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Subsidy Reforms and Implications for Social Protection: An Analysis of IMF Advice on Food and Fuel Subsidies

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Food and Fuel Subsidies

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Abstract

This paper analyzes IMF advice on consumer-price subsidies for fuel and for food. We link changes in these subsidies to alternative social protection policies and evaluate how the Fund has incorporated social protection in its advice on subsidy reform. Through a series of country case studies we assess how well the Fund's advice to specific countries has followed its own guidelines, as well as how effective the advice has been in the short run.

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ABBREVIATIONS

| | |
|--------|--|
| AFR | African Department (IMF) |
| APD | Asia and Pacific Department (IMF) |
| BPC | Bangladesh Petroleum Corporation |
| DFID | Department for International Development (UK) |
| ECF | Extended Credit Facility |
| EFF | Extended Fund Facility |
| FAD | Fiscal Affairs Department (IMF) |
| ILO | International Labor Organization |
| LPG | liquefied petroleum gas |
| MCD | Middle East and Central Asia Department (IMF) |
| MONA | Monitoring of Fund Arrangements |
| NAF | National Aid Fund (Jordan) |
| NGO | nongovernmental organization |
| NSPSC | National Social Protection Steering Committee (The Gambia) |
| PPM | post-program monitoring |
| PRGF | Poverty Reduction and Growth Facility |
| PSI | policy support instrument |
| PSIA | poverty and social impact analysis |
| SBA | Stand-By Arrangement |
| SCB | state-owned commercial bank |
| SIP | selected issues paper |
| SOE | state-owned enterprise |
| TA | technical assistance |
| UNDP | United Nations Development Program |
| UNICEF | United Nations Children's Fund |
| WFP | World Food Program |
| WHD | Western Hemisphere Department (IMF) |
| WHO | World Health Organization |

EXECUTIVE SUMMARY

This paper analyzes IMF advice on price subsidies for fuel and food. We link these subsidies to alternative approaches to social protection, and evaluate how the Fund incorporated social protection in its advice on subsidy reform during 2006-15. We examine a series of country examples to assess how well the Fund's advice to specific countries followed its own guidelines, as well how effective the advice was in the short run.

Over the evaluation period, 2006-15, the Fund moved from a position in which it focused mainly on the immediate fiscal implications of food and fuel subsidies to one in which it increasingly considered the social implications of subsidy reform. Fund interventions in subsidy reform were almost always triggered by fiscal issues, including deficit concerns and the price distortions induced by subsidies. Additional fiscal triggers were the crowding out of public infrastructure provision by spending on subsidies, as well as negative externalities. Nevertheless, over the evaluation period, the Fund broadened its analysis beyond the fiscal implications and towards the social implications of subsidy reform, often because the staff recognized that the impact of higher food and fuel prices on society could act as a constraint on the reforms.

The Fund's operational work on subsidy reform took two general approaches to social protection. The first of these was to use the subsidy reforms to create "fiscal space" for social protection. The second was to view the social impacts of subsidy reform as a potential constraint upon the reforms. In both approaches, the mechanisms the Fund proposed as a replacement for generalized price subsidies usually involved means-tested transfer programs that provided either lump-sum payments or benefits in kind. Occasionally certain subsidies were maintained, usually at reduced levels, as stop-gap measures to protect basic consumption needs of vulnerable groups.

The Fund offered useful country-specific advice on subsidy reform, and this advice was often based on detailed analysis of the incidence of costs and benefits. Its advice on social protection policies was less detailed than its advice on subsidy reform, although it was sometimes associated with conditionality on social spending in a program context. In many cases the Fund staff deferred to other agencies, in particular the World Bank, for specific recommendations on social protection, or it relied on expertise within the country itself. Although in some cases the Fund appeared to treat social protection as secondary to the fiscal and macroeconomic issues raised by subsidy reforms, in other cases it treated social protection as an important element to be considered in assessing the effects of subsidy reductions.

In practice, the Fund's operational approaches often encountered difficulties. Often governments faced considerable pressure to maintain existing systems of fuel subsidies, which were popular with the middle classes. And often sequencing problems arose, when cuts in subsidies raised prices but the benefits from new social protection programs were slow to materialize. Targeted transfer programs were generally difficult to implement and could be expensive.

I. INTRODUCTION¹

1. IMF engagement with member countries (through programs, surveillance, and technical assistance) typically involves a variety of fiscal policies. In this paper, we focus on consumer subsidies for fuel and food. We examine the link between reforms in these subsidies and alternative social protection policies and evaluate how the Fund incorporated social protection concerns in its overall advice on subsidy reform during the evaluation period, 2006–15. Through a series of country examples, we assess how well the Fund’s advice to specific countries has followed its own guidelines, as well how effective the advice has been in the short run.

2. We first analyze the theoretical approach the Fund has taken in the evaluation of subsidies. There is a popular view that the Fund automatically considers all subsidies as mistakes in policy without taking into account the impact these subsidies have on different social groups.² In addition, a number of studies have indicated that such subsidies, which are intended to have positive effects on welfare, are very expensive to operate and are generally ineffectual in reaching the poor. Here we assess whether the Fund considered subsidies only from the macro-budgeting point of view—that is, analyzing subsidies simply as expansionary elements in current spending—or whether it used a micro approach—analyzing subsidies in terms of distortions and distributional effects and of hence the welfare gains and losses they may cause for different vulnerable groups. We use IMF research papers and guidance notes for staff as sources for our overview of the Fund’s approach. At the same time, we use IMF reports on selected countries—Article IV staff reports, program documents, and technical assistance (TA) reports—to consider what has been the actual practice of recommendations for subsidy changes. We look at the Fund’s subsidy-reform advice as part of a set of coherent policies, to see whether the Fund evaluated the potential impact of these reforms on vulnerable groups and whether it identified alternative social protection measures/programs to mitigate the impact.

3. Reduction of subsidies on food and fuel prices may have a significant impact upon the poor, immediately raising social protection concerns. Fuel subsidies are often claimed to be regressive, in that they generally benefit the wealthier parts of society that have access to private transport. But poor people are also affected if eliminating fuel subsidies leads to increases in the cost of public transport or the cost of fuel for farm equipment or for cooking. Food subsidies reduce the cost of the basic subsistence-consumption basket of the poor. We examine the extent to which the Fund has, in fact, suggested introducing social protection programs designed to compensate vulnerable households for their consumption losses caused by price subsidy reform.

4. To evaluate the implications of the Fund’s advice on subsidies for social protection, we carried out 11 representative country case studies, based on a review of country documents and

¹ I would like to thank Alisa Abrams, Jeni Klugman, Marcelo Selowsky, Ling Hui Tan, and Jianping Zhou for many helpful comments.

² See Appendix 1 for a discussion of the theoretical argument for the distortionary nature of price subsidies.

interviews with Fund staff members and country officials who had been involved in subsidy reforms in the past decade. In the case studies, we evaluate whether the Fund's approach to subsidies changed over time. We assess the extent to which social protection considerations were integral to the Fund's subsidy advice in our sample of countries, and to what extent actual policy implementation matched policy advice. More specifically, we evaluate whether the Fund's advice on subsidy reform generally took into account the impacts that subsidy reductions might have on society's most vulnerable groups. Thus, we would view the advice to be inadequate from a social protection perspective if it reduced the budgetary cost of subsidies yet did not address the welfare costs for the neediest parts of society and propose policies for alleviating these costs.

5. The rest of the paper is organized as follows. Section II reviews the Fund's approach to food and fuel subsidies, as elucidated in internal guidance to staff and external publications. Section III takes stock of the incidence and distribution of Fund advice on subsidy reform to countries through the channels of bilateral surveillance, programs, and technical assistance. Section IV discusses the various motivations for the Fund to address subsidy-reform issues in countries. Section V examines the extent to which the Fund specifically took social protection aspects into consideration in its subsidy reform advice. Section VI concludes.

II. THE IMF'S APPROACH TO FOOD AND FUEL SUBSIDIES: OPERATIONAL GUIDANCE

6. The welfare consequences of reforming subsidies on food and fuel prices have long been duly recognized by the Fund as part of its general operational guidance. The 2000 manual on best practices in price subsidy reform (Gupta and others, 2000), prepared by the IMF's Fiscal Affairs Department (FAD) as a guide for policymakers, provides guidance to staff on how to achieve the fiscal benefits of price-subsidy reform with minimal social disruption. It has been followed by a series of FAD working papers.

7. The manual offers well defined guidelines for the social protection context of subsidy reform programs. It states that the policy advice should: (i) assess the nature of existing subsidies; (ii) assess the socioeconomic and demographic characteristics of the affected population; (iii) examine the short-term and direct and indirect effects of subsidy reform; and (iv) assess the governance and administrative capacity for targeting. These guidelines are helpful in two important ways: (i) they are useful in determining whether targeted social protection could be a better option than existing subsidy programs; and (ii) they provide directions on how adverse impacts of subsidy reforms can be mitigated. The manual emphasizes that the adverse consequences of subsidy removal for the poor must be analyzed, and mitigated or offset accordingly.

8. A working paper by Arze del Granado and others (2010) specifies two channels through which an increase in the domestic fuel price affects welfare: a direct impact through prices of fuels consumed, and an indirect impact through prices of other goods and services. The total effect of price-subsidy reform is the sum of the direct and indirect effects. What is important for policy advice is the distribution of these effects across different income groups. As pointed out

by another working paper (Coady, Flamini, and Sears, 2015), the distribution depends on the relative importance of goods and services in household consumption baskets, and can be estimated by calculating the average impact for households in different income groups. The Fund's approach, in general, proposes that these impacts should be considered when formulating policy advice for reforming food and fuel price subsidies.

9. The manual (Gupta and others, 2000) suggests that mechanisms for protecting the poor should be established before a reform is initiated. Implementing such protection requires not only resources but also an effective delivery system to compensate affected households. Subsidy reforms can be carried out more rapidly in the presence of existing social protection programs, since these programs can be adapted to deliver required compensation to the poor. The importance of having such programs in place has been emphasized by Sdralevich and others (2014) and IMF (2017), who refer to the establishment of social protection prior to subsidy reform as a critical strategy to protect the vulnerable. They recommend that subsidy removal be accompanied by scaling up well-targeted social safety net programs.

10. Targeting, however, can be a major challenge if household-level poverty data are lacking and governance and administrative capacity are weak. Indeed, an IMF study on options for food and fuel subsidy reform (IMF, 2008c) reports that two major obstacles to subsidy reform are the general absence of safety net programs and governments' weak capacity to target subsidies. For temporary protection against price shocks, Gupta and others (2000) suggest making cash transfers to selected consumers, or limiting subsidies to a subgroup of population, and they recommend that these temporary measures should gradually be replaced by permanent social protection programs. IMF (2008a) suggests that short-term measures may include temporarily maintaining universal subsidies for goods that are relatively more important in a poor household's consumption basket, while long-term strategies are implemented to improve the targeting mechanism of social safety net programs. Sdralevich and others (2014) suggest that if the government lacks the administrative capacity for cash transfers, other initiatives such as public works programs can be expanded to help the vulnerable.

11. Coady and others (2010) propose two targeting methods to improve the design of safety net programs over time. These are: (i) targeting by socioeconomic or demographic characteristics or by geographic areas; and (ii) conditioning subsidies or cash benefits with self-targeting work or schooling requirements. Alleyne and others (2013), drawing on experience in Africa, suggest that targeted conditional cash transfers are the most appropriate instrument to mitigate the impact of subsidy reform.

12. Clements and others (2013) offer a useful summary of Fund recommendations for fuel subsidy reform. Reviewing various country experiences, they suggest six key elements of subsidy reform: (i) a comprehensive energy-sector reform plan with clear long-term objectives; (ii) an extensive communications strategy; (iii) appropriately phased price increases; (iv) improving the efficiency of state-owned enterprises; (v) targeted measures to protect the poor; and (vi) institutional reforms. Their study suggests that if well designed social protection programs

are implemented in a timely fashion, then such programs can be effective in protecting the poor and in reducing opposition to fuel and food subsidy reforms.

13. IMF (2008c) recommends collaboration and division of labor with the World Bank, so that the Fund can address the fiscal policy options and the Bank can contribute to the design of appropriately targeted safety net programs.

III. SUBSIDY REFORM ADVICE IN IMF COUNTRY WORK

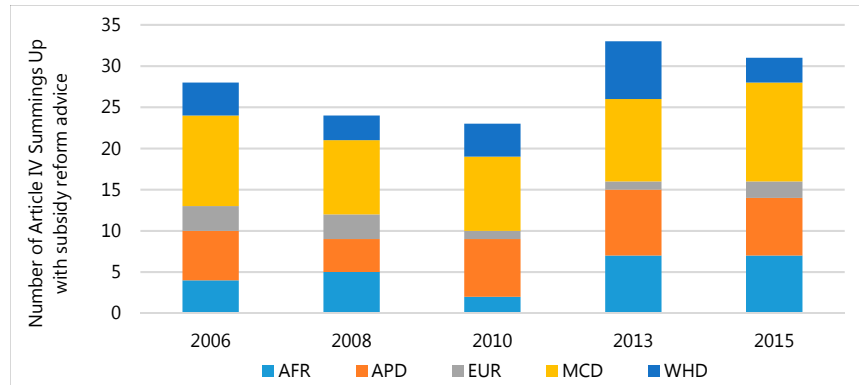
14. During the evaluation period, 2006–15, the IMF recommended price subsidy reforms in up to a quarter of its Article IV consultations across the membership. This statistic is based on a review of summings-up of Executive Board meetings on Article IV consultations for 2006, 2008, 2010, 2013, and 2015 for instances where Directors urged country authorities to eliminate, reform, or better target subsidies on food or fuel.³ The incidence of such subsidy advice declined from 22 percent of all Article IVs concluded in 2006 to 17 percent of all Article IVs concluded in 2010. It then rose to 25–26 percent of all Article IVs concluded in 2013 and 2015.

15. Looking across geographic regions, the highest incidence of IMF advice on subsidy reform in the surveillance context was found in countries of the Middle East and Central Asia (MCD) region (Figure 1). In that region, around half of the Article IV consultations contained advice on subsidy reform during the evaluation period (the share ranged from 43 percent of all MCD Article IVs concluded in 2010 to 55 percent in 2015). The lowest incidence of subsidy advice was found in Europe (EUR), where it featured in barely 10 percent of Article IVs (the share ranged from 10 percent of all EUR Article IVs concluded in 2008 to 3 percent in 2010 and 2013). This pattern may reflect the prevalence of such subsidies in the MCD region compared to EUR (see Coady and others, 2015). For Africa (AFR), Asia-Pacific (APD), and Western Hemisphere (WHD), subsidy advice was found in around 15 percent to 30 percent of all Article IVs (except in 2010 when it was found in only 8 percent of AFR Article IVs).

16. Turning to the program context, the most numerous instances of Fund conditionality on subsidy reform during the evaluation period were in countries in Africa (AFR), and the least numerous were in the Asia-Pacific region (APD) (Figure 2). AFR was the region with the greatest number of IMF arrangements approved during the evaluation period (72), and APD the fewest (10). Relative to the total number of Fund arrangements approved in the region during 2006–15, the share of those with conditionality related to subsidy reform was largest in MCD (50 percent), followed by AFR (35 percent), WHD (29 percent), EUR (26 percent), and APD (20 percent).

³ Meetings of the Executive Board related to Article IV consultations are concluded by a summing-up which records the extent of the Board's views on policy or operational matters. While a summing-up may not capture individual Directors' views, it serves to communicate the Fund's position both within the institution and externally.

Figure 1. Frequency of IMF Advice to Reform Fuel/Food Subsidies, By Region, 2006–15

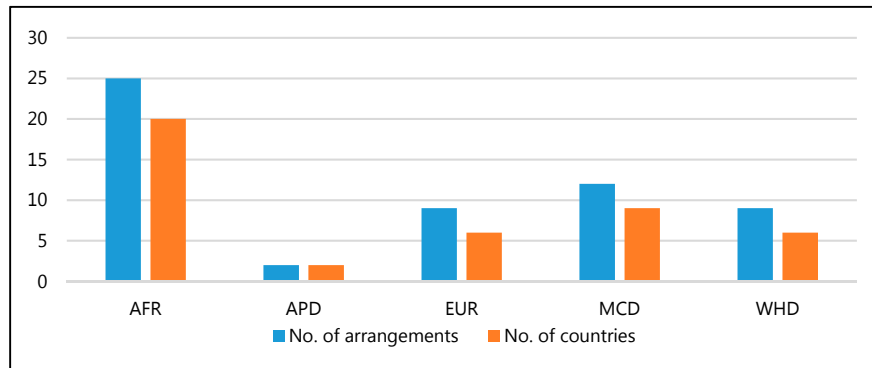


Source: IEO.

Notes: Data based on a review of summings-up of Executive Board meetings on Article IV consultations for 2006, 2008, 2010, 2013, and 2015 for instances where Directors urged the authorities to eliminate, reform, or better target subsidies on food or fuel.

AFR=African Department; APD=Asia and Pacific Department; EUR=European Department; MCD=Middle East and Central Asia Department; WHD=Western Hemisphere Department.

Figure 2. IMF Arrangements with Conditionality Related to Fuel/Food Subsidy Reform, By Region, 2006–15



Source: IEO.

Notes: Data based on a review of the IMF's Monitoring of Fund Arrangements (MONA) database for program conditions categorized under "Public enterprise pricing and subsidies" and "Price controls and marketing restrictions."

AFR=African Department; APD=Asia and Pacific Department; EUR=European Department; MCD=Middle East and Central Asia Department; WHD=Western Hemisphere Department.

17. During the evaluation period, the IMF also provided technical assistance on subsidy reform to many countries. Table 1 provides an overview of the extent and distribution of such TA, based on TA reports found in the institutional repository. AFR received the greatest attention in the area of subsidy reform. Since not all TA activities or missions produce a report (many of them simply leave an aide memoire with the authorities), the list represents a lower bound for the extent of IMF TA work on subsidy reform.

| AFR | APD | EUR | MCD | WHD |
|--|--|--|--|---|
| Angola (2014); Burundi (2009); Central African Republic (2007); The Gambia (2011); Ghana (2015); Madagascar (2014); Mali (2013); Mauritius (2006); Mozambique (2015); Republic of Congo (2007); Sao Tome and Principe (2015); Sierra Leone (2010); Togo (2010) | Bangladesh (2012); Indonesia (2013) | Belarus (2010); Latvia (2010); Moldova (2006); Ukraine (2014) | Algeria (2013); Djibouti (2012); Lebanon (2007); Mauritania (2011); Sudan (2012); Yemen (2012); | Bolivia (2009); El Salvador (2008); Haiti (2014); Honduras (2006); Nicaragua (2014); Paraguay (2011) |
| Source: IMF. | | | | |
| Note: Data based on based on TA reports found in the institutional repository. | | | | |

IV. MOTIVATIONS FOR SUBSIDY REFORM ADVICE

18. What were the main factors motivating the Fund’s subsidy advice? To answer this question, we conducted case studies based on a representative sample of 11 countries from among those that received Fund advice on subsidy reform as part of bilateral surveillance during the evaluation period (as reflected in Figure 1).⁴ The countries are: Bangladesh, Bolivia, Egypt, The Gambia, Ghana, Indonesia, Jordan, Mexico, Morocco, Mozambique, and Togo. They represent four regions: Africa, Latin America, Middle East, and Asia. They all had some form of fuel subsidies in place during 2006–15, and several of them had major food subsidies. A few of them are fuel exporters, while others are fuel importers. Some of them had IMF-supported programs during the evaluation period, and some received IMF technical assistance on subsidy reform.

19. These country cases—based on a review of country documents and interviews with staff and country officials (where available)—suggest that several reasons may have motivated the Fund to advise a country to reform price subsidies on food or fuel. These reasons are not mutually exclusive and Fund staff often appealed to more than one argument to try to convince a country to reform its price subsidies.

20. First, subsidies can have substantial budgetary implications. Suppose that consumer prices for food or energy are set at below-market prices. If the government compensates firms for these below-market prices through budgetary transfers, the transfers can be a substantial

⁴ Seventy-four countries received Fund advice on subsidy reform (as reflected in the summing-up of their Article IV consultation) in one or more of the following years: 2006, 2008, 2010, 2013, or 2015.

drain on the budget if the gap between the market price and the price charged to consumers is large. The adverse budgetary implications of food and fuel subsidies were a key trigger—and often the most important motivator—for the Fund’s intervention in a country’s subsidy policy. The following are some illustrative examples:

- In Ghana in 2007–08, the failure by state-owned enterprises (SOEs) in the energy sector to pass utility-price increases through to consumers was causing persistent SOE losses that were covered by budgetary transfers (subsidies). The IMF staff urged the authorities to reinstate automatic price adjustments for utilities as a measure to help lower the fiscal deficit.
- In The Gambia, staff noted that the budget crisis in 2010 was the main trigger for their advice on subsidy reform.
- Similarly, in Togo, large subsidy bills and their budgetary implications were the concerns driving the Fund’s involvement in the start of fuel-subsidy reform in 2009.
- In Jordan in 2006, a key element of Fund policy advice for improving the public-sector budget was the introduction of an automatic petroleum-pricing formula. This was because spending on the fuel subsidy accounted for a large share of government current expenditure. In addition, the recommended fiscal reform included phasing out food subsidies.
- In Egypt, the IMF staff discussed the importance of subsidy reform in the context of the budget, noting that if measures were not taken the 2006/07 deficit would reach 10 percent of GDP.

21. Even if the cost of a subsidy is not reflected in the budget, it can represent an important opportunity cost in terms of lost revenue (see Appendix 1 for the standard neoclassical explanation). Suppose, for example, that an oil-producing country maintains a fixed retail price for gasoline, where the price is set in either real or nominal terms. If the world price of petroleum rises, then the state is giving consumers an implicit subsidy on consumption, yet the subsidy does not appear in the budget. In oil-producing countries, SOEs typically are responsible for domestic petroleum sales, so that the implicit consumption subsidies, by harming the SOEs’ profitability, will have negative effects upon the public sector budget. Similarly, if food is produced domestically, and the retail price is fixed, then if the market price rises and producers are forced to accept the government fixed price, they will reduce production and absorb the losses. These losses will not appear in the government budget as consumer subsidies, although they implicitly are.

22. In Mexico in 2006, for example, the IMF staff noted that the budget had not benefited as much as might be expected from the rise in world oil prices because “the fiscal gain from PEMEX’s domestic sales [had] been significantly limited by the longstanding practice of holding domestic gasoline prices constant in real terms” (IMF, 2006b). The staff estimated that if domestic

fuel prices had followed world price trends since 2002, Mexico's overall public revenue in 2006 would have been 2 percent of GDP greater than what was being projected. This shortfall was an example of an implicit consumption subsidy that did not appear directly in the budget. The same argument was made in Indonesia, where the Fund staff noted in 2008 that the low domestic prices for fuel eroded the oil and gas sector's net contribution to the public budget.

23. A second important motivator of the Fund's involvement in food and fuel subsidy reform was the issue of expenditure quality or composition—that is, a concern that spending on subsidies crowds out other uses of budgetary resources. For example, a number of developing countries were spending more on energy subsidies than on public health and education.⁵ The Fund's subsidy advice was sometimes a response to such an imbalance of fuel subsidies over social spending or critical infrastructure. For example:

- In Bolivia, where the overall budget was more or less in balance during the evaluation period, the IMF staff argued that savings from subsidy reform could be used to enhance the provision of infrastructure, of which there was a shortage. The staff noted in 2007 that explicit and implicit fuel subsidies amounted to about 7 percent of GDP, crowding out infrastructure spending. In 2009, staff again encouraged the Bolivian authorities to revisit the policy on energy subsidies, this time with a view to "creating additional fiscal space for better-focused social programs" (IMF, 2010a).
- Similarly, in Indonesia, the Fund staff found that government expenditures were heavily skewed towards subsidies and that spending on investment and poverty alleviation was quite limited. In 2007, the staff estimated that an increase in average fuel prices would free up to 1.2 percent of GDP for use in high-priority applications such as social programs.
- In Ghana in 2010–11, the Fund staff argued that eliminating generalized subsidies on utility prices would make it possible to concentrate spending on priority development and infrastructure needs. And in 2014 the staff argued that a reduction in primary current expenditure, including through the elimination of fuel subsidies, would make room for a larger capital budget, among other things.
- In The Gambia, a key motivation for the government in 2006 was to obtain debt relief under the Heavily Indebted Poor Countries' (HIPC) initiative, which required prioritized social spending in health, education, and social safety net programs. This led the Fund staff to focus attention on potential budgetary savings from energy subsidy reforms.
- In Togo as well, the Fund urged the authorities to reform fuel price policy in order to create fiscal space for social and priority spending.

⁵ See Clements and others (2013), Table 6, for a list of such countries.

- In Mozambique, the 2011 Article IV mission emphasized that the removal of the fuel subsidy “created a unique opportunity to redirect public resources towards perennial and better targeted social protection schemes” (IMF, 2011b).

24. Our country studies indicate that while the initial trigger for Fund attention to subsidy reform was usually a fiscal problem—in that specific price subsidies had severe implications for fiscal sustainability and/or created important misallocation of public resources—once the existence of the fiscal problem was established, the Fund may have also appealed to other arguments to reinforce the case for reducing or eliminating price subsidies.

25. The third, and most common, motivation for the Fund’s concern with food and fuel subsidies was the inequities that they introduced. The Fund called attention to the regressive nature of many of the price subsidies, and argued that they were a relatively inefficient way of helping the poor. For example:

- A 2015 TA mission to Ghana showed that households in the top 20 percent of the household income distribution received 34 percent of the fuel subsidies while those in the bottom 20 percent received less than 9 percent.
- In Bolivia, analysis by the IMF staff in 2006 found that the bottom 40 percent of the income distribution received only about 15 percent of the benefits of the fuel subsidy, reinforcing the view that these subsidies were regressive.
- In Morocco in 2012, the IMF staff cited the authorities’ own studies showing that only 9 percent of all subsidies benefited the poorest quintile of the population while 43 percent benefited the richest quintile. For diesel subsidies, the contrast was starker, with 75 percent of subsidy payments benefiting the richest quintile.
- The case of Egypt was even more extreme, with the Fund staff noting in 2006 that: “The richest quintile of households reaps 93 percent of the gasoline subsidy and 65 percent of the natural gas subsidy while many poor households do not have access to the required food ration cards,” and pointing to World Bank simulations showing that “the poverty headcount ratio would drop by 6.1 points to 13.5 percent if subsidies were reduced by 50 percent and the savings [were] allocated to households as cash transfers” (IMF, 2006a).
- In Bangladesh, the staff pointed out in 2015 that energy subsidies were regressive.

26. Fourth, the Fund was also concerned about negative externalities caused by energy subsidies, such as increased congestion, or air pollution. For example, the 2006 Article IV mission to Mexico suggested not only adjusting the administered price of gasoline to remove the implicit subsidy that emerged when world prices surged but also restoring the excise tax on gasoline to “address negative externalities of gasoline consumption” (IMF, 2006b). The 2015 Article IV mission to Mexico endorsed the authorities’ proposal to fix fuel excises per liter of fuel and linked this proposal to the staff’s recommendation to “increase carbon taxes in Mexico to levels

commensurate with the negative health and environmental externalities associated with fossil fuel use” (IMF, 2015c). In Bolivia, the Fund staff emphasized in 2006 and 2008 that high energy subsidies encouraged smuggling and discouraged investment and energy conservation.

27. In a related vein, in some cases the Fund pointed out that fuel subsidies had adverse impacts on other sectors of the economy. Bangladesh is a case in point, where staff noted that energy subsidies (reflecting the differential between domestic and international market prices) weakened the financial position of the state-owned Bangladesh Petroleum Corporation. Since the subsidies were financed through loans from state-owned commercial banks (SCBs), this affected the financial health of the SCBs and had repercussions on the financial sector.

V. DID IMF ADVICE ON SUBSIDY REFORM TAKE SOCIAL PROTECTION INTO ACCOUNT?

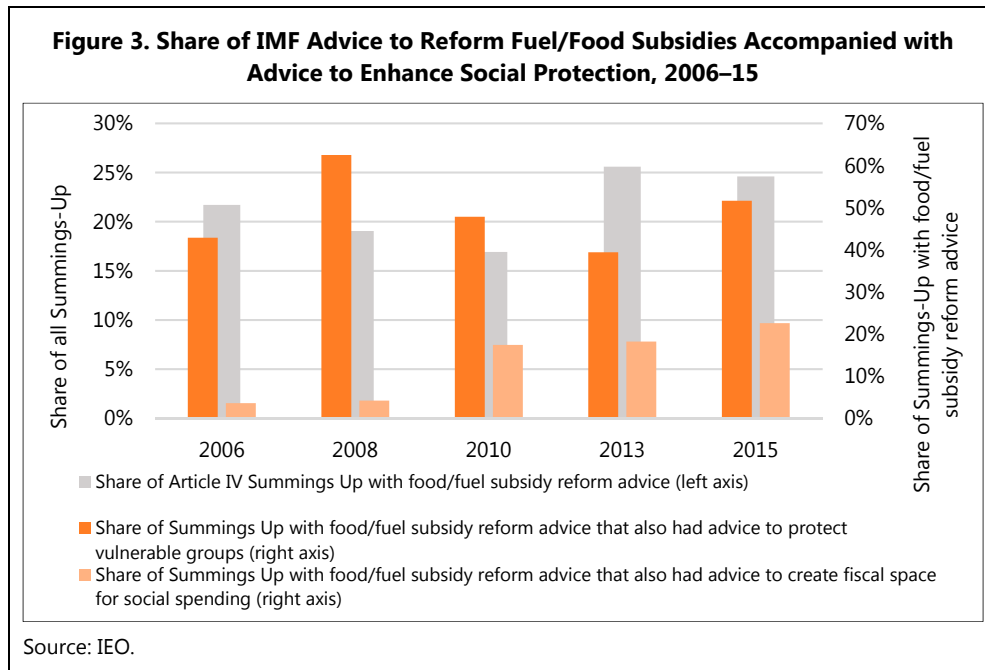
28. To what extent did the Fund consider the distributional impact of changes in the food- or fuel-subsidy regime? And to what extent did the Fund provide advice on social protection measures or programs to compensate for changes in those price subsidies that affected the most vulnerable population groups? Key questions of focus are: whether the Fund’s advice was relevant to the country, whether it was backed up by analytical work (including in cooperation with the World Bank or other experts), whether it was feasible, and whether it was seen by the authorities to be useful and to have influenced policy implementation.

29. The Fund’s concern for social protection in the context of food- or fuel-subsidy reform became more pronounced in the later part of the evaluation period. Figure 3 shows, for alternate years during the evaluation period, the number of Article IV summings-up that contained advice on food- or fuel-subsidy reform and, within that group, the number of summings-up that also expressed a concern for social protection, by urging country authorities either to introduce measures to limit the impact of a subsidy reform on vulnerable groups or to use the fiscal savings from subsidy reform for priority social spending. The share of Article IV summings-up that expressed such concern for social protection in the context of recommending subsidy reform increased from 46 percent of those concluded in 2006 to 74 percent of those concluded in 2015.⁶ In the program context, however, IMF (2017b) noted that among the 18 LIC programs approved during 2010–16 that included conditionality on energy subsidy reform, less than 40 percent included an assessment of social safety net measures or an explicit program condition to mitigate the impact of the reform on the poor.

30. In practice, the extent and depth of the Fund’s advice on social protection and its relationship to subsidy reform differed widely across the 11 case study countries. A summary of the Fund’s advice in the countries is presented in Appendix 2. We group the 11 countries into three categories: Group A, in which the Fund provided general encouragement to protect the

⁶ It should be noted that the summings-up metric may underestimate the share of Article IV consultations that provided advice on food/fuel subsidies and social protection, as there may have been relevant discussions that were not reflected in the summings-up.

vulnerable but not specific advice; Group B, in which encouragement was accompanied by more specific analysis and advice on protecting the vulnerable; and Group C, in which, in addition to encouragement and advice, program conditionality to protect the vulnerable was introduced.



A. The Gambia, Togo, Egypt, Morocco, and Mexico: The Fund Provided General Encouragement to Protect the Vulnerable but Not Specific Advice

31. In almost all Group A countries the Fund focused its advice on mitigating severe budgetary pressures. In all cases, fuel and food subsidies comprised a significant part of current expenditures, and hence detailed policy advice for either eliminating or reducing these subsidies was given. This advice has generally been successfully adopted and the subsidy burdens have been reduced. Although the Fund was well aware of the possible implications of these subsidy reforms for the social safety net, it generally left social policy advice either to other agencies, such as the World Bank, or to the countries' own experts.

The Gambia

32. The budget crisis in 2010 was the main trigger for subsidy reform in The Gambia.⁷ The country had a three-year arrangement under the Poverty and Growth Facility (PRGF) that was

⁷ Previously the Fund had had some discussion with the Gambian authorities on subsidies and social protection in the context of the 2008 food and fuel price increases. The 2008 Article IV mission advised the authorities that the budget could not afford to subsidize petroleum products and urged them to regularly review retail prices to keep them in line with world prices.

approved in February 2007.⁸ In the first half of 2010, severe revenue shortfalls led to fiscal slippages which necessitated remedial measures to keep the program on track. To mobilize revenues the government proposed, among other things, reforms to the fuel price formula. Announcement of the revised fuel price formula in the 2011 budget speech to the National Assembly was made a structural benchmark in the seventh program review (in December 2010). An FAD TA mission was dispatched in December 2010 to offer advice on adopting an automatic fuel price mechanism.

33. In January 2011, the government restructured the formula for setting domestic retail prices of imported petroleum products to allow for a gradual pass-through of changes in international prices. The new formula used a three-month moving average of international prices with a cap per liter to reduce the price volatility in the retail market. The excise-tax component of the formula was adjusted to align market prices to the formula value whenever the cap or the averaging procedure kept market prices below their full pass-through level.

34. The Fund became directly involved in the technical issues of fuel subsidy reforms. A second TA mission was sent in May 2011 to review the pricing formula for petroleum products. The 2011 TA mission took a rather critical view of the government's proposed changes, noting that the formula unnecessarily delayed the pass-through of international prices and that the subsidy component was not transparent. The mission also found that the subsidy for kerosene was costly and not well targeted.

35. The 2011 TA mission acknowledged that eliminating fuel subsidies could have a sizeable adverse impact on poor households, and recommended exploring alternative ways of protecting poor households from rising petroleum prices. It provided some examples drawn from the experiences of other countries (Gabon 2007; Ghana 2005; Indonesia 2005, 2008; Jordan 2005, 2008; and Mozambique 2008). The report did not provide specific analysis of social protection in The Gambia, although the mission claimed that the Department of Social Welfare had adequate targeting capacity and would be able to expand cash transfers to the poor and other programs addressing the needs of vulnerable groups.

36. Fuel-subsidy reform came to the forefront again in 2012 in the program supported by a three-year arrangement under the Extended Credit Facility (ECF). One of the fiscal policy objectives in that program was to reduce and eventually eliminate fuel subsidies through monthly implementation of fuel price adjustments. The staff noted that the price increases had been smaller than those suggested by the pricing formula but the authorities argued that larger adjustments would be disruptive for the general population and could lead to public protests.

37. The ECF-supported program required prioritized social spending. Hence the staff encouraged the authorities to direct the additional revenues from reduced fuel subsidies toward

⁸ The program was extended by one year in early 2010.

pro-poor programs. Staff members who were interviewed for this evaluation noted that considerations for higher spending in The Gambia's health, education, and social safety net programs led the staff to focus attention on energy subsidy reforms. The 2015 Article IV staff report mentioned that fuel subsidies were eliminated in July 2014, but it did not mention what, if any, measures had been taken to mitigate the impact on the poor.

38. Overall, the Fund was relatively uninvolved with social protection in The Gambia although social protection issues were duly considered by the staff. Staff members interviewed for this evaluation said that they did not become directly involved in the details of social protection since there was a general feeling that they lacked expertise in this area. They mainly focused on allocation and distributional issues while working closely with UNICEF, the United Nations Development Program (UNDP), and the World Food Program (WFP) to judge how the savings from subsidy reform could be best used to support poor households.⁹

Togo

39. In Togo, large subsidy bills and their budgetary implications were the driving concerns for the Fund's involvement in the initiation of fuel-subsidy reform. Togo received a three-year arrangement under the PRGF in April 2008. A central objective of the PRGF-supported program was to bring Togo's excessive public debt to a sustainable level through gradual fiscal adjustment and debt relief. The program also envisaged considerably higher spending on infrastructure, health, and education to promote economic growth and improve basic living conditions for the Togolese people.

40. Togo responded to the 2008 food price shock by allowing full pass-through of rising international food prices. The authorities mitigated the social impact through measures such as subsidies for seeds and fertilizers to boost production and sales of food stocks. The Fund praised Togo for its response and staff supported the authorities' plans to increase subsidies for inputs for subsistence agriculture in the 2009 budget.

41. However, the Fund was less supportive of Togo's fuel subsidies. The authorities limited the pass-through of world oil prices in 2007 and 2008 to mitigate the impact of rising prices on real incomes. In doing so, the government incurred contingent liabilities equal to 1.5 percent of GDP to oil distributors as a result of their reduced margins. The Fund expressed serious concern about the contingent liabilities and future risks. According to the staff, although full price liberalization would be the best option from an economic perspective, a reasonable choice would be to maintain administered prices in Togo for the medium run, given the country's past

⁹ In 2012, the Gambian government launched the National Social Protection Steering Committee (NSPSC), with UNICEF's support, to promote social protection programs. In 2013, a Memorandum of Understanding was signed between the government, UN agencies (including UNICEF), and the IMF to pursue the social protection agenda. However, while IMF local staff or consultants in the field may have attended some NSPSC meetings, we did not find evidence of participation by headquarters-based IMF staff or mention of this work in staff reports.

practices and those of its neighbors, as long as the price-setting mechanism was automatic and transparent. A structural benchmark in the PRGF program required the authorities to conduct a review of the mechanism for oil price adjustment. In addition, the Fund augmented Togo's access under the program, in part to finance the higher cost of fuel support to the electricity sector.

42. An FAD technical assistance mission visited Togo in June 2010 to assist the authorities with the adoption of an automatic formula for petroleum product pricing. The TA team identified a series of steps that needed to be taken to move to a new fuel pricing mechanism. Among these were the choice of a smoothing mechanism and the level of desired taxation that could be implemented.

43. Some concern was shown about the social implications of the fuel subsidy reforms. The TA report analyzed how doubling fuel prices would affect household real incomes, although this was based on calculations for a sample of seven African countries, not Togo specifically.¹⁰ The TA mission provided certain suggestions, admittedly vague, to mitigate the social impacts of these price changes. Among these suggestions were applying a greater degree of smoothing to kerosene than to other fuel products and expanding existing programs targeted to the poor. The TA report included a short annex that listed mitigating measures that Ghana, Indonesia, and Jordan had taken in the context of their fuel subsidy reforms.

44. Togo adopted a new adjustment mechanism for petroleum product prices, based on the recommendations of the 2010 TA report, at the end of 2010. However, the mechanism was not applied until June 2011. According to the Fund's 2011 Article IV staff report, the authorities did not initially pass through higher global prices to consumers out of concern for social and political stability. The Fund staff expressed disapproval, emphasizing the "unintended regressive distributional impact and mounting fiscal costs" of the fuel subsidies (IMF, 2011d).

45. The Fund showed more concern for social protection in Togo during the 2010/11 global surge in oil prices. The authorities adopted measures to cushion the social impact of the price increases, such as eliminating taxes on providers of public transport and granting a transport allowance to workers and pensioners earning less than \$2.50 per day, as well as to university students. The Fund staff expressed approval, noting that the authorities "appropriately developed temporary, targeted social measures through a consultative process" (IMF, 2011d). Furthermore, the staff worried that the Togolese population remained vulnerable to further price surges and highlighted the lack of mechanisms to target the poorest segments in the informal sector and rural areas.

¹⁰ It should be noted that household survey data for distributional analysis are not always available to IMF staff. Thus, the use of data from other countries did not necessarily reflect a lack of effort by the staff to analyze distributional implications for Togo.

46. Togo's fuel subsidies rose again in 2011 and 2012. As neighboring countries adopted pricing policies yielding higher fuel prices, and as enforcement efforts were strengthened, there was less smuggling to Togo and this led to higher official imports and subsidy outlays. The 2013 Article IV mission proposed a phased increase in fuel prices to curb the burdensome costs of subsidies. This price increase would not include the price of kerosene, which was mostly consumed by the poor. In addition, the staff advised Togo to implement accompanying measures targeted to protect the most vulnerable. The authorities agreed with the staff regarding the need to eliminate fuel subsidies, but were deeply concerned about the probable political and social reaction to such a policy change. The staff cited the example of Ghana, where an automatic adjustment mechanism had been successfully implemented. The staff also suggested a public information campaign to explain the fiscal cost and regressive impacts of fuel subsidies in terms of forgone spending on social and infrastructure programs.

47. In staff interviews, it was noted that the Fund made significant efforts to encourage the containment of low-quality spending in order to create fiscal space for social and priority spending. The staff contributed to the adoption of an automatic price-adjustment mechanism with a smoothing formula. According to staff members interviewed, however, the authorities sometimes expressed the belief that the Fund staff was not sensitive enough to political realities. There was relatively little direct Fund involvement with social protection. Regarding social protection and the social safety net system, staff members reported that the Togolese authorities were working with experts from the World Bank, International Labor Organization (ILO), UNDP, UNICEF, WFP, and World Health Organization (WHO) to develop a national strategy for social protection (see World Bank, 2012).

Morocco

48. In Morocco, the IMF staff viewed the overhaul of the food-subsidy system and the elimination of petroleum price subsidies as a major task in budget consolidation: "Energy and food subsidies constitute a heavy budgetary burden that Morocco cannot afford" (IMF, 2006d). Further, the elimination of food subsidies was expected to lead to a useful diversification of agricultural production in the medium-to-long run. The authorities recognized that the fiscal outlook hinged on effectively managing the subsidy issue and the Fund supported their strategy to: (i) gradually adjust domestic energy prices to international prices to allow for their eventual liberalization; and (ii) gradually replace untargeted food subsidies with direct subsidies targeted at vulnerable groups. Additionally, staff suggested putting a ceiling on subsidy spending for sugar consumption.

49. The IMF was aware of the role that universal subsidies played in social protection in Morocco. In view of the importance of the subsidy system for social cohesion, both the authorities and the Fund stressed the need to build consensus around the subsidy reform strategy. Given their concern for social and political sensitivities, consumer confidence, and the fact that a fundamental reform of the subsidy system would take time, the authorities initially decided to adopt only a limited set of short-term measures such as raising the prices of products

that were mainly consumed by higher-income households. The Fund staff agreed that the budget could absorb the impact of higher world prices for subsidized products without undermining macroeconomic stability in the short term, but pointed out that “better targeting of subsidies” would be crucial in the medium term (IMF, 2008b). However, it did not elaborate on how this better targeting should be achieved.

50. Shortly thereafter, based on experiences from several countries and with World Bank assistance and IMF encouragement, the Moroccan authorities started implementing pilot programs to distribute targeted cash assistance, including conditional cash transfers aimed at reducing school drop-outs, particularly of young girls (TAYSSIR), and the provision of free basic healthcare to the poor (RAMED). These pilot programs were expanded under the 2011 budget, but growing regional unrest made full implementation of the subsidy reform politically difficult.

51. The Fund’s 2011 Article IV mission urged the authorities to overcome public and political resistance through “good targeting” and a well-designed and well-implemented communication strategy (IMF, 2011e). The staff noted that reform was more pressing for energy subsidies than for food subsidies because the latter (on sugar and flour) were less costly and better targeted than subsidies on fuel. The staff suggested introducing a price mechanism allowing for some gradual adjustment in energy prices as a transition to a more comprehensive subsidy reform.

52. The Moroccan government established three technical commissions which worked with economic partners and civil society to evaluate the macroeconomic impact of possible reforms, formulate proposals to revise the price structures of subsidized products, and develop an alternative targeted social protection scheme. The Fund staff contributed to this debate by analyzing the economic and social trade-offs involved in subsidy reform and highlighting lessons from international experience in implementing such reforms (Mazraani and Versailles, 2013). The government also stepped up its public communication on the cost of subsidies, including devoting a full annex to this issue in the 2013 budget law.

53. In 2013, the Moroccan authorities adopted a mechanism to index the domestic prices of liquid petroleum products to world prices, combined with a hedging operation for diesel to cap the price increases that might be needed in the first year of implementation. In 2014, the authorities eliminated subsidies on gasoline, industrial fuel, and the fuel used for electricity production, and they began implementing quarterly reductions of the per-unit subsidy on diesel. By January 2015, subsidies on all liquid petroleum products had been eliminated. The subsidy reforms were successful, leading to a reduction in the subsidy bill by more than 4 percent of GDP between 2012 and 2015. The elimination of fuel subsidies was accompanied by an expansion of social programs in health and education, and the introduction of a number of mitigating measures to support low-income widows and physically disabled individuals and to limit fare increases in public transport.

54. The Fund’s views on Morocco’s subsidy reforms were very positive. The Ex Post Evaluation of Morocco’s 2012 Precautionary and Liquidity Line Arrangement stated that: “Subsidy

reform stands out as a major achievement, especially in light of the difficult regional socio-political context" (IMF, 2015a). In early 2016, Fund staff reported that the Moroccan authorities were planning to gradually reduce subsidies on food, but not on butane. Staff welcomed these plans while stressing the need to "continue to expand social programs targeting the most vulnerable groups" (IMF, 2016a).

55. Moroccan authorities who were interviewed for this evaluation stressed that the reforms were initiated and owned by the government. They added that the Fund, while supportive, did not contribute any in-depth analysis of social protection beyond calling for better-targeted policies.

Egypt

56. Throughout the evaluation period, the Egyptian authorities and the IMF staff members advising them were primarily concerned with reducing the fiscal deficit. The Fund's advice on subsidy reform included raising the prices of fuel and subsequently raising the price of electricity. The Fund also recommended moving implicit subsidies into the budget to improve transparency. The staff made the link between subsidy reform and social protection from the start, even if it did not offer specific advice on how to replace universal subsidies with targeted support for the poor.

57. The staff noted the highly regressive nature of Egypt's fuel subsidies and emphasized the high rate of leakage to high-income households. The 2006 Article IV staff report cited a World Bank study estimating that the poverty headcount ratio would drop by 6.1 points to 13.5 percent if subsidies were reduced by 50 percent and the savings were allocated to households as cash transfers. A SIP for the 2007 Article IV consultation (Mattina and Cebotari, 2007) noted that subsidies for selected energy and food products were a major form of social protection in Egypt, with energy subsidies being "the most regressive of the in-kind subsidies." The staff recommended replacing across-the-board subsidies with better-targeted support for social programs, although it did not suggest how this targeting should work.

58. In 2008, the Article IV mission reported that in-kind food subsidies would be gradually replaced by a system of cash transfers, but it recognized that the capacity to adequately target these transfers would take some time to develop. The staff welcomed the authorities' intention to work with the World Bank to improve the efficiency and targeting of subsidy programs. At the same time, the staff urged the authorities to introduce an automatic adjustment mechanism for domestic fuel prices, "while strengthening cash-based social programs to protect the most vulnerable groups" (IMF, 2009a).

59. The 2010 Article IV staff report noted that the authorities "hope[d] to resume the reform of fuel subsidies in 2011, after crisis impacts will have fully subsided" and reiterated that "subsidy reform should be a priority" (IMF, 2010c).¹¹ After the revolution and political transition in 2011,

¹¹ According to the staff report, restructuring energy subsidies had been a key objective of the government's post-2004 reforms. Several ad hoc adjustments in domestic fuel prices had been made since 2004 and in late

the IMF staff, in announcing a staff-level agreement with Egyptian authorities on a 12-month Stand-By Arrangement (SBA), noted that while reform of the “highly inequitable and costly system of subsidies” was needed to improve the efficiency of public spending and help reduce the fiscal deficit in the medium term, the Fund “share[d] the government’s view that immediate implementation of such reforms [was] not feasible in the context of this arrangement as additional preparatory work [was] needed to ensure that an effective safety net [was] in place to protect the low-income households” (IMF, 2011f).¹² In 2012, in announcing a staff-level agreement with the Egyptian authorities on a new SBA, staff supported the authorities’ plan to “reduce wasteful expenditures, including by reforming energy subsidies and better targeting them to vulnerable groups” and to direct resources to boost social spending and infrastructure investment (IMF, 2012e).¹³

60. Over time, the Egyptian authorities introduced a number of fuel- and food-subsidy reforms in line with the Fund’s advice. A substantial part of the 2014 Article IV discussions was devoted to these reforms as well as the accompanying measures that were introduced to mitigate the impact of the reforms on low-income households. The staff reported that prices of fuel products were increased by 40–80 percent in July 2014 and those of electricity by 20 percent; and that a new system of smart cards had been launched to monitor wholesale and retail fuel sales and combat smuggling.¹⁴ The staff supported the authorities’ plan to continue to raise fuel and electricity prices over the ensuing four to five years, with the aim of eliminating all fuel subsidies by then—except those for liquefied petroleum gas (LPG), which were targeted to the poor. At the same time, food subsidies were being reformed as part of a broad program to enhance the social safety net. Bread subsidies were streamlined and the system of food ration cards reformed to allow greater flexibility in the choice of goods and to reduce leakages. The authorities launched two cash transfer schemes: an unconditional benefit for the elderly and disabled, and a conditional transfer for families to support children’s health and education in poor areas. In addition, according to the staff report, savings from the subsidy reforms would partly finance planned increases in education and health spending, which would help to improve social outcomes.

61. Interviews with Fund staff members working on Egypt indicate some ambivalence concerning Egypt’s social protection policies. The staff did not provide technical-level advice, such as on pricing formulas. Staff members did not object to the authorities’ approach of allowing prices of LPG to adjust more slowly than prices of other energy products, in order to protect the poor. But they viewed the large subsidy cuts in July 2014 as excessive, because of the

2007 the government launched a plan to bring energy prices close to actual costs by 2010. Notwithstanding the restructuring efforts, however, products consumed by higher-income families, such as diesel and gasoline, remained highly subsidized in 2010.

¹² The SBA did not materialize.

¹³ This SBA did not materialize either.

¹⁴ “Egypt to issue smart cards to fuel stations next month,” *Reuters*, May 23, 2013.

possibly severe impact on the most vulnerable.¹⁵ Staff did urge the authorities to step up cash transfers but the discussion was at a general, relatively superficial, level, mainly because the World Bank was advising the authorities on the details of cash-transfer policy and design.¹⁶

62. The IMF has recently become more involved in social protection in Egypt in the context of a program. In November 2016, the Fund approved a three-year arrangement under the Extended Fund Facility (EFF) to help Egypt restore macroeconomic stability and promote inclusive growth. As a prior action for the program request, the authorities increased gasoline and diesel prices at the pump by an average of 35 percent, and the EFF-supported program also imposes a ceiling on fuel subsidies as a quantitative performance criterion. At the same time, the program sets a structural benchmark to increase social spending on programs such as cash transfers, social pension, school meals, health insurance, and free medicine for the poor, by at least EGP 25 billion by mid-2017. Egyptian authorities interviewed for this evaluation confirmed the view that the IMF has begun to pay more attention to social protection, but at the time of writing it is too early to determine whether these concerns have been adequately integrated into the program's macroeconomic framework.

Mexico

63. Implicit fuel subsidies became an issue in Mexico in 2006 primarily because of rising world fuel prices. Since Mexico is an oil exporter, the rising prices also raised government revenues, so their budgetary impact was more or less neutral. The motivation for subsidy reform in this case stemmed from microeconomic considerations: the subsidies were causing permanent allocative distortions. Thus, the Fund suggested adjusting the administered price of gasoline to remove the implicit subsidy and restoring the excise tax on gasoline to address negative externalities of gasoline consumption.

64. Interviews with Fund staff members involved with fuel subsidy reform in Mexico indicated that the authorities agreed with the staff on the technical mechanism by which fuel-prices should be changed. The main discussion was on the appropriate speed of the adjustment, though other discussions took place about removing subsidies while exempting those on LPG, which were viewed as benefitting poor people. One of the key messages from these discussions was that subsidy reform could create fiscal space, some of which could be used to expand social protection.

65. Staff reports made general references to the connection between subsidy reform and social protection. For example, the 2007 Article IV mission called on the authorities to "avoid

¹⁵ "Tempers fray, prices rise as Egypt cuts fuel subsidies," *Reuters*, July 6, 2014.

¹⁶ In April 2015, the World Bank approved a US\$400 million multi-year "Strengthening Social Safety Net" Project for Egypt. The project provides support for the Egyptian government's established *Takaful* and *Karama* cash transfer program, with assistance in properly identifying the poor and ensuring efficiency, responsiveness, and accountability of the program (World Bank, 2015).

increasing subsidies that are not targeted to the poor, such as those on household electricity, gasoline and diesel,” adding that “ideally such subsidies should be reduced, including through targeting” (IMF, 2007c). As the Mexican authorities began gradually adjusting gasoline prices to bring them in line with international prices, the 2011 Article IV mission noted that “the elimination of the fuel subsidy could be complemented by enhancements in the safety net to protect the most vulnerable segments of the population from large increases in fuel prices” (IMF, 2011c). However, the staff did not elaborate on how energy subsidies could be targeted to low-income groups.

66. The staff provided similar advice regarding electricity subsidies. The 2008 Article IV mission called for targeting the costly electricity subsidies to the poor. The 2015 Article IV mission reinforced this message, although it was more specific in suggesting how to limit the impact on the poor of removing these subsidies: it urged the authorities to compensate low-income households through “existing well-targeted cash transfer programs” (Di Bella and others, 2015).

67. The Mexican authorities stressed that the removal of fuel subsidies was successfully achieved. The government gradually eliminated the fuel subsidy (which at one point represented 1 percent of GDP) by raising prices at a double-digit rate during 2014, helped by the sharp drop in international prices at the end of that year. According to the authorities, this price decline not only permitted the subsidy to be removed without a negative social impact, but also allowed it to be replaced by a tax that generated revenues of 1.1 percent of GDP in 2015. In 2016, the authorities started liberalizing fixed prices for fuel, with implied excises near the optimal carbon-tax levels proposed by staff (IMF, 2016d). The Fund played a role in helping to achieve a smooth transition from fuel subsidies. It did so by urging the authorities to direct the savings from reforming fuel subsidies to social protection.

68. In the context of Mexico’s subsidy reform, the Fund did not offer specific advice on social protection but rather general encouragement to enhance, or at least protect, the welfare of the poor. It was not involved in technical issues associated with the social protection system, such as whether to allow individuals to deposit part of their transfer payments into savings accounts; whether to switch to cash transfers on a bi-monthly basis; or the use of “mobile money.”¹⁷ No attempts were made to estimate the impact of social protection programs on measures of the consumption of low-income households. Fund staff members who worked on Mexico said in interviews that they emphasized the importance of social protection but did so through encouragement rather than through explicit targets. In particular, the Fund staff placed strong emphasis on the need for a social-protection program to be in place before embarking on

¹⁷ Mexico’s social protection system serves about 8 million families. Each of them has a savings account and a debit card. Initially, the program did not allow deposits to be made from the debit cards into the savings accounts. However, later the policy was changed and people were permitted to make such deposits. About 75–80 percent of users of the social protection system live in remote rural areas where they have difficulties using their debit cards.

subsidy reform. Some staff members said that given the Fund had little in-house experience as a basis for advising on social protection, and could rely on the Mexican government's own expertise, the topic was discussed only at a general level.

69. The view of Mexican authorities was that Mexico already had in place well-targeted social protection programs (e.g., *Progresa/Oportunidades/Prospera*) that update cash transfers annually in line with inflation, which had been established in the late 1990s after the Tequila Crisis. Their view was that the Fund understood that Mexico had the capacity to carry out subsidy reform and social protection support on its own. This collaboration with the IMF was part of a bilateral agenda, so the work did not overlap with that of other international institutions.¹⁸

B. Ghana, Mozambique, Indonesia, and Bolivia: The Fund Provided Encouragement and More Specific Analysis and Advice on Protecting the Vulnerable

70. In Group B countries, the Fund's subsidy reform advice was often quite specific, and not always motivated by budget deficits; other factors were the negative effects of relative price distortion caused by subsidies, as well as infrastructure shortages caused by the preemption of government resources by spending on subsidies. The Fund did offer advice on social protection, but the advice was not of uniform quality and in some cases was not adopted by the country authorities.

Ghana

71. Discussions between the IMF and Ghana about fuel subsidy reform and the social impact of petroleum price changes began well before the evaluation period. In fact, reform of the petroleum sector was an important component of Ghana's three-year PRGF-supported program approved in 2003. Though the Fund had advocated moving to liberalize petroleum prices by mid-2003, the authorities preferred a longer transition period during which the population could become accustomed to regularly changing prices.

72. In May 2005, FAD fielded a TA mission to Ghana to evaluate the distributional impact of petroleum price reform through a thorough poverty and social impact analysis (PSIA). The mission found that the top 20 percent of the household income distribution were receiving 34.3 percent of the total subsidies, while the bottom 20 percent received only 8.8 percent. It calculated that application of the new fuel pricing formula would require a price increase of 17 percent for petrol, 49 percent for kerosene, 50 percent for fuel oil, 67 percent for diesel, and 108 percent for LPG. The mission emphasized that these price increases would have a direct

¹⁸ In October 2014, the World Bank approved a multi-year US\$350 million Social Protection System project to improve the access of the *Prospera* program beneficiaries to social and productive programs, and to develop instruments for an integrated social protection system. Under this initiative, the World Bank is supporting the Mexican government in developing tools such as a unique registry of beneficiaries and a social program catalogue, and providing technical assistance in capacity building to strengthen the operation and implementation of the *Prospera* program. See World Bank (2014).

effect on the real income of households, as well as an indirect effect as higher petroleum prices were passed through to the prices of other goods and services.¹⁹ The mission team assessed the magnitude and distribution of both these effects, in order to identify alternative approaches for protecting the real incomes of poor households, and to discuss the implications for the role and structure of the existing system of petroleum taxes.

73. The Ex Post Assessment of Ghana's 2003 PRGF highlighted the Fund's contribution to the energy sector reforms: "Significant progress in the reform of the energy sector was not achieved before well into the 2003-06 PRGF, largely reflecting the increased focus on the sector in work done by the World Bank and the introduction of poverty and social impact analysis. Moreover, technical assistance on the petroleum price adjustment provided an important input for policymakers on the design of mitigating measures" (IMF, 2007a). The assessment drew two lessons for fuel-subsidy reform from Ghana's experience: (i) energy-pricing reforms would need to be accompanied by adequate social safety nets to mitigate the impact on the poor; and (ii) it was crucial to undertake a public information campaign in support of sensitive economic reforms.

74. Ghana's rising fiscal deficits led the Fund to focus again on energy sector reforms in 2008-09. Staff noted that underpricing of electricity supplies and petroleum products had "required government subsidies, undermined the financial accountability of the state-owned enterprises, and left a legacy of cross-debts and arrears" (IMF, 2009c). The new PRGF program approved in 2009 included a number of conditions designed to ensure the adoption and maintenance of cost-recovery pricing. Reinstatement of automatic bi-weekly price adjustments for petroleum products was a prior action for the program request. Other IMF conditionality for the program pertained to implementing a new electricity tariff structure, using a phased approach to bring the average tariff to cost-recovery levels, and managing petroleum product prices to avoid fiscal subsidies (a structural benchmark was introduced in the third and fourth program reviews in May 2011). As for measures to mitigate the impact of subsidy removal on the poor, staff noted that Ghana had a "broad social safety net program" (including subsidized electricity tariffs) and that the authorities' plan to expand cash transfers for qualifying households, provide free school uniforms to children in deprived communities, and free books for pupils in basic public schools would "safeguard low-income groups from fiscal tightening" (IMF, 2009c).

75. The authorities increased pump prices by 30 percent in January 2011 but did not make further price adjustments until late in that year. They raised fuel prices by 15 percent in December 2011, but subsequently reversed some of this increase to avoid public unrest. Utility tariffs were not adjusted on a regular basis. During the final review of the PRGF program, in mid-2012, the Fund mission expressed concern about the high cost of the energy subsidies and the adverse implications of the below-cost pricing for the financial viability of public utility

¹⁹ It was estimated that the proposed subsidy reform would reduce real household consumption by 8.5 percent overall, with the poorest 40 percent experiencing a 9 percent real reduction.

companies. The mission team urged the government to consider at least some increase in domestic energy prices. While the authorities agreed, in principle, that energy prices should reflect cost-recovery levels, they felt that low-income groups would have serious difficulties coping with higher fuel prices. The staff advised them to expand “well-targeted social programs” (IMF, 2012c), but did not discuss what those programs might be. Although there was some general discussion of poverty reduction in the context of the PRGF program, it was not connected to energy subsidy reform.

76. Energy subsidy reforms continued to feature in Ghana’s three-year program under the Extended Credit Facility (ECF) approved in March 2015, but this time with explicit consideration for their social impact. Prior actions for the ECF program request included implementing the petroleum product pricing structure reflecting full cost-recovery. In June 2015, FAD sent a TA mission to advise the government on rationalizing expenditure through containing the wage bill and eliminating fuel subsidies. The mission discussed in detail the Ghanaian fuel pricing mechanism and problems with its implementation, and recommended minor modifications in the pricing formula.

77. Although the price increase that was required to eliminate Ghana’s subsidies was not substantial for most products and would mostly affect well-off households, the 2015 TA mission recognized that it would significantly lower the real incomes of the poor. Hence it recommended that existing well targeted social assistance programs—specifically, the flagship Livelihood Empowerment Against Poverty program—be expanded in the short term with a view to broadening their coverage and increasing their benefits. The mission noted that the authorities were working on developing, with World Bank support, a national household registry database for all social protection interventions. For the longer term, the mission advised the authorities to develop an integrated social protection system to address the weaknesses and fragmentation of the current system. It stressed the importance of having a well-functioning social safety net in place before action was taken to liberalize fuel prices, so as to protect low-income groups and avoid public pressure to reintroduce the subsidies.

78. Some Ghanaian officials who were interviewed commented that the motivating factor behind the Fund’s interest in price subsidy reform in Ghana was clearly deficit reduction, and that the Fund did not provide much guidance to the authorities on how to reduce subsidies. On the other hand, the view among (non-FAD) IMF staff members was that the local authorities had the necessary expertise on how to reform subsidies. According to them, the Fund did offer advice on how frequently to vary fuel prices, and also brought to bear cross-country information on relative pricing. They noted that Fund missions also emphasized the need to protect low-income households from the effects of price increases.²⁰

²⁰ Ghana had a power pricing structure with differential rates. Electricity rates were thus based upon consumption: low users had low marginal rates and those who used more paid a higher rate.

79. The Fund staff members who were interviewed noted that UNICEF and the United Kingdom's Department for International Development (DFID) led in designing the cash transfer program that was used to mitigate the impact of Ghana's fuel subsidy reforms. An ex post survey carried out by UNICEF and funded by DFID showed a 66 percent effectiveness rate in the targeting of benefits. Ghanaian officials responsible for social protection confirmed that the Fund was not directly involved in the creation of this targeting system;²¹ in their opinion, the most important contributor was UNICEF, as well as various civil society organizations. These officials stressed that the Fund had little directly to do either with the creation or evaluation of social protection programs. However, the Fund, in its interactions with Ghana, did stress that if there were negative impacts on the poor from subsidy reforms, then the social safety net should be enhanced to compensate for the impact of the subsidy changes.

Mozambique

80. In Mozambique, the Fund made little mention of food- or fuel-subsidies until the 2008 worldwide spike in food and fuel prices. In 2008, the Fund reported that large domestic food and fuel price increases early in the year had triggered riots and "exposed potential social vulnerabilities" (IMF, 2008e). The IMF and the World Bank organized a joint seminar in Maputo in May 2008 to help the government identify best practices for mitigating the social impact of increases in food and fuel prices. In the event, the government kept fuel prices below market prices to mitigate the social impact of the price increases. It also implemented a temporary subsidy on urban transport and launched a Food Production Action Plan to boost domestic food output. In April/May 2009, the government again locked pump prices and asked fuel importers to continue to provide fuel at below-market prices.

81. The Fund criticized the fuel subsidies for burdening the fiscal and external accounts (the subsidies had sharply raised fuel imports, because consumers from neighboring countries sought to benefit from Mozambique's lower fuel prices) and creating fiscal risks. The government began to remove the fuel subsidy in March 2010, in accordance with its commitment under the program supported by the three-year Policy Support Instrument (PSI) approved in 2007. At the same time, the government committed to protecting vulnerable segments of the population by "replacing the fuel subsidies with better targeted and more effective alternative measures benefiting those truly in need" (IMF, 2009d). Petroleum product prices were gradually raised to

²¹ According to Ghanaian officials, the Ministry of Employment and Social Welfare used direct targeting of poor people or, more specifically, vulnerable children, disabled people, people over 65, pregnant women, and infant children. The number of targeted people started at fewer than 100,000 but is now about 147,000. Since about 2.2 million people (8.4 percent of the population of Ghana) are classified as very poor, the number targeted is relatively small. Originally, cash grants were paid directly to households, but the Ministry is now using biometric electronic cards, which households can use to withdraw money from banks. The goal is that eventually about 500,000 of the 2.2 million very poor people in Ghana will receive direct aid. A recent joint study has been carried out with the University of North Carolina looking at the connection between cash transfers and health and education, with overall positive conclusions.

market levels by August 2010; diesel prices were also raised but remained below equilibrium levels.

82. Riots broke out again in September 2010 following increases in administered prices of bread, water, and electricity.²² The social unrest brought the government's fuel subsidy reform to a halt. It also prompted the authorities to introduce a bread subsidy, rescind the tariff increases for electricity and water for low-usage households, and leave in place the subsidies for urban transport. The Fund staff considered that these measures were "better targeted than the blanket fuel subsidy and believed to benefit the most vulnerable segments of the population" (IMF, 2010b). Regarding the fuel subsidies, the staff sympathized with the motivation but nonetheless advised the authorities that keeping retail prices below market prices was a policy that could not be sustained for long. At the same time, the staff emphasized that there was a need to assess how the impact of the necessary price adjustments could be cushioned for the poor.

83. The Fund was able to directly influence subsidy reform and social protection through the leverage offered by the 2010 PSI arrangement (which succeeded 2007 PSI arrangement). Under the 2010 arrangement, the Fund advised the authorities to create more fiscal space in order to be able to afford a sustainable social protection system. Specifically, with regard to subsidy reform, the staff advised the authorities to make more frequent and smaller price adjustments than had been done in the past to avoid a renewed build-up of large fuel subsidies and to improve the fuel price-setting formula in the medium term. Staff also encouraged the authorities to explore options for cross-subsidization of various petroleum products.

84. With regard to social protection, the IMF staff contributed actively through a joint pilot exercise to develop a social-protection floor for Mozambique. The exercise involved UN agencies, the ILO, the World Bank, and bilateral partners and included: (i) a World Bank-led review of existing social security programs and expenditure; (ii) a costing exercise led by the ILO, focusing on public works programs, conditional cash transfers, and a universal pension system; (iii) a Fund-led assessment of available fiscal space consistent with the macroeconomic framework; and (iv) a simulation of the impact of policy options on the poverty gap, led by UNICEF. The 2011 Article IV staff report contained a useful summary of the existing social-protection programs in Mozambique. According to Zhou (2017), the IMF–ILO collaboration in Mozambique was a success, and the government adopted a social-protection floor package costing less than 1 percent of GDP, designed by the ILO and endorsed by the IMF. The IMF team was a strong advocate for social protection and urged the Mozambican government to phase out fuel subsidies and repurpose the funds to finance the social-protection floor.

²² "Deadly riots in Mozambique over rising prices," *BBC*, September 1, 2010; "Seven killed as rising food prices spark riots in Mozambique," *The Independent*, September 1, 2010.

85. The authorities followed the Fund's advice on subsidy reform to some extent. Fuel prices were raised in April 2011 and again in July. But though cost recovery was effectively achieved in early 2012, the subsequent global oil price increases again caused a need to compensate fuel importers. The staff supported the payment of separate fuel subsidies to private minibus operators that provided the bulk of transport services to the public, and encouraged the government to apply the price-setting formula for all petroleum products. Starting in 2013, the Fund also drew attention to electricity tariffs, which were below cost-recovery levels.

86. In 2015, the government requested TA from the IMF and the World Bank to initiate energy sector reforms. The IMF TA mission noted that fuel subsidies were an inefficient way to protect the poor.²³ Nonetheless it recognized that fuel-subsidy reform would affect household welfare, estimating that, on average in Mozambique, a fuel-price increase of 20 percent would decrease income by close to 2 percent for households in the bottom 40 percent of the welfare distribution. The TA mission laid out a strategy for reform, based closely on Clements and others (2013). It recommended streamlining the automatic price-setting formula through the introduction of reference pricing and the implementation of an automatic fuel-pricing mechanism with a smoothing component. The TA report devoted an entire annex to the social impact of the reform and possible mitigating measures for the most vulnerable. In particular, the report recommended that social and cash transfer programs be identified to mitigate the impact of fuel price increases on the most vulnerable.

87. The 2015 Article IV discussions revisited the issue of fuel subsidies at length. The Fund staff noted that the prevailing low international prices meant that retail fuel prices no longer needed to be subsidized, and indeed provided an opportunity for reform. The staff urged the authorities to follow the recommendations of the TA mission and implement an automatic fuel pricing mechanism as early as possible. The authorities, however, felt that further study was needed, including on reforming the centralized fuel-importing system and measures needed to mitigate the impact of reform on the most vulnerable. A selected issues paper prepared for the Article IV consultation (Palacio and Segura-Ubiergo, 2016) described the system of fuel subsidies in Mozambique, and provided a series of recommendations for continued subsidy reforms, but contained only minimal discussion of social protection.

88. Since the evaluation period, social protection issues have continued to influence other areas of subsidy reform in Mozambique, as the authorities continue to allocate resources to subsidize prices of food such as wheat and flour. Mozambican authorities who were interviewed for this evaluation noted that very small increases in the price of bread have, in the past, led to social instability; the authorities will therefore continue to partially subsidize public transport in order to minimize the cost-of-living increases for the most vulnerable parts of the population. In the authorities' view, a low and stable price for public transport is also important for social

²³ It estimated that almost two-thirds of the total subsidy benefit was received by the richest 20 percent of the population while the poorest 20 percent of the population received less than 5 percent of the subsidy share.

stability, and thus the government expects to spend about 0.4 percent of GDP on non-fuel price subsidies. The authorities agreed that it was appropriate for the IMF to be concerned with social protection issues.

Indonesia

89. Like Mexico, Indonesia is an example in which the Fund suggested energy-subsidy reform primarily because of the inherently distortionary nature of these subsidies. Overall energy subsidies were not a serious macro-fiscal issue in Indonesia; rather, the Fund staff expressed concern that government expenditures were heavily skewed toward subsidies, which were crowding out high-priority spending such as on social programs. The staff also outlined several other concerns regarding fuel subsidies: lower domestic prices for fuel were contributing to excessively high levels of fuel consumption; the difference between domestic fuel prices and international oil prices was encouraging smuggling; the oil and gas sector's net contribution to the public budget was being eroded by the artificially low domestic fuel prices; and the fiscal pressure coming from large subsidy bills could potentially cause a deterioration in investor sentiment and raise bond yields.

90. For all these reasons, the Fund recommended scaling back untargeted fuel subsidies and making progress toward market-based prices. The Indonesian authorities agreed with the Fund that untargeted subsidies were not prudent and that they crowded out priority spending. But political pressure was a key difficulty in tackling these subsidies. Fund staff recommended the implementation of a mechanism for automatic adjustments of energy prices, in order to depoliticize these adjustments and remove the risk of higher subsidies.

91. A selected issues paper for the 2007 Article IV consultation (Mati, 2007) estimated that a 10–40 percent increase in average fuel prices could free up 0.3–1.2 percent of GDP in additional resources over the medium term, but it also noted that some of the gains would need to be spent on compensatory programs to avoid a negative impact on the poor. The same paper estimated that a 10–40 percent increase in electricity tariffs could free up 0.2–0.6 percent of GDP in the medium term, but it also emphasized that tariff-rate increases had to be carefully designed to take into account the impact of different types of subsidies on the poor. Specifically, it recommended raising the rates for use of high-intensity electricity (900-volt to 6600-volt capacity) rather than those for low-intensity electricity (450-volt capacity), which provided the most benefit to the poor.

92. In May 2008, the Indonesian authorities increased domestic fuel prices by about 29 percent in an effort to contain fuel subsidies in the context of volatile global oil prices; they felt that automatic adjustments were politically infeasible at that juncture. The Fund supported this move although the staff noted that ad hoc price adjustments were a second-best alternative to automatic adjustments. To limit the burden of the 2008 fuel price increase on the poor, part of the fiscal savings from the subsidy reduction was channeled to a cash-compensation scheme whereby the government disbursed monthly payments to 19 million households through the end

of the year.²⁴ The government also expanded its rice distribution program, and encouraged households to switch from heavily subsidized kerosene to more economical LPG as the main cooking fuel by supplying them with free LPG stoves.

93. In April/May 2013, FAD provided technical assistance to the Ministry of Finance on how to generate enough fiscal space to accommodate the government's plans to scale up social protection programs over the next five years. The TA mission demonstrated how much social protection expenditure was required for the country, then calculated how much budgetary saving would need to be generated in order to create the necessary fiscal space. In comparison with the Article IV staff reports, which were largely descriptive, the TA report analyzed in detail the breakdown between changes in social insurance and changes in social assistance schemes, and generated a variety of alternative scenarios—for example, for health insurance increases and their costs. Such counterfactual simulations are quite useful in judging the sustainability of alternative policies.

94. The TA team estimated that the expansion of social protection would lead to a deficit of 4.6 percent of GDP in 2017, which would not be sustainable. It concluded that energy subsidy reform could generate the necessary fiscal space to accommodate the desired social program increases, and it provided suggestions, drawn directly from the IMF study by Clements and others (2013), on how to implement such a reform. Staff members who were interviewed for this evaluation indicated that the Indonesian authorities may not have been highly motivated by the TA report, but did take some general directions from it. Some Indonesian officials who were interviewed felt that the Fund's advice on reducing subsidies was useful but provided nothing that was not already known to the government.

95. In mid-June 2013, the Indonesian government raised subsidized petroleum prices by 44 percent, raised subsidized diesel prices by 22 percent, and approved in the revised 2013 budget a temporary cash-compensation scheme for vulnerable groups. The IMF staff urged the authorities to follow the recommendations of the TA mission and replace broad energy subsidies with targeted cash transfers, building on the system of transfers that was already in place. However, the authorities felt that further increases in subsidized fuel prices would be too politically challenging, going into an election year.

96. With the change in government in October 2014, fuel prices were raised in November and two major reforms came into effect at the beginning of 2015: the discontinuation of the gasoline subsidy and the introduction of a fixed per-liter subsidy scheme for diesel. The 2014 Article IV mission reported that cash transfers equivalent to 0.1 percent of GDP were made to 15.5 million low-income households (the bottom 25 percent of the income distribution) shortly after the November 2014 fuel-price hike, in a move similar to that taken after the June 2013 price hike. The rationale for the price hikes—a need to reallocate fuel subsidies to infrastructure

²⁴ See Kwon and Kim (2015) for more on the development of cash transfers in Indonesia.

spending—was communicated effectively to the public. Staff hailed the reforms as “very successful” and stated that they could “serve as a model for other countries” (IMF, 2016b).

97. According to several Indonesian officials who were interviewed for this paper, the Fund’s contribution to promoting social protection was minor compared with those of the World Bank and the Australian-Indonesian Program for Economic Governance. Their view was that the Fund staff talked about compensating poor people for the subsidy cuts, but really only as an afterthought. The World Bank, on the other hand, was considered to have given very good advice on compensatory social spending. These interviewees’ view was that the World Bank’s work on subsidies was much better than the Fund’s in incorporating the impact of subsidy reform on the poor. For example, they emphasized that the Fund had no input into the development of various types of electronic cards for distribution of funds for social benefit programs.

Bolivia

98. In Bolivia, the Fund had long emphasized that rigidities in domestic petroleum pricing were giving rise to large explicit and implicit subsidies. Bolivia, like Indonesia and Mexico, is an oil producer so the concern was with expenditure allocation rather than with budget imbalances. In 2006, these subsidies were estimated at 7 percent of GDP. Staff argued that the subsidies were inefficient in that they largely benefited upper-income groups, and that they encouraged smuggling and discouraged investment and energy conservation. Accordingly, the mission team suggested that subsidies be phased out by moving domestic petroleum-product prices gradually to market based levels.

99. At the same time, the Fund recognized the need to make fiscal space in order to support social programs for the poor. Indeed, this desire “to make the budget an effective anti-poverty tool”—was a major motivating force for subsidy reform (IMF, 2007b). A technical assistance mission by FAD in October 2004 for a poverty and social impact analysis had examined the magnitude and distribution of fuel subsidies in Bolivia, assessed the welfare impact of subsidy reform, and proposed potential mitigating measures for the poor. The results, published in Coady and others (2006), showed that the bottom 40 percent of the income distribution in Bolivia received only about 15 percent of the benefits of the fuel subsidy. The 2008 Article IV mission urged the authorities to consider reducing explicit and implicit subsidies on hydrocarbons “while using part of the substantial resulting fiscal savings to protect vulnerable groups”—for example through targeted subsidies for food and urban transport, as had been suggested in the 2004 technical assistance report on poverty and social impact analysis (IMF, 2009b).

100. In 2009, FAD fielded another TA mission to Bolivia to analyze the fiscal and distributional effects of petroleum product pricing. The mission team noted that eliminating fuel subsidies would cause significant increases in the corresponding domestic prices. It discussed the

distributional impact of these potential increases and the corresponding social implications.²⁵ The team was careful to note that although the direct impact of fuel subsidy elimination would be borne most heavily by higher-income households, the indirect costs, via consumption of other fuel-related products and services, would affect poor households quite heavily. The suggestion was to introduce an automatic fuel-pricing mechanism that distinguished between different fuel types based on their usage by different income groups.

101. The authorities attempted to end fuel subsidies abruptly in December 2010, without taking measures to address social-protection concerns. Gasoline prices rose by almost 73 percent and diesel prices by more than 80 percent.²⁶ The social unrest that resulted led to the measure being reversed. Drawing a lesson from this episode, the 2011 Article IV mission advised the authorities to develop the capacity to enhance targeted social policies so as to facilitate the reduction of fuel and food subsidies.²⁷ In particular, the mission noted that “success in removing generalized fuel subsidies and allowing price signals to stimulate agricultural production will depend upon the ability of the state to deliver adequate compensatory measures to the most vulnerable groups” (IMF, 2011a). This message was reiterated in 2012, when staff advised the authorities that successful subsidy reforms would need to be accompanied by “better targeting of social policies to protect the most vulnerable groups and/or special policies for public transportation” (IMF, 2012b). Staff cited successful experiences in countries such as Indonesia (2005, 2008), Iran (2010), Jordan (2005), and Mozambique (2008); however, the authorities indicated that social resistance to reducing fuel subsidies would be too difficult to overcome.

102. Interviews with Fund staff members with direct experience in Bolivia support the general observation that the Fund offered advice that helped to shape the direction of subsidy reform, as well as measures to aim the saving towards vulnerable groups. However, the Fund did not become involved in the details of these measures, which were really dictated by Bolivian political realities.

103. As for social protection, Fund staff members indicated that the World Bank contributed to the Fund’s thinking. They noted that general discussions took place with World Bank staff about the impact of public transfers to the poor, and about cash transfers, starting with some specific programs for school children, pregnant women, and retirees, but that these discussions were not linked to fuel subsidy reform. A 2015 Working Paper (Vargas and Garriga, 2015) found that transfer programs to specific population groups, such *Renta Dignidad* for elderly people,

²⁵ The team calculated the direct costs of the fuel subsidy to be 1.1 percent of GDP while further indirect costs were estimated to be 2.8 percent of GDP. It also estimated that 58 percent of the cost of the subsidy benefited the highest two quintiles of the income distribution while only 23 percent benefitted the bottom two quintiles.

²⁶ “Bolivians protest fuel price increases,” *CNN*, December 28, 2010.

²⁷ Staff also advised the authorities to discontinue food subsidies (price controls). However, the authorities explained that this was part of their strategy to empower small farmers and expand agricultural production.

played an important role in reducing inequality and poverty in Bolivia.²⁸ It is not completely clear how much influence, if any, the Fund had on these programs.

C. Bangladesh and Jordan: The Fund Provided Encouragement and Specific Advice, and Introduced Program Conditionality to Protect the Vulnerable

104. In Group C countries, the IMF's subsidy advice was motivated by the need to strengthen the position of the energy sector, as well as to reduce the burden of lending by the banking system to the energy sector. The overall objective was to create fiscal space that could be used to strengthen the social safety net. Although the Fund offered considerable advice for social programs, implementing this advice was made very difficult by country-specific political and social factors.

Bangladesh

105. In Bangladesh, the Fund recommended energy subsidy reform because of two key concerns: first, energy subsidies weakened the financial position of the state-owned enterprises (SOEs) in the energy sector; and second, the subsidy was financed mainly by loans from state-owned commercial banks (SCBs) and these loans remained mostly overdue. Thus, the subsidies affected the financial health of both SCBs and SOEs. In the context of the 2003–06 PRGF program, the Fund sought to address these problems in collaboration with the World Bank. From the beginning, the Fund recognized that the policy agenda in Bangladesh's energy sector was "very large and complex with significant social implications" (IMF, 2003). The World Bank helped to develop automatic pricing formulas for electricity, gas, and petroleum products, which were to be implemented in a phased approach toward cost recovery and reducing subsidies.

106. At the fourth review of the PRGF program, in January 2006, the Fund inserted a new structural performance criterion related to energy sector reform. The condition required the authorities to (i) finalize a report quantifying all quasi-fiscal costs arising from prices below international levels in the energy and power sector, including the implicit subsidies and the revenue forgone by underpricing of natural gas; and (ii) identify measures to mitigate the impact of price adjustments on vulnerable groups. This is one of the earliest examples in our evaluation period where the Fund introduced conditionality explicitly related to social protection.

107. A poverty and social impact analysis mission by FAD in March 2006 showed that Bangladesh's energy subsidies were poorly targeted. The analysis, reported in IMF (2006c), indicated that the poorest quintile received only 11 percent of the benefit, while the top quintile received 35 percent. For implicit subsidies from underpriced natural gas, which was produced domestically, these numbers were 9 percent and 45 percent, respectively. The TA mission

²⁸ Vargas and Garriga's (2015) analysis was highlighted in the 2015 Article IV consultation because Bolivia was one of the pilot cases for the IMF's initiative to integrate "newly emerging macro-critical issues" (in this case, inequality) into surveillance work.

suggested that a better way to target government assistance for poorer households would be to “eliminate fuel subsidies and use the savings to increase spending on well-targeted social programs” (IMF, 2006c). At the fifth review of the PRGF program, in October 2006, staff indicated that the abovementioned structural performance criterion was satisfied on time. However, there was no discussion of identified measures to mitigate the impact of price adjustments on vulnerable groups.

108. The issue of food and fuel subsidies came up again in the 2008 Article IV consultation. In response to the volatility in international commodity markets, the Bangladeshi authorities had raised fuel and fertilizer prices but not by enough to keep within the budget’s subsidy provisions. The IMF staff stressed that any additional SOE losses arising from international price rises should be met by domestic price increases, so that priority spending on key social and development programs would not be further compromised. The authorities agreed in principle, but noted the political difficulty in further raising prices; they stressed that the Fund’s preference for an automatic price-adjustment framework could only be considered in the medium term. The staff, on its part, acknowledged that the natural disasters and subsequent rapid food-price increases of early 2008 had made life more difficult for large segments of the population and reversed some earlier reductions in poverty. It reiterated that reducing open-ended price subsidies and replacing them with “more affordable and better-targeted social safety nets” would provide fiscal space for the increases in public investment and provision of social services that were necessary to sustain poverty reduction and achieve the Millennium Development Goals (IMF, 2008d). The same theme was carried through the 2009 and 2011 Article IV consultations.

109. The staff did not elaborate on the “better-targeted social safety nets” envisaged. The 2008 Article IV staff report mentioned a broadening in the scope of existing safety net programs and the introduction of a new cash-for-work scheme that would cover 2 million rural families during the 100 days between harvests. The 2011 Article IV staff report mentioned TA that was pending from the World Bank for better tracking of subsidy schemes and their effectiveness.

110. Bangladesh’s three-year ECF program approved in April 2012 actively addressed the issue of energy-subsidy reform, while encouraging the authorities to use the resulting fiscal space for social programs. As a prior action for the program request, the authorities adjusted retail electricity and petroleum prices to contain budgetary transfers to the Bangladesh Petroleum Corporation and the Bangladesh Power Development Board to Tk 150 billion in FY 2012. The program included as a structural benchmark the adoption of an automatic adjustment mechanism for retail petroleum prices, to ensure full pass-through of international prices by the end of 2012.

111. The specifics of the recommended formula for automatic petroleum-price adjustment were elaborated by an FAD TA mission in October 2012.²⁹ The formula had three key objectives: (i) ensure full pass-through of changes in international fuel prices to domestic retail prices; (ii) contain the level and volatility of the fiscal cost of fuel-pricing policy; and (iii) avoid reliance on an ad hoc approach to fuel pricing, since such an approach creates political pressures that often result in long periods of fixed prices, unsustainable fiscal costs, and tensions between the government and fuel suppliers.

112. The 2012 TA mission recognized that although fuel subsidies were an inefficient and fiscally expensive approach to protecting the poor from rising international fuel prices, eliminating them could have a sizeable adverse impact on poor households. The TA report included a brief overview of Bangladesh's social safety net. The advice was to expand the budget for these programs, possibly with some improvements in targeting effectiveness, to address concerns about poverty while containing the fiscal cost. The report added that other public expenditures (e.g., on education and healthcare) as well as infrastructure expenditures (e.g., on roads and electrification schemes) could also be expanded.

113. The Fund's approach was to help Bangladesh create fiscal space for efficient spending on social programs following the World Bank's suggestions. The 2012 ECF-supported program also included conditionality (in the form of an indicative target) to ensure adequate budgetary provisions were made for social spending during the program period. This conditionality specified a floor on "social-related spending by the central government," defined to include all the spending categories of the education and health ministries as well as spending on more than 80 social safety net programs in the budget. The staff report for the ECF program request included an annex on social safety net programs in Bangladesh. The annex, prepared jointly with World Bank staff, noted that Bangladesh had a number of operating schemes, although some of them were "weakly administered and/or poorly targeted" (IMF, 2012a). Under the ECF-supported program, resources were expected to be freed up by reducing/eliminating energy subsidies and directed through better-designed social safety net programs to compensate the households most vulnerable to rising fuel and food prices. The work to improve the design of social safety net programs would be led by the World Bank, non-governmental organizations, and other development partners in this area. The Fund's collaboration with the World Bank was commended in staff interviews.

114. At the end of the ECF program in 2015, the Fund staff reported that while the authorities had "made good progress," they needed to "further rationalize subsidies by systematically aligning domestic fuel prices with global prices" and to raise spending on infrastructure and social spending targeted to the poor (IMF, 2015b).

²⁹ The purpose of the TA mission was to identify issues and options to be considered in adopting an automatic mechanism for petroleum-product pricing.

115. Interviews with staff members suggested that IMF missions to Bangladesh were deeply concerned about social issues, and tried to generate savings from subsidy reform to finance social or other priority spending. According to staff members, the authorities were supportive and viewed the Fund's engagement as positive, but local political factors were a major problem in carrying out the staff's recommendations.

Jordan

116. At the beginning of the evaluation period, Jordan confronted a number of difficult fiscal issues. The country had completed a two-year SBA with the Fund in July 2004 and was under post-program monitoring (PPM) by the Fund. The PPM missions were concerned about the country's high fiscal deficit and public debt, which were driven in large part by Jordan's high implicit subsidies for fuel.³⁰ The discussions mainly focused on improving the debt-to-GDP ratio and decreasing the budget deficit. A key element of Fund policy advice for improving the public sector budget was to move forward with the introduction of an automatic formula for petroleum pricing. Accordingly, the Fund recommended monthly price adjustments for a few fuel products whose prices were already at market levels but not yet fully automated. In addition, the fiscal reform included phasing out food subsidies.

117. An FAD TA mission visited Jordan in February 2005 to analyze the distributional effects of reducing subsidies on petroleum products and to suggest policies to mitigate the effect of price increases on the poor. The mission found that price subsidies on diesel, fuel oil, kerosene, LPG, jet fuel, and asphalt amounted to 3.6 percent of GDP and went disproportionately to high-income households: the top quintile received an estimated 42 percent of the benefits, while the bottom quintile received only about 9 percent. Nonetheless, the mission recognized the importance of shielding the poor as much as possible from the cost-of-living increases that would result from eliminating the subsidies. To that end, it suggested a number of short-term mitigating measures, such as maintaining "lifeline rates" for electricity; phasing in the price increases, with LPG prices left for last; and raising minimum wages and pensions. In the medium term, the mission took the view that a generalized, targeted cash subsidy was the best way to assist the poor. It advised the authorities to improve the coverage and targeting of the National Aid Fund (NAF), the state-funded social safety net for the poor.

118. In February 2008, the Jordanian authorities increased petroleum product prices by an average of 47 percent, effectively eliminating the subsidies, and they implemented a mechanism for monthly fuel-price adjustments. LPG prices remained subsidized and were not covered by the monthly mechanism. Compensatory expenditure measures were taken to protect vulnerable groups: (i) an increase, on a progressive scale, in public sector wages and pensions; (ii) cash

³⁰ The 2006 Article IV consultation and fourth PPM discussion noted that while public debt was declining in 2006, the country still had a budget deficit of 16 percent of GDP and a public debt-to-GDP ratio of 73 percent. One of the key staff recommendations was to lower the public debt ceiling from 80 percent of GDP to 60 percent of GDP by 2011.

assistance to the poor in the private sector; (iii) an increase in assistance provided by the NAF; and (iv) financial support targeted at small-scale farmers. The IMF staff welcomed the removal of fuel subsidies and noted that “sizable compensatory measures were understandably implemented in order to gain public acceptance and protect vulnerable groups” (IMF, 2008a).

119. Notwithstanding these efforts, high fuel and food prices for much of 2008 continued to put pressure on the fiscal position. The cost of food subsidies, in particular, remained high. The 2010 Article IV mission suggested further cuts, such as phasing out subsidies on LPG and wheat; revising the electricity tariff schedule to reduce subsidies and limit them to low-income households through lifeline tariffs; and reviewing the NAF’s eligibility criteria to improve its coverage of the poor and minimize leakage to higher-income households. Instead, however, in early 2011, the authorities responded to social pressures by putting the monthly fuel price adjustment on hold and fixing prices for most petroleum products at what was deemed to be a socially acceptable level.

120. The 2012 Article IV mission argued forcefully that, in light of Jordan’s high debt burden and limited fiscal space, universal subsidies should be replaced with better targeted subsidies and transfers to help the poor and vulnerable, and that doing so would also free up funds for capital spending and for current spending on education and health. A SIP prepared for that consultation (El-Said, 2012) estimated the cost of energy price subsidies at close to 6 percent of GDP in 2011. The paper argued that every dinar transferred to the bottom two income quintiles through gasoline subsidies cost the budget about JD 5, whereas a simple cash distribution of these benefits to all households would have been less costly and more effective in assisting the poor.

121. The three-year SBA for Jordan that was approved in August 2012 had a significant focus on energy-subsidy reform. At the same time, the World Bank was putting in place a TA program in that area, focusing on the analysis of the poverty impacts and policy implications of changes in subsidy regimes, as well as options for improved targeting mechanisms. The 2012 SBA envisaged considerable fiscal consolidation. It included structural benchmarks for energy-subsidy reform such as: announcing a medium-term electricity/energy strategy incorporating the World Bank’s inputs by end-September 2012; implementing a step increase in the price of diesel by October 2012; and implementing annual increases in electricity tariffs starting by January 2014.

122. The 2012 SBA program also provided for the implementation of targeted transfers to alleviate the higher fuel costs associated with the phasing out of fuel subsidies. The provisions took the form of two structural benchmarks: (i) to introduce, by end-January 2013, “targeted transfers, which would protect the poor from higher oil prices should they increase beyond \$100 per barrel”; and (ii) to implement a national unified registry for targeting of subsidies by end-October 2013 (IMF, 2012d; IMF, 2013).

123. Jordan’s authorities eliminated fuel subsidies in late 2012 with the exception of those on LPG (which still retains a small subsidy). They reinstated the monthly price-adjustment mechanism at the beginning of 2013. To mitigate the social impact of the subsidy removal, a

cash transfer was introduced for families with an annual income below JD 10,000 (US\$14,100) (who amounted to 70 percent of the population) if the oil price rose above \$100 per barrel. The transfer was to be paid in three installments, the first of which was disbursed in the last few weeks of 2012.³¹

124. The Fund staff's appraisal of Jordan's subsidy reform was mixed. It found that while the fuel subsidy reform was successful, little progress had been made on reducing/removing the food subsidy or in reforming electricity tariffs and water subsidies, largely because of the potential social impact. According to the Fund's Ex Post Evaluation of Jordan's 2012 SBA, the removal of fuel subsidies was a major achievement but the cash transfers could have been better targeted. The staff reported that the benchmark to establish a unified registry for subsidies was met on time.

125. Discussions with Fund staff members indicate that the country team for Jordan was very mindful of the poor and the most vulnerable groups. As noted above, the government introduced transfers to 70 percent of the population conditional on oil prices exceeding \$100. These transfers were expected to be paid out three times a year, but in fact the payout was random. When oil prices fell below \$100 per barrel the transfers stopped completely; the Fund staff suggested that some transfers be kept, at least for the most vulnerable, but the government was not receptive to this idea. With falling fiscal revenues and a decline in the number of public sector jobs, the authorities felt it was difficult to "keep everyone happy." The Fund team's idea was to use more closely targeted transfer programs that were more generous to the neediest, based on a household database set up by the World Bank that includes information not only on income but also on assets. The IMF staff felt strongly that the government did not need to protect the rich, but the government argued that middle-income households needed help because they too had been affected by the various shocks. The World Bank attempted to conduct a study on social protection for the middle-income group, but this has not yielded any results.

126. In August 2016, the IMF approved a new three-year EFF-supported program for Jordan. The EFF-supported program includes reforms to the electricity and water sectors to support fiscal consolidation "while protecting the most vulnerable" (IMF, 2016c).³² At the same time, it incorporates a floor on spending for social protection programs that would be monitored as an indicative target. This spending primarily targets illness and disability, old age, family and children, housing, and research and development in the field of social protection.

³¹ The transfer amounted to about \$100 per person per year; it was capped at a maximum of six family members.

³² As a structural benchmark under the EFF-supported program, the authorities committed to publishing, by end-September 2016, studies identifying options for reducing cross-subsidization across different electricity consumers "while maintaining revenue and protecting poor households" (IMF, 2016c).

VI. CONCLUSIONS

127. This paper has examined the Fund's policies and actions with regard to fuel and food subsidies, and the coordination of these policies with social protection, including detailed analysis and specific country examples. While it is always difficult to draw general conclusions from groups of heterogeneous countries, and our sample does not include every country that might have been studied, we can nonetheless observe certain patterns with respect to Fund interventions.

128. A number of factors motivated the Fund's involvement in subsidy reform. Although there seems to be a common belief that the Fund only concerns itself with subsidy reform if the member country has a budget problem, this was not the case in our sample countries. Broad fiscal issues were almost always the trigger for Fund intervention in subsidy reform, but these fiscal issues included concerns about allocative inefficiencies caused by the price distortions induced by subsidies. Additional fiscal triggers were the crowding out of spending for the provision of public infrastructure, as well as negative externalities such as air pollution caused by the overconsumption of inexpensive fuel.

129. Over the evaluation period, 2006–15, the Fund moved from a position in which it focused mainly on the immediate fiscal implications of food and fuel subsidies to one in which it increasingly considered the social implications of subsidy reform. The concern with social implications was often based on the realization that the impact of higher food and fuel prices on society could compromise the sustainability of the reforms. Although in some cases the Fund appeared to treat social protection as secondary to the fiscal and macroeconomic issues raised by subsidy reforms, in other cases it treated social protection as an important element to be considered in assessing the effects of subsidy reductions.

130. For the Fund, social protection became a concern when addressing subsidy reform if a fiscal problem or a major distortionary issue called for such reform. Thus, social protection issues were generally viewed as mitigating the negative side effects of subsidy reductions. Otherwise such issues were left to the World Bank or other agencies that had greater capacity and expertise in this area than the Fund. The view of a number of IMF staff members was that if the Fund engaged in subsidy reforms for fiscal reasons, then it had to take account of the impact that these reforms would have on the need for social protection, but that it should not use social protection as a motivating force for engaging in subsidy reform.

131. The IMF's operational work on subsidy reform seems to have taken two general approaches to social protection. One approach was to use the subsidy reforms to create "fiscal space," freeing up government budgetary resources for use in enhancing overall social protection or for targeting support to the most vulnerable groups. The other approach was to view the social implications of a subsidy reform as a constraint on its implementation; that is, if a reform would cause social unrest in response to higher prices, then it might be impossible to implement fully. In such cases the Fund often advised remedies such as targeted payments to the

poor in the form of vouchers or direct cash transfers, and sometimes it proposed measures that essentially relaxed the subsidy reform itself. For example, a fuel subsidy reform that exempted kerosene from subsidy reduction would tend to protect poor people who used kerosene for cooking. The Fund also recognized that the regressive nature of fuel subsidies tended to make the middle class very opposed to subsidy reform, and thus lead to significant political economy challenges.

132. Staff generally relied on other agencies such as the World Bank, ILO, UNICEF, and NGOs, as well as bilateral aid agencies such as DFID, or on the member country's own experts (particularly in middle-income countries), to take the lead role in designing social protection systems related to subsidy reform, and it deferred to them for the details of how to implement plans for protecting vulnerable segments of the populace. Organizations such as the World Bank have greater expertise in micro-data issues (such as household surveys that are needed for distributional analysis), as well as more resources available for these purposes, than does the Fund. But there were certainly cases where the Fund played a more active supporting role—often through FAD technical assistance that demonstrated the regressive impact of existing subsidies and advocated social-protection measures that were targeted to the poor—and sometimes used program conditionality as a commitment device.

133. The final questions in our assessment of the Fund's work in the area of subsidy reform and social protection are perhaps the most basic, namely: was the advice effective in the sense that it influenced the countries' decisions, and did the advice lead to positive outcomes, in the sense that the outcomes would have been worse if the Fund had not intervened? These are difficult questions to answer, since we do not and cannot know what would have happened had no subsidy reform occurred, or what would have happened had there been no reform and no corresponding enhancements of social protection.

134. Nonetheless, it would appear that over our ten-year assessment period the Fund offered useful, country-specific advice on subsidy reform. This advice was frequently based on detailed analysis, such as the derivation of formulas for automatic price adjustments for subsidized products. In the case of fuel subsidies, governments often faced considerable pressures to maintain existing systems, which were popular with the middle classes. However, the Fund's advice seems to have been successful in that fuel prices in our 11 sample countries are now either at or near world levels. Of course, these reforms were made easier when world fuel prices were low.

135. It is more difficult to judge the quality of Fund advice on social protection aspects of subsidy reform. Perhaps the major reason is that country officials sometimes interpret events very differently from Fund staff members. Depending upon the country, local officials said in interviews that their country had implemented a social safety net independently of the Fund, or that the Fund staff had no real interest in social protection and only brought the matter up when the country authorities talked about it, or that the World Bank, ILO, UNICEF, and others contributed much more useful insights than did Fund staff. Yet the record shows that the Fund

staff clearly did increase its concern with social protection over time. The 11 countries studied in detail all indicate the need to pay adequate attention to this issue.

136. The effectiveness of the Fund's advice on subsidy questions was often limited by complex political and social issues. In practice, there was often a sequencing problem when subsidies were cut (and prices rose) but the benefits from new social protection programs were slow to materialize. Targeted transfer programs were generally difficult to implement and could be expensive. In some cases, difficulties in implementing targeted transfer programs hampered progress with subsidy reform or led to its subsequent reversal.

APPENDIX 1. THE NEO-CLASSICAL BACKGROUND

The IMF has traditionally taken a neo-classical approach to the topic of subsidies. This approach starts from the general Walrasian model of a closed economy with complete and perfectly competitive markets. In this system, the economy achieves a competitive equilibrium at which the marginal cost of supply equals the marginal rate of substitution in demand. Equivalently, we have $MC = P$. This equilibrium is Pareto-efficient, in the sense that no consumer can be made better off without another being made worse off. However, the Pareto equilibrium may lead to an income distribution that is unsatisfactory for welfare reasons. Thus, if a government is now introduced into this simple model, then the government will have the power to tax and to subsidize, and hence distort, prices. If consumers pay a price that is lower than P , then they receive a consumption subsidy. If producers receive a price higher than P , then they have received a production subsidy. In a perfectly competitive world, such subsidies would be inefficient in the sense that they could be Pareto-improved upon. In addition, if the goal of the subsidies is to change income distribution, and hence the distribution of consumption, then this shift could be better achieved by lump-sum subsidies to consumers or firms.

Of course, the real world does not reflect perfect competition, and there is also the general difficulty of levying lump-sum taxes or of paying lump-sum subsidies. Therefore, distortionary taxes and subsidies may be introduced in order to compensate for equilibria that do not correspond to some governmental measure of social welfare. These taxes are referred to as "Pigouvian" and there is a considerable literature on how the optimal rates of these taxes should be determined. Accordingly, the correct measure of a price subsidy would measure the difference between a non-observed price, which would be based upon an equilibrium market price combined with an optimal tax, and an observed market price. Such a calculation is quite difficult and would require a complete general equilibrium model of the country in question, as well as a derivation of optimal tax rates related to a revenue target or a social welfare function.

In some situations, the cost of a price subsidy may, incorrectly, not be reflected in the government's fiscal accounts. If, for example, an oil producer sells refined fuel locally at below the world market price, but above the cost of production, then governments sometimes claim that there is an implicit, but not explicit, subsidy. However, there is an opportunity cost in lost revenue and hence a budgetary cost. Similarly, suppose that a food product is purchased by an agricultural marketing board at a price above the farmers' costs of production and then sold to consumers at a higher price than that paid to the farmers, but below the market clearing domestic price, then the opportunity loss will, of course, be a consumer subsidy.

The issue of tax subsidies, especially for production, is also complex. For example, a tax-rate reduction for a consumer good creates a revenue shortfall that could be measured by taking the observed level of consumption and multiplying by the reduction in the tax rate from the optimal level. Formally, such a calculation would be incorrect as the level of consumption would likely not be the same at the "correct" and the reduced tax rate. Accordingly, the simple calculation may overestimate the budgetary impact of the tax subsidy.

APPENDIX 2. SUMMARY OF COUNTRY CASES

| Country | Why did the Fund intervene? | Fund's advice on reforms |
|------------|--|--|
| Bangladesh | <p>Energy subsidy weakened the financial position of energy sector state-owned enterprises (SOEs). Subsidy was primarily financed through loans from state-owned commercial banks (SCBs). These loans remained mostly overdue, which affected financial health of SCBs.</p> | <p>Energy subsidies were regressive, and should be replaced by well-targeted and transparent transfers to the poor.</p> <p>Required fiscal space for enhanced spending in social safety programs could be created by rationalization of regressive fuel subsidies.</p> |
| Bolivia | <p>Fuel subsidy reform was not primarily motivated by budgetary considerations. The budget had been more or less in balance. The savings from subsidy reform were to be used to enhance the provision of infrastructure.</p> <p>Explicit and implicit fuel subsidies amounted to about 7 percent of GDP, leading to shortfalls in infrastructure spending.</p> | <p>The Fund suggested phasing out large fuel subsidies by moving domestic petroleum product prices gradually to market-based levels.</p> |
| Egypt | <p>Budget deficit would increase if measures were not taken.</p> <p>Subsidies were poorly targeted and the richest quantile reaps major benefits.</p> | <p>The Fund recommended moving implicit subsidies into the budget for greater transparency.</p> <p>The Fund recommended replacing across-the-board subsidies with better targeted social programs.</p> |
| Ghana | <p>Failures to pass through utility price increases to consumers led to SOE losses and caused large fiscal deficit.</p> | <p>The Fund developed an automatic price-adjustment formula.</p> |
| Indonesia | <p>Government expenditures were heavily skewed toward subsidies, and hence spending on investment and poverty alleviation were quite limited. Stressed fiscal space crowded out high-priority spending like social programs.</p> <p>Lower domestic price of fuel contributed to rapid increase in consumption, and oil and gas sector's net contribution to budget had been eroded by large fuel subsidies.</p> <p>The difference in domestic fuel prices and international oil prices instigated smuggling.</p> | <p>The Fund suggested scaling back untargeted fuel subsidies and recommended progress toward market-based prices.</p> |
| Jordan | <p>Budget deficit and high public-debt-to-GDP ratio.</p> | <p>The Fund suggested a fuel price adjustment mechanism based on an automatic formula.</p> |

| | | |
|------------|--|--|
| Mexico | Implicit subsidy by holding domestic gasoline prices constant in real terms hurt public revenue. | The Fund recommended eliminating non-targeted subsidies permanently, while compensating low income households through existing well-targeted cash transfer programs. |
| Morocco | Subsidy system was inefficient and did not particularly target poor and vulnerable groups. The country relied on the exported fuel products, therefore high volatility of international energy prices strongly affected national economy. | The Fund supported authorities' fiscal adjustment program through a Precautionary and Liquidity Line (PLL). The Fund helped in developing a formula for adjusting fuel prices. |
| Mozambique | Fuel subsidy was ill-targeted and fiscally unsustainable. | The Fund advised the authorities to create more fiscal space in order to be able to afford a sustainable social-protection system. |
| The Gambia | Budget crisis in 2010 was the main trigger for subsidy reform. HIPC debt relief, which required prioritized social spending, also motivated reform. Fiscal and budgetary consideration for higher spending in health, education, and social safety net programs, led to IMF team's attention on energy subsidy reform. | Authorities should pass through increases in world food and oil prices, and should consider targeted measures to help the poor. |
| Togo | Large subsidy bills were key concerns for Togo to initiate energy subsidy reform. | The staff proposed a phased increase in fuel price. The price increase did not apply to kerosene, which was mostly consumed by the poor. The staff contributed in the adoption of an automatic price adjustment mechanism with a smoothing formula. The staff suggested a public information campaign to disseminate information on fiscal cost and regressive impacts and on opportunity costs of fuel subsidy in terms of forgone social and infrastructure spending. |

REFERENCES

- Alleyne, Trevor, and others, 2013, *Energy Subsidy Reform in Sub-Saharan Africa: Experiences and Lessons* (Washington: International Monetary Fund).
- Arze del Granado, Javier, David Coady, and Robert Gillingham, 2010, "The Unequal Benefits of Fuel Subsidies: A Review of Evidence for Developing Countries," IMF Working Paper No. 10/202 (Washington: International Monetary Fund).
- Clements, Benedict, and others (eds.), 2013, *Energy Subsidy Reform: Lessons and Implications* (Washington: International Monetary Fund).
- Coady, David, Valentina Flamini, and Louis Sears, 2015, "The Unequal Benefits of Fuel Subsidies Revisited: Evidence for Developing Countries," IMF Working Paper No. 15/250 (Washington: International Monetary Fund).
- Coady, David, Ian Parry, Louis Sears, and Baoping Shang, 2015, "How Large Are Global Energy Subsidies?" IMF Working Paper No. 15/105 (Washington: International Monetary Fund).
- Coady, David, Moataz El-Said, Robert Gillingham, Kangni Kpodar, Paulo Medas, and David Newhouse, 2006, "The Magnitude and Distribution of Fuel Subsidies: Evidence from Bolivia, Ghana, Jordan, Mali, and Sri Lanka," IMF Working Paper No. 06/247 (Washington: International Monetary Fund).
- Coady, David, Robert Gillingham, Rolando Ossowski, John Piotrowski, Shamsuddin Tareq, and Justin Tyson, 2010, "Petroleum Product Subsidies: Costly, Inequitable, and Rising," IMF Staff Position Note No. 10/05 (Washington: International Monetary Fund).
- Di Bella, Gabriel, and others, 2015, "Energy Subsidies in Latin America and the Caribbean: Stocktaking and Policy Challenges," IMF Working Paper 15/30 (Washington).
- El-Said, Moataz, 2012, "Energy Subsidies: Fiscally Burdensome and Inequitable," Chapter I in "Jordan: Selected Issues," IMF Country Report No. 12/120 (Washington: International Monetary Fund) May.
- Gupta, Sanjeev, and others, 2000, *Equity and Efficiency in the Reform of Price Subsidies: A Guide for Policymakers* (Washington: International Monetary Fund).
- International Monetary Fund (IMF), 2003, "Bangladesh: 2003 Article IV Consultation and Request for a Three-Year Arrangement under the Poverty Reduction and Growth Facility—Staff Report; Staff Supplement; Public Information Notice and Press Release on the Executive Board Discussion; and Statement by the Executive Director for Bangladesh," IMF Country Report No. 03/205, June (Washington).

- _____, 2006a, "Arab Republic of Egypt: 2006 Article IV Consultation—Staff Report; Staff Statement; Public Information Notice on the Executive Board Discussion; and Statement by the Executive Director for the Arab Republic of Egypt," IMF Country Report No. 06/253, July (Washington).
- _____, 2006b, "Mexico: 2006 Article IV Consultation—Staff Report; Staff Statement; Public Information Notice on the Executive Board Discussion," IMF Country Report No. 06/352, October (Washington).
- _____, 2006c, "Bangladesh: Fifth Review under the Three-Year Arrangement under the Poverty Reduction and Growth Facility and Request for Waiver of Performance Criteria, Extension of the Arrangement, and Rephasing—Staff Report; Staff Statement; Press Release; and Statement by the Executive Director for Bangladesh on the Executive Board Discussion," IMF Country Report No. 06/406, November (Washington).
- _____, 2006d, "Morocco: 2006 Article IV Consultation—Staff Report; Staff Statement; Public Information Notice on the Executive Board Discussion; and Statement by the Executive Director for Morocco," IMF Country Report No. 06/413, November (Washington).
- _____, 2007a, "Ghana: Ex Post Assessment of Longer-Term Program Engagement," IMF Country Report No. 07/211, June (Washington).
- _____, 2007b, "Bolivia: 2007 Article IV Consultation—Staff Report; Staff Supplement; Public Information Notice on the Executive Board Discussion; and Statement by the Executive Director for Bolivia," IMF Country Report No. 07/248, July (Washington).
- _____, 2007c, "Mexico: 2007 Article IV Consultation—Staff Report; Staff Supplement; and Public Information Notice on the Executive Board Discussion for Mexico," IMF Country Report No. 07/379, December (Washington).
- _____, 2008a, "Jordan: 2008 Article IV Consultation— Staff Report; and Public Information Notice on the Executive Board Discussion," IMF Country Report No. 08/290, August (Washington).
- _____, 2008b, "Morocco: 2008 Article IV Consultation—Staff Report; Staff Statement; Public Information Notice; and Statement by the Executive Director for Morocco," IMF Country Report No. 08/304, September (Washington).
- _____, 2008c, *Fuel and Food Price Subsidies: Issues and Reform Options*, September (Washington).
- _____, 2008d, "Bangladesh: 2008 Article IV Consultation—Staff Report; Staff Supplement; Staff Statement; Public Information Notice on the Executive Board Discussion; and Statement by the Executive Director for Bangladesh," IMF Country Report No. 08/334, October (Washington).

- _____, 2008e, "Republic of Mozambique: Second Review under the Policy Support Instrument and Request for Waiver of Nonobservance of Assessment Criteria—Staff Statement; Press Release on the Executive Board Discussion; and Statement by the Executive Director for the Republic of Mozambique," IMF Country Report No. 08/220, July (Washington).
- _____, 2009a, "Arab Republic of Egypt: 2008 Article IV Consultation—Staff Report; Staff Statement; Public Information Notice on the Executive Board Discussion; and Statement by the Executive Director for the Arab Republic of Egypt," IMF Country Report No. 09/25, January (Washington).
- _____, 2009b, "Bolivia: 2008 Article IV Consultation—Staff Report; Staff Supplement; Public Information Notice on the Executive Board Discussion; and Statement by the Executive Director for Bolivia," IMF Country Report No. 09/27, January (Washington).
- _____, 2009c, "Ghana: 2009 Article IV Consultation and Request for a Three-Year Arrangement under the Poverty Reduction and Growth Facility—Staff Report; Staff Supplement; Staff Statement; Public Information Notice and Press Release on the Executive Board Discussion; and Statement by the Executive Director for Ghana," IMF Country Report No. 09/256, August (Washington).
- _____, 2009d, "Republic of Mozambique: Fifth Review under the Policy Support Instrument, First Review under the Twelve-Month Arrangement under the Exogenous Shocks Facility, and Request for Modification of Assessment/Performance Criteria—Staff Report and Press Release," IMF Country Report No. 09/327, December (Washington).
- _____, 2010a, "Bolivia: 2009 Article IV Consultation—Staff Report; Staff Supplement; Staff Statement; Public Information Notice on the Executive Board Discussion; and Statement by the Executive Director for Bolivia," IMF Country Report No. 10/27, January (Washington).
- _____, 2010b, "Republic of Mozambique: First Review under the Policy Support Instrument and Request for Modification of Assessment Criteria—Staff Report; and Press Release," IMF Country Report No. 10/375, December (Washington).
- _____, 2010c, "Arab Republic of Egypt: 2010 Article IV Consultation—Staff Report; Public Information Notice on the Executive Board Discussion; and Statement by the Executive Director for the Arab Republic of Egypt," IMF Country Report No. 10/94, April (Washington).
- _____, 2011a, "Bolivia: 2011 Article IV Consultation—Staff Report; Supplement and Staff Statement; Public Information Notice on the Executive Board Discussion; and Statement by the Executive Director for Bolivia," IMF Country Report No. 11/124, June (Washington).

- _____, 2011b, "Republic of Mozambique: Staff Report for the 2011 Article IV Consultation, Second Review under the Policy Support Instrument, and Request for Modification of Assessment Criteria: Staff Report; Staff Supplement; Public Information Notice and Press Release on the Executive Board Discussion; and Statement by the Executