prices, January 1992–May 2016



*Sources:* Elaborated from <http://www.indexmundi.com/> and World Bank Commodities Prices database.

The next issue to consider is the regulated prices that MENA countries were confronted with when they were forced to introduce reforms. Table 2 shows the average regional prices for four energy products—gasoline, diesel, kerosene, and LPG—comparing the main regions of the world. It is striking how the MENA region distinguishes itself from the others by having, by far, the lowest average regional prices. For example, the price of gasoline, on average, was US\$ 0.67, about half the price of other regions. The price of LPG was US\$ 0.4, which is less than a third of the average price in South Asia and about a third of the price in East Asia and the Pacific. Similarly, for diesel and kerosene, the prices in the MENA region were a fraction of the prices in other regions. Hence, the worldwide push for subsidy reforms that took place in virtually all regions of the world since 2010–11 was particularly acute in the MENA region when growth took a negative turn due to political instability. These two factors together with the economic

decline generated by the political changes were the driving factors of subsidy reforms that eventually overruled the other logics for maintaining subsidies.

Table 2: Average Regional Prices of Petroleum Products, in US\$ (January 2013)

	Gasoline	Diesel	Kerosene	LPG
East Asia and Pacific	1.25	1.03	1.11	1.20
Europe and Central Asia	1.16	1.23	n.a.	n.a.
Latin America and the Caribbean	1.24	1.14	1.18	1.01
Middle East and North Africa	0.67	0.44	0.41	0.40
South Asia	1.25	0.91	0.86	1.44
Sub-Saharan Africa	1.24	1.22	0.96	0.97

*Source:* Elaborated from Kojima 2013.

*Note:* The table is based on a sample of 63 countries. Data on Europe and Central Asia (ECA) countries may not be representative due to the small sample size.

## Who Reformed, When, How, and Why?

An overview of reforms undertaken during this period shows that of the eight countries considered, six implemented substantial reforms. In chronological order of reforms, these countries are the Islamic Republic of Iran, the Republic of Yemen, Jordan, Morocco, Egypt, and Tunisia. The other two countries of Djibouti and Libya did not implement any reforms and will not be covered in this section. In what follows we focus on the key reforms undertaken between 2010 and 2014, summarizing the background, contents, and outcomes of the reforms.

### Islamic Republic of Iran: December 18, 2010

On January 5, 2010, the Government of the Islamic Republic of Iran introduced the Targeted Subsidy Reform Act, a major subsidy reform designed to eliminate most subsidies and compensate the population with a cash transfer. Due to political and organizational constraints, the implementation of the act was delayed for almost a year and the reform was finally launched on December 18, 2010. The reform was originally planned to be implemented over a period of five years to coincide with the fifth five-year economic, social, and cultural development plan. The act estimated the expected net gain at 200 trillion rials but did not indicate the price increase to be applied to subsidized products. The reform was preceded by an extensive public relations campaign to educate the population on the costs and benefits of the reform (Guillaume, Zytek, and Farzin 2011). The government also made clear that protests would not be well received.

Budget savings deriving from the reforms were expected to be partly redistributed in the form of transfers to the population (50 percent), partly used by the government for administration (20 percent), and for improving the efficiency of the energy, transport, and industry sectors (30 percent).

The actual reforms that unfolded in the weeks following December 18, 2010 included major prices increases for all fuel products, electricity, water, transport, and bread. The price of gasoline increased fourfold from the equivalent of US\$ 0.10 per liter to US\$ 0.40 per liter for quotas<sup>2</sup> and from US\$ 0.60 per liter to US\$ 0.70 per liter for nonquotas. The price of diesel increased tenfold from US\$ 0.06 per gallon to US\$ 0.6, and the price of natural gas for domestic consumption increased at least fivefold from 1–1.3 cents per cubic meter to 7 cents per cubic meter. Prices for electricity and water also increased by around 300 percent on average, and the reform did not spare public transport or bread, with prices increasing by more than 200 percent.<sup>3</sup>

The price reform was accompanied by a compensatory cash transfer of 445,000 rials per person per month, an amount equivalent to 28 percent of the median household income and 50 percent of the income of a minimum wage worker with a family of four. This transfer was quasi-universal. About 80 percent of households were made eligible on the eve of the reform, and more households were added later. The cash transfer was administered via bank accounts. The first transfer was deposited in accounts in advance of the price increases in an effort to minimize protest and distrust for reforms.

The reform had a clear impact on prices, which increased during the first half of 2011 across main consumption items, with average increases around 30 percent and peak increases around 100 percent. Consumption of fuel products such as gasoline and liquefied gas decreased by about 10 percent. In January 2012 the government estimated that total savings from the reform amounted to an equivalent of US\$ 15 billion. The simulations provided in the Islamic Republic of Iran case-study (Verme and Araar, 2016) show that the compensatory cash transfers provided were excessive to compensate for the reforms and that a large part of the transfers accrued to the nonpoor. Perhaps because of these large effects, the government partly rolled back reforms in March 2012 when the parliament amended the Targeted Subsidies Reform Act.

The main trigger for reforms was the size of subsidies, which by 2010 were estimated at the equivalent of US\$ 100 billion, an amount larger than the total oil revenues and over 20 percent of

GDP. The scope and size of the reform was unprecedented not only for the Islamic Republic of Iran but also for any other economy that embarked on subsidy reforms. Indeed, the outcomes of this reform have produced large changes in consumption patterns, inflation, and government revenues and expenditure. However, despite the large increases in prices, the reform did not remove price controls and four years later the Islamic Republic of Iran found itself again with very large subsidies, the second largest provider of subsidies in the MENA region after Libya. Therefore, although the reform partly succeeded in readjusting consumption and prices, it failed in its attempt of removing subsidies.

Subsidy reforms in the Islamic Republic of Iran have also been carried out in a complex economic environment characterized by international sanctions and large social programs, such as the Maskan Mehr low-cost housing program, which contributed to a prolonged period of stagnation and inflation. The outcomes of these other factors merged with the outcomes of the subsidy reforms and eventually created public resentments against the reforms. The continuation of reforms during the five-year period that was initially envisioned did not happen as expected, and further subsidy reforms remain as problematic as ever.

#### [The Republic of Yemen: 2010–14](#)

Recent subsidy reforms in the Republic of Yemen initiated around 2005 with World Bank and IMF support. Initial reforms included several rounds of price increases that more than doubled prices between 2005 and 2010. In 2010, the government introduced further price increases for fuel products of about 30 percent and for LPG of about 100 percent. This was followed in 2011 and 2012 by further increases of prices of gasoline by 66 percent and diesel and kerosene by about 100 percent. These large price increases were not accompanied by significant public protests. In July 2014, the government decided to remove subsidies and initially increased prices by 60 to 90 percent depending on the product, but this move lacked a proper public information campaign and resulted in violent protests that forced the government to partially reverse reforms in September of the same year. As a result, gasoline and diesel experienced a net increase of 50 and 20 percent respectively. This last round of reforms also foresaw compensatory measures in terms of an expansion of funding and coverage for the social welfare fund. However, these compensatory measures were not clearly explained to the public and they took some time to be enforced, which partly explains why they were not effective in preventing public protests. It is

also important to note that these reforms occurred in the midst of high political instability that eventually turned into civil war. If we consider the political climate, the government took bold and risky reforms during the period that could have further compromised the political environment.

#### [Jordan: November 13, 2012](#)

The Government of Jordan introduced a major subsidy reform on November 13, 2012. This move occurred unexpectedly, despite a prolonged period of public discussion about subsidy reforms. The reform reintroduced the automatic pricing adjustment mechanism on petroleum products and thereby discontinued the practice of discretionary adjustments. The liberalization of prices caused immediate increases in the prices of 90 octane gasoline and kerosene (+14.3 percent, from 700 fils per liter to 800 fils per liter for both products), diesel (+33 percent from 515 fils per liter to 684 fils per liter), and LPG (+53.8 percent, from JD 6.5 per cylinder to JD 10 per cylinder of 12.5 kilograms). This rise followed an initial price increase of the other petroleum products, including 95 octane gasoline, introduced during the second quarter of 2012. The reform was accompanied by the precautionary measure of freezing the price of bread, but the Ministry of Transport was instructed to adjust public transport tariffs according to the new fuel prices.

The Jordanian reform also included a compensation of JD 70 per person per year with a maximum ceiling per household of JD 420 per year, an amount excluded from any form of taxation or deductions. The only eligibility criteria were Jordanian residency and an annual household income below JD 10,000. An estimated 70 percent of the population were expected to be eligible for the program, and the administrators used several public databases to exclude noneligible households, including the rosters of public sector employees and retirees, military personnel and retirees, and social security subscribers. Beneficiaries of the National Aid Fund (NAF) would receive the compensation without application, but all other eligible citizens (private sector employees, the unemployed, and the inactive) had to apply by filling out a specific form. The start of the compensation was set for November 18, 2012, and payments were scheduled to be made every four months. Payments were also anchored to the average international price of oil with an automatic discontinuation of benefits if the price of oil per barrel fell below US\$ 100 in the four months preceding any payment. The generous cash transfer

that accompanied the reform probably contributed to quell protest, as the reform did not result in any social backlash.

#### [Arab Republic of Egypt: July 5, 2014](#)

The Arab Republic of Egypt undertook substantial reforms of fuel prices on July 5, 2014. The government announced increases in prices for all fuels with the sole exception of LPG. Gasoline prices rose from LE 0.9 to LE 1.6 for 80 octane, from LE 1.85 to LE 2.6 for 92 octane, and from LE 5.75 to LE 6.25 for 95 octane; natural gas for cars rose from LE 0.45 to LE 1.1; and diesel from LE 1.1 to LE 1.8. Prices for natural gas and fuel for commercial uses were also increased significantly. Electricity prices for all residential customers rose by about 50 percent on average; smaller increases were applied to commercial customers for whom the initial price had been much higher. These were all major price increases in percentage terms but still insufficient to eliminate subsidies as the starting prices were very low. The government also announced a complete phase out of subsidies over a five-year period, estimated savings of about LE 51 billion and planned to allocate part of these savings to social expenditure—about LE 27 billion on health, education, and social protection programs.

The July 2014 reform aimed at addressing the major budget liability stemming from the prolonged growth of subsidies. For example, fuel subsidies had increased at a compound annual growth rate of 26 percent between 2002 and 2013. Their share of the government budget increased from 9 percent in 2002 to 22 percent in 2013, and their share in Egypt's GDP increased from 3 percent to 7 percent in the same period. The weight on the budget was already very high in 2011, but the Egyptian revolution stalled any possible reforms. The new government of Mohamed Morsi preferred to delay major reforms and focus instead on administrative adjustments such as the much needed corrections to the LPG distribution system. It is only with the arrival of the government of Abdel Fattah el-Sisi that the political commitment and capacity to implement reforms became stronger. The popularity that this government enjoyed during the first few months in office and the inherited budget deficit contributed to create the conditions for reforms.

#### [Morocco: September 16, 2013–October 1, 2014](#)

Major reforms to the subsidy system in Morocco began on September 16, 2013, with the decision to reactivate the price indexation mechanism for liquid petroleum products, including

gasoline, diesel, and fuel oil. The new system imposed a cap on the unit subsidies with the remaining price differential to be passed through to domestic prices. This first measure helped the government to reduce subsidies by an estimated 1.3 percentage points of GDP.

On February 1, 2014, the government stopped supporting prices of gasoline and industrial fuel oil. The price of gasoline in January 2014 was not very far from the nonsubsidized price. As a result, the price increase that occurred in February 2014 was relatively small, from DH 12.02 to DH 12.8. As fuel oil was used for the generation of electricity, the government introduced a lump-sum transfer to the national electricity company to be phased out over a period of three years during which electricity tariffs were to progressively increase starting from August 2014. The August reforms of electricity included an increase of the number of blocks from four to six. Tariffs were adjusted, and starting from the third block, the tariff system changed from increasing block tariffs (IBT) to volume differentiated tariffs (VDT).<sup>4</sup> Diesel unit subsidies were also subjected to a gradual dismantling with a progressive phase out from DH 2.15MAD per liter in January 2014 to DH 0.80 per liter in October. Subsequently, the government removed diesel from its list of subsidized products.

As of January 2015 the only remaining subsidized products in Morocco were LPG, flour, and sugar. However, the government decided to continue administering prices of liquid petroleum products through the implementation of the indexation mechanism until November 2015, when prices of all liquid petroleum products would be fully liberalized. Prices of these products would thereafter be subject to competition among the distributors.

The political economy of subsidy reforms in Morocco has been driven largely by the global prices of strategic commodities and by the increasing cost of subsidies to the state's budget. Subsidy reforms were complemented by other fiscal consolidation measures, including a freeze on wages and limits to hiring civil servants to stop the rise of the public wage bill, and improvements to the tax collection system through the extension of the tax base, harmonization of tax rates, and an effort to stop tax evasion.

The evaluation of the 2013–14 reforms in chapter 3 of Verme and Araar (2016) shows that the reforms are unlikely to have had any impact on poverty and inequality and they did protect the most vulnerable parts of the population while contributing significantly to reducing the budget deficit. The evaluation of the 2014 subsidy reforms has shown that the government has made a

set of proper choices from a distributional and budget perspective. Subsidies have been eliminated on those products, such as gasoline, that were more pro-rich and affected poverty the least, while the reform of products that would hurt the poor the most, such as LPG, has been delayed. Electricity tariffs have been increased in a sensible way by increasing the number of blocks (and thereby reducing the consumer surplus) and by raising tariffs only on the upper blocks, protecting in this way the poor and the middle class. The 2014 reforms had important indirect effects, particularly for diesel, and these had an impact on poverty but still modest overall. All reforms were implemented without compensatory cash transfers, and the reforms did not provoke any significant social backlash.

### Tunisia: 2012–14

As with the other reformist countries, Tunisia was forced to embark into subsidy reforms because of budget constraints. Between 2005 and 2013, the combined spending on energy, food, and transportation more than tripled, rising from 2 percent of GDP in 2005 to 7 percent in 2013. Energy subsidies, in particular, increased fourfold, reaching 4.7 percent of GDP in 2013. Due to the 2011 revolution and the economic decline and political instability that followed the revolution, reforming subsidies proved difficult between 2011 and 2012.

In 2012 the Government of Tunisia began implementing a gradual strategy of subsidy reduction and improvement in public spending targeting. As reported by the IMF (2014), the prices of gasoline, diesel, and electricity increased by 7 percent in September 2012, followed by similar increases in March 2013. Energy subsidies to cement companies were halved in January 2014 and fully removed in June of the same year. Electricity tariffs on low and medium voltage consumers were increased in a two-step process, by 10 percent in January 2014 and another 10 percent in May 2014. The government introduced a lifeline electricity tariff for households consuming less than 100 kilowatt hours (kWh) per month in 2014. Also in January 2014 the government established a new automatic price formula for gasoline to align domestic prices to international prices over time, but without a clear calendar.

The government also introduced other social reforms with the potential to mitigate the impact of subsidy reforms, although not designed specifically for that purpose. It launched a new social housing program (which was never really implemented), increased income tax deductions for the poorest households, and committed to creating a unified registry of beneficiaries of social

programs and to improving social spending targeting (to be finished in 2015). In addition, the government continued to expand the cash transfer program (PNAFN) while attempting to reduce its exclusion error.

## Policy Options

In what follows we discuss the pros and cons of these different approaches to reforms and other important questions and choices that policy makers are called to address when reforming subsidies such as introducing compensatory measures or not, prepare the public with public information campaigns or be silent, follow a product by product approach as opposed to uniform reforms across products, target the poor, the middle class or both, start from energy subsidies as opposed to food subsidies or vice-versa, consider direct as opposed to indirect effects, and the choice of the political timing of reforms. Rather than providing recommendations, the following sections review and compare the choices made by the sample of countries considered.

### Radical versus Gradualist Approach

Looking at the contents, duration, and outcomes of the reforms, we can classify the countries observed into four categories. The first category is made of those countries that followed a *radical approach* to reforms. This category includes the Islamic Republic of Iran and Jordan, the countries that introduced a substantial set of reforms at one particular point in time. The second category is made of those countries that carried out a significant amount of reforms over a period of time using a *gradualist approach*. This category includes Morocco and Tunisia, but the extent of the reforms and their impact have been quite different, with Morocco implementing much deeper reforms than Tunisia. The third category includes Egypt and the Republic of Yemen, two countries that stepped up reforms in 2014 after a period of gradual reforms. The fourth category of countries is represented by the *nonreformers*, which includes Djibouti and Libya. Djibouti had relatively little subsidy in place to start with and distributed it only in the form of tax exemptions. Libya did not reform because of political instability and civil conflict.

Were the Islamic Republic of Iran and Jordan more successful than Morocco and Tunisia? The answer is not univocal, but there is something to learn by comparing these two sets of countries. The Islamic Republic of Iran did implement profound reforms in terms of price increases, and these reforms did provide some extra revenues for the government, real benefits to the poor, and reduced energy consumption. However, they also brought about inflation, were costly in terms of

compensation, and were carried out in the midst of other important economic changes such as international sanctions and housing reforms. Moreover, these reforms failed to liberalize prices of subsidized items. The result is that four years later subsidies had returned to very large levels, and the population remains confused as to the benefits of the reforms. The job is not done, and pushing further reforms will be more difficult than before. The scale of the reforms in Jordan was much lower, but Jordan managed to liberalize prices of gasoline and diesel in one stroke and to buy support with substantial cash transfers. Jordan solved one problem but has yet to tackle the remaining LPG and electricity subsidies. Electricity subsidies in particular represent the main budget problem in Jordan today and the reforms did not address this problem.

Morocco prepared reforms carefully, implemented them in an orderly fashion following an open dialogue with the population, discontinued subsidies altogether for gasoline and diesel, started to implement a clear plan for the removal of electricity subsidies, and designed a plan for discontinuing subsidies on LPG. This country has now eliminated most subsidies and is expected to eliminate all of them within three years. This country started from a relatively low level of subsidies as compared to other countries in the region partly because it was more rigorous in applying the price transfer mechanisms in place and also removed subsidies on other consumers' products such as edible oil early in the 2000s. Tunisia implemented simpler reforms with gradual increases of prices and tariffs every quarter. This approach went well with the population, but the country has failed to remove subsidies altogether for any energy product and, at the end of 2014, still maintained subsidies on several food products.

Those countries that did not reform did not do so either because they had low subsidies (Djibouti) or they faced insurmountable political challenges due to internal civil conflict (Libya). Otherwise, these countries too might have gone through reforms during the exceptional convergence of factors of the 2010–14 period. Overall, considering the sample of eight countries and the 2010-2014 period covered by the paper, the gradualist approach has been the dominant approach to reforms.

### Compensation versus Noncompensation

The more radical approach followed by the Islamic Republic of Iran and Jordan was accompanied by large cash compensations. In both countries these compensations were seen as indispensable to assist the poor and the middle class and discourage any form of social protest. In

this sense, compensations were effective. In contrast to the countries that followed a radical approach, neither Morocco nor Tunisia resorted to comprehensive cash compensation although Tunisia expanded the cash transfer program during the period of subsidy reforms; instead, they paired reforms with other mitigating fiscal reforms. These countries not only avoided any form of social unrest but also gained relatively more from reforms than countries that resorted to compensation. The lack of compensation did not result in an overall reduction in poverty, as in the Islamic Republic of Iran and Jordan, but the overall impact on poverty was very low, also because of the initial low level of subsidies.

In essence, the two dominant approaches to reforms have been the radical approach with compensation and the gradualist approach without compensation. However, several other factors can come into play that may affect the decision about compensation such as the political climate, the overall initial level of subsidies or the existence or introduction of other social protection measures in concomitance with subsidy reforms. Depending on these factors, governments may also consider compensation in the course of gradualist reforms.

It is important for the social planner to have a good knowledge of the distribution of income and expenditure prior to reforms and simulate the impact on household welfare of alternative compensation strategies. The optimal mix between price increases and cash compensation depends largely on the distribution of household incomes, and the effect of price increases on different households depends on household expenditure on subsidized products. In absolute terms, the cost of price increases for richer households tends to be higher than the cost for poorer households because richer households consume more. But in relative terms (relative to total household expenditure) subsidized products tend to be more important for the poor with the exception of a few products.

Other forms of mitigating measures are also possible. The Islamic Republic of Iran, Morocco, and Tunisia accompanied their reforms with fiscal policies that could mitigate the impact of reforms, even if these reforms were not always explicitly linked to the subsidy reforms. The Islamic Republic of Iran launched a major housing scheme (in addition to cash compensation); Tunisia passed a housing program and tax deductions, and Morocco acted on the macro side with macro stabilization and fiscal policies. These reforms and their relation with subsidy reforms are

effectively difficult to evaluate and they cut short of addressing the most challenging task of compensation measures, which is targeting the poor properly.

More promising are reforms that aim at improving the targeting capacity of the social protection systems in place. The cost of compensation can be much reduced by passing from quasi-universal systems, such as those implemented by the Islamic Republic of Iran and Jordan, to systems targeting the poor only. Poverty-focused compensations proved difficult to introduce for all countries that moved on with subsidy reforms for the simple reason that these countries did not have proper social protection systems in place. In essence, cash compensation for the poor is the most obvious social policy that would address the poverty question, reduce budget costs and be easy to evaluate in cost-benefit terms. However, this policy remains constrained because the social protection systems in the MENA region are still underdeveloped and do not guarantee proper targeting of the poor. This contributes to explain why countries that opted for compensation did so using quasi-universal coverage rather than targeting the poor only.

#### Public Information versus No Information

This is not an aspect that we focus on but it is useful to note the contrast between the different approaches followed by the countries considered. The Islamic Republic of Iran is perhaps the only country that implemented a specific public information campaign before launching the reforms. But Jordan and Morocco kept the discussion on subsidy reforms in the news for a long time before implementing reforms and Morocco was rather specific in explaining reforms when it started the process. Egypt introduced reforms in July 2014 quickly, without a proper information campaign by simply exploiting the popularity of the incoming government whereas in the Republic of Yemen poor communication with the public resulted in social unrest. In essence, the degree of information provided by governments prior to reforms or in the course of reforms varied significantly across countries and it was not necessarily related to the scale or pace of reforms or to social unrest. The only common denominator across countries is that nowhere reforms passed without an interest on the part of the press and some degree of public debate witnessing, once more, the importance of the topic for the region.

#### Piecemeal versus Wholesale Reforms

We define “piecemeal” reforms as those carried out product by product, tailoring price increases and product restructuring to each individual product subject to reforms. We define “wholesale”

reforms as those carried out uniformly across products: for example, a 20 percent increase in the price of a set of products. All countries considered made an effort to follow a piecemeal approach. However, Tunisia has used in a couple of occasions homogeneous price increases for different products and those countries that followed a radical approach to reforms did so by treating several products at the same time. Gasoline and diesel were the first products to be reformed in all countries, then electricity, and LPG always came later. Reforms were almost never uniform across products with the exception of price increases in Tunisia at one point in time and for only two products.

Products are different in their production and distribution processes, they target different types of consumers in different ways, the price structure may be different, and reforms may affect different stakeholders and touch upon different interest groups. Comprehensive wholesale reforms are often tempting because they appear simple in their design and their effect can be better measured in terms of budget outcome. The reality on the ground, however, is much more complex. Uniform price increases across products result in very different outcomes in terms of budget, welfare effects and effects on the various stakeholders managing subsidized products. This may explain why all governments with few exceptions opted for a piecemeal approach to reforms.

### Poor versus Middle Class

Who is really hurt by the reforms and who is most likely to complain? In absolute terms, the answer to both questions is the middle class. The middle class receives more subsidies in dollar amounts than the poor, and the urban middle class has generally more voice when it comes to protests. Political leaders are understandably aware and worried about this fact when it comes to subsidy reforms. The very generous compensation packages designed by the Islamic Republic of Iran and Jordan extended well beyond the middle class, and although the rhetoric may have been around protecting the poor, the real target of quasi-universal cash transfers is the middle class. Egypt, Morocco, and Tunisia, however, did not formally compensate either the poor or the middle class. As already discussed, countries that opted to provide compensation did so with quasi-universal coverage. This is one area where a lot more can be done. If governments opt for compensation and in preparation for the reforms, it is important to simulate reforms and measure the budget cost of compensation under different coverage scenarios, and it is equally important

to improve the targeting capacity of the social protection systems so as to be able to reach the intended population.

### Energy versus Food Subsidy Reforms

In addition to their investigation of energy products, some of the researchers who contributed to Araar and Verme (2016) were able to consider a limited set of food products in selected countries. The list of food products and countries that administer food subsidies is, however, not complete. For example, Egypt and Tunisia are two countries that administer food subsidies, but the case studies dedicated to these countries focused on energy subsidies only. Still, the evidence of asymmetry in reforms between energy and food items is clear. The subsidy reforms we observed have been largely on energy products, and virtually all governments had a clear preference for postponing or avoiding food subsidy reforms. This choice is partly explained by the fact that energy subsidies weigh more on the government budget than food subsidies (but not true for Libya), and the resistance to this type of reform often comes from fear of hurting the poor and the middle class and causing social unrest. Also, food subsidies are thought to work better than energy subsidies as social protection mechanisms because they tend to be allocated to primary food products largely consumed by the poor and there is also a nutrition angle to consider that may be important for the poorest countries. For example, Libya in 2010 and Egypt in 2014 opted to increase food subsidies while trying to reduce energy subsidies.

But in other cases countries have successfully removed food subsidies (edible oil in Morocco in the early 2000s and edible oil, tomato paste, tea, and dry yeasts in Libya in the mid-2000s) with marginal impact on welfare, no compensation, and no social implications. Therefore, countries in the MENA region showed a clear preference for reforming energy subsidies as opposed to food subsidies but history shows that it is possible to reform food subsidies.

### Direct versus Indirect Effects

In the country chapters of Verme and Araar (2016), indirect effects for food products have been estimated only for two products (bread and sugar) in only one country (Morocco) and results show that these effects are negligible. Indirect effects related to energy products have been estimated in four of the eight countries considered (Morocco, Tunisia, Jordan and the Islamic Republic of Iran) and, in the case of the Islamic Republic of Iran, indirect effects are only available for all products aggregated. Therefore, tentative conclusions on the role of indirect

effects for energy products can be made comparing three countries (Morocco, Tunisia, Jordan) and three products (electricity, gasoline and diesel). Moreover, in the case of Morocco, gasoline and diesel effects have been estimated jointly and cannot be separated. Comparing available countries and products, we can nevertheless derive three tentative conclusions on the role of indirect effects (see Table 3): 1) For electricity, the share of indirect effects on total effects seems quite consistent across countries and estimated around 40 percent; 2) The share of indirect effects of petroleum products is greater than the share of non-petroleum products; and 3) The share of indirect effects of diesel is around 80 percent and generally higher than the share of gasoline. The last two points are expected given the role of petroleum products and diesel in particular in the production processes. Results on electricity are perhaps more interesting and point to a regularity that would call for further research. See also Coady et al. (2015) on indirect subsidies.

Table 3: Shares of Indirect Effects over total effects (%)

	Morocco	Tunisia	Jordan
Gasoline	87.8	51	14
Diesel	87.8	89.1	77
Liquefied Petroleum Gas (LPG)	n.a.	14.4	n.a.
Kerosene	n.a.	n.a.	n.a.
Electricity	36.6	40.7	41

### Political Timing of Reforms

It is also instructive to reflect on the timing of reforms in relation to the political context in which they occurred. This paper has argued that reforms were implemented during an extraordinary period of political and social changes for the region and that this extraordinary period has been partly responsible for the reforms. But it is also true that not all countries experienced the same political changes and not all countries reformed equally. For example, it is clear that Morocco and Jordan had a comparative advantage in relation to Tunisia, Libya, or the Republic of Yemen in that these countries introduced political changes in a piecemeal manner and managed to avoid a revolution and its economic costs.

Political stability evidently provided the Government of Morocco with more time and resources to prepare and carry out reforms in an orderly fashion, while political stability allowed Jordan to be rather bold with radical reforms. Egypt implemented the first radical reform when El-Sisi came to power and had the political and administrative force to bring about the reforms that had proved difficult to implement under previous political settings. In Libya, Gaddafi brought about radical reforms of food subsidies in the mid-2000s, when he enjoyed political stability and a certain international support, only to backtrack on all reforms when he needed to buy support during the period that preceded the 2011 revolution. Libya has not carried out any reform between 2011 and 2014 despite the size of subsidies in this country because internal civil conflict and political instability made reforms very risky. Although the budget crisis has provided the main impetus for reforming subsidies, the political setting has determined how and when reforms were actually implemented.

## Unfinished Business

Chapter 2 in Verme and Araar (2016) offers a comparative analysis of subsidies and simulations of further subsidy reforms. The eight case studies (chapters 3 through 10) also simulate the impact of the total removal of subsidies on welfare, poverty, inequality, and the government budget. The results of these investigations show that subsidy reforms in 2014 were far from complete, not only in the countries that have still to embark on reforms but also in countries that went through deep reforms such as the Islamic Republic of Iran and Jordan. The complete elimination of subsidies is hard to accomplish and requires strong political will as well as a convergence of other elements that facilitate reforms such as favorable international oil prices, a stable social situation and a well-structured reform package.

Progress on subsidy reforms also depends on the product considered. By the end of 2014, and with the notable exceptions of the Islamic Republic of Iran and Libya, subsidies on gasoline and diesel were reduced to small amounts. Further reforms on these products will imply ending price regulations or adopting automatic indexation mechanisms that result in zero subsidies.

Independent of the cost and benefits of this move, this is an epochal change for governments that have controlled prices of these commodities for decades and will require a strong political will.

Different is the question of LPG. None of the countries studied carried out comprehensive reforms of this product in a consistent manner. A couple of countries increased the price of LPG,

but most did not touch this price, and all now face enormous challenges. Before the fall in oil prices, the elimination of subsidies on LPG entailed price increases from 44 percent (the Republic of Yemen) to 947 percent (Libya). With the exception of Morocco, none of the countries studied had a clear strategy to eliminate LPG subsidies in 2015 or in the years to come. LPG is a product used by households for cooking and is largely used by the poor, which makes governments reluctant to touch the price of this product. The production and distribution of LPG is mostly in the hands of few entities that may block reforms.

Reforming LPG subsidies is, however, possible. Egypt and Tunisia have explored the possibility of combining the expansion of the natural gas network with the reduction in the use of LPG bottles. Natural gas networks are expanding in these countries, and their governments could facilitate the expansion of the network in poorer urban neighborhoods by subsidizing connections to the network. The cost of natural gas for household use is competitive with LPG, and even poor households may be willing to switch to the new system, which was the experience in Europe during the 1960s and 1970s. To encourage this process while reducing subsidies, governments could proceed with small but regular increases in the price of the LPG bottle and use the revenue to expand the natural gas network further or compensate communities that cannot be reached. The other possibility explored by some countries is to introduce quotas and limit consumption in this way. Doing so is possible, although quotas require the introduction of administrative systems such as user cards, which are costly and may generate illegal or informal redistribution systems of the product under quotas. Egypt has struggled with these problems for years and has yet to find a definitive solution for LPG.

Electricity subsidies have also their specificities. Most countries have now proceeded with gradual increases, and some countries (Morocco and Jordan) have instituted a reform of the tariff structure. The central problem of electricity subsidies relates to the production of electricity, which in many countries still relies on expensive heavy fuels as opposed to cheaper alternatives such as hydroelectric and natural gas power. The crisis of electricity subsidy of Jordan started when the country had to abandon the production of electricity with natural gas due to the cuts of imports from Egypt. Jordan had to switch to heavy fuels that almost quadrupled the cost of production of electricity. The costs quickly became a major liability for the Jordanian government. In these cases the main solution to the electricity subsidies problem is changing the source of energy used to produce electricity. It is also possible, however, to restructure tariffs in

a way that are closer to the consumers' capacity to pay for electricity and reducing the consumer surplus, which is the difference between what consumers are willing to pay for a particular product and what they effectively pay on the market. There are some margins to do that in some countries, as tariffs blocks are obsolete and need to be rethought in the light of current consumption patterns. Small, transparent, and regular increases in the price of electricity is also a viable option that countries such as Morocco and Tunisia have experimented with successfully.

Several food subsidies remain in the MENA region, and they are mostly subsidies on flour, bread, and sugar. The notable exceptions are Libya, which still subsidizes a wide set of food products, and Tunisia and Egypt which maintain food subsidies on essential consumption items. Where they exist, food subsidies can be high and similar in size to energy subsidies. The political will to remove these subsidies is low as these subsidies are important for the poor. Here the unresolved question is how to compensate the poor if subsidies are removed. MENA countries lack developed social protection systems and are unable to target the poor sufficiently well. The result is a tacit consensus between the government and the population for keeping food (mostly bread) subsidies in place. Quotas are already in place in some countries and could work in the direction of reducing subsidies in other countries, but introducing a quota system is administratively complex and may be expensive, especially if this is done for only one product. Where quotas are in place, as in Libya, one possibility is to reduce the quantity amount of the quota.

## A Success Story?

Table A1 in the annex summarizes and compares the main features of reforms across the eight countries considered. As already discussed, the MENA region offers a variety of experiences with subsidy reforms (non-reformers, gradual reformers, radical reformers or a mix of the two) in countries with different initial characteristics (net importer or net exporters of energy; upper middle-income or lower middle income) and which experienced different political changes (mild political changes or revolutions) during a relatively short period of time. In addition, the table compares the initial trigger of reforms; content of reforms by year; extent of reforms; the use of cash compensation; other parallel measures; use of indexation mechanisms; significant popular protests and public information campaigns. It is evident that no two countries can be considered similar if we compare all dimensions.

In such a context, what is a successful subsidy reform? This is a hard question to answer and, to some extent, it is a country specific question. The difficulty that countries face when making reforms are not equal and the measure of success should we somehow “weighted” by the objective difficulties that countries face. On the other hand, one can also use some objective measures of success such as the degree of elimination of subsidies and rank countries according to this parameter alone. It is therefore useful to discuss success from both a relative and an absolute angle.

Using a relative perspective, the subsidy reforms that we observed in the MENA region between 2011 and 2014 can be regarded as a success story for several reasons. First, this period saw the major wave of subsidy reforms since independence. If we compare the scale and frequency of subsidy reforms during the 2011-2014 period with that of previous periods, it is evident that the latest period has seen a surge in reforms for the reasons already explained at the outset of this paper. Second, this surge in reforms has occurred during a very complex period in social, economic and political terms. In 2010, no one predicted the social uprisings of 2011 and these uprisings have complicated subsidy reforms as compared to other world regions that enjoyed social stability. Social tensions resulted in political instability and economic declines that further complicated reforms. Yet, all countries went through some form of reforms with the notable exceptions of Djibouti and Libya. The government that emerged in Libya after the fall of Gaddafi inherited the most extensive and expensive subsidy system in the region and objectively faced a daunting task in reforming subsidies during a very volatile political period. Evidently, we cannot measure success in Libya with the same measure we use for countries like Morocco and Jordan, which managed to maintain internal stability during a difficult political period. Third, reforms occurred after a prolonged period of rising food and commodity prices and a global crisis that made populations very averse to any further price increase. If we consider these three factors alone against the actual reforms implemented, the region can be looked at as a success story overall.

There are also objective measures that can be used to measure success and these measures tell a somewhat different story. One of these measures is whether countries have permanently eliminated the use of subsidies for specific products. This implies lifting any kind of price control and leaving markets operating freely, or, for some products, have automatic price adjustment mechanisms that result in no cost for the government budget and no subsidies. Using

this meter, only Morocco can claim to have made substantial progress over the past few years. Jordan probably follows in terms of success for petroleum products but in this country electricity subsidies remain extremely high and the major liability for the government budget. Subsidy reforms in Jordan cannot be looked at as a success until the cost of producing electricity will be brought under control. Egypt has made progress on some products like gasoline and LPG but price controls remain a prerogative of the government and subsidies remain very large for strategic products like food products and also LPG. The Islamic Republic of Iran has implemented the largest subsidy reform in the region without lifting price controls, which resulted in a substantial reversal of reforms only four years after their launch. Tunisia implemented only mild reforms for products that did not suffer from major subsidies while did not touch some of the food products where subsidies are large. Djibouti's reforms are negligible also in the light of the fact that subsidies were very low to start with and administered in terms of tax exemptions. In conclusion and with one exception, objective measure of success show that the region cannot be held as a success story. As the section above has illustrated, the path towards complete elimination of subsidies is still long and we cannot exclude that some of the countries considered will rise subsidies in the future, particularly during periods of low oil prices. Overall, we learned that reforms can occur in lower and upper middle-income countries and in net energy importer or exporter countries. These are not characteristics that distinguish reformers from nonreformers or good reformers from bad reformers, despite the similar global price shocks that these countries were exposed to. Similarly, reforms can occur during periods of high or low political instability, although political stability has clearly helped some countries such as Morocco and Jordan while political instability made reforms impossible in Libya and very difficult in the Republic of Yemen.

In the course of subsidy reforms the countries studied have shown to follow alternative strategies which converged only on selected choices. A piecemeal approach to reforms where products are considered one at the time and reforms are tailored to the characteristics of individual products was the path followed by all reformers. A gradualist approach where reforms are carried out over a period of time has been the dominant approach historically but some countries in particular points in time opted for radical reforms. Cash compensation has been used by some reformist countries but not by others with similar social outcomes. Public information campaigns

specifically designed for subsidy reforms have been rare but sustained communication with the public on subsidy reforms has been the path followed by most countries.

## What Next?

The paper focused on a historic period (2010-2014) when oil prices were particularly high and many governments in the MENA region were forced to push through subsidy reforms because of the increasing budget constraints that subsidies entailed. Not surprisingly, the countries that requested support with subsidy reforms were prevalently net oil importers with the exceptions of Libya and the Republic of Yemen, two countries that faced political instability which led to economic crises. Pressure for reforms was evidently weaker for the Gulf Cooperation Council (GCC) countries where political stability was accompanied by higher budget revenues due to high oil prices.

Two years after the period covered in this paper the situation has reversed. The price of crude oil per barrel declined from about 105 USD in June 2014 to about 28 USD in January 2016. This evidently changes the set of incentives for reforms that net oil exporters and net oil importers may have. Yet, there are good economic reasons for all countries to push through subsidy reforms during low oil prices. For net oil importers, while the budget and political pressure for reforms has diminished, a period of low oil prices is also the ideal period to remove subsidies and price indexation mechanisms because subsidies are low and the impact on prices and household welfare is minimized. For net oil exporters, low oil prices also provide a clear rationale to justify subsidy reforms via-a-vis populations that regard subsidies as an acquired right.

Whether these countries will use this window of opportunity is unclear. The recent period has seen a deceleration of subsidy reforms in the countries covered by this paper if compared with the previous period. The GCC countries have effectively manifested increased interest for subsidy reforms but have not really moved on with any substantial reform. Moreover, oil prices have now started to rise again and they are currently around 50 USD per barrel (March 2016). This window of opportunity may well come to an end with little progress on the front of subsidy reforms.

If we compare the period studied in this paper with the most recent period, budget and political pressure seem more powerful incentives to reform than the cost of removing subsidies for the

population. While the debate around the pros and cons of subsidy reforms is prevalently economic, the impetus for subsidy reforms is driven by a few economic factors, such as oil prices, and is prevalently political, revealing the strategic importance that governments attribute to subsidies. In the years to come, we may therefore continue to observe erratic behavior towards subsidy reforms mostly driven by temporary political and budget considerations.

## Notes

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1. Note that the difference between the Cushing OK WTI Spot price and the Europe Brent price may be due to infrastructure constraints in the United States (the location of oil pipelines relative to that of major refineries exporting refined products, for example) combined with the ban on crude oil exports. The three series are plotted to show that the trends are the same despite differences in absolute values.

2. Since June 2007 gasoline has been subject to a quota system administered with electronic cards.

3. See also [https://en.wikipedia.org/wiki/Iranian\\_subsidy\\_reform\\_plan](https://en.wikipedia.org/wiki/Iranian_subsidy_reform_plan).

4. Increasing block tariffs (IBT) apply when the tariff corresponding to a particular block applies only to the latest block of consumption, and tariffs for the previous blocks of consumption apply to the previous blocks. Volume differentiated tariffs (VDT) apply is when the tariffs corresponding to a particular block is applied to all quantities consumed up to that block.

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**Table A1 – Summary Comparative Table of Subsidy Reforms (2010-2014)**

	North Africa				Middle East			
	Morocco	Tunisia	Libya	Egypt	Jordan	Yemen	Djibouti	Iran
Income level (World Bank Income Data)	Lower-middle	Upper-middle	Upper-middle	Lower-middle	Upper-middle	Lower-middle	Lower-middle	Upper-middle
Net energy importer/exporter (World Bank Energy Data)	Importer	Importer	Exporter	Exporter	Importer	Exporter	Importer	Exporter
Initial trigger of reforms	Removal of indexation mechanism, budget deficit	Budget deficit	n.a.	budget deficit; change of regime	budget deficit; pressure from IFIs	budget deficit; IFIs pressure	n.a.	Budget deficit; Political strategy; International sanctions
Reforms 2010	n.a.	n.a.	no reforms	n.a.	n.a.	Prices on gasoline, diesel, and kerosene gradually increased by about 30 percent, and prices of LPG by 100 percent	no reforms	Mjor increase in food and energy prices
Reforms 2012	Diesel prices increased by 14 percent, gasoline by 20 percent, and industrial fuel by 27 percent.	Gasoline, Diesel, Electricity +7%	no reforms	Increases in gasoline prices	Increase in price of gasoline by 26% (June); Cut in subsidies and introduction of cash program (Nov.)	Gasoline prices increased by 66 percent and diesel and kerosene prices doubled.	no reforms	minor adjustments to the 2010 reform
Reforms 2013	Reactivation of price indexation for petroleum products	Gasoline, Diesel, Electricity +7%	no reforms	Electricity prices for households increased by 16 percent; increases in gasoline prices	Fuel indexation mechanism resumed	Diesel price unified across users, including the electricity sector	no reforms	minor adjustments to the 2010 reform
Reforms 2014	Indexation of fuel oil; price increases for electricity, water, gasoline and diesel	Electricity +10% (2 rounds); Introduction of price indexation formula for gasoline	no reforms	Gasoline prices from LE 0.9 to LE 1.6 for 80 octane, from LE 1.85 to LE 2.6 for 92 octane, and from LE 5.75 to LE 6.25 for 95 octane; natural gas for cars from LE 0.45 to LE 1.1; diesel from LE 1.1 to LE 1.8. Prices for natural gas and fuel for commercial uses also increased significantly.	Electricity tariffs increased	Full removal of subsidies with partial reversal. Prices of diesel and gasoline increased by a net 50 percent and 20 percent	no reforms	minor adjustments to the 2010 reform
Political changes (2011-2014)	Stable, new constitution and electoral system	Revolution, new constitution and political system	Revolution, political instability and civil war	Revolution, changes in governments	Stable, changes in governments	Political instability and civil war	Stable	Stable
Extent of reform	piecemeal	piecemeal	no reforms	piecemeal	piecemeal	piecemeal	no reforms	piecemeal
Pace of reforms	gradual	gradual	nil	gradual/radical	radical	gradual/radical	nil	radical
Cash compensation	no	yes, poor	no	no	yes, quasi universal	yes, poor	no	yes, quasi universal
Other parallel measures	yes, fiscal consolidation measures	yes, introduction of a low electricity tariff for poor households; increase in tax deductions, new social housing program	no	yes, stable low electricity tariffs for the poor	no	no	no	yes, housing reforms
Use of indexation mechanisms	yes	yes	no	no	no	no	yes	no
Significant popular protests	no	no	no	no	no	yes	n.a.	no
Public information campaign	yes	no	no	no	no	no	n.a.	yes



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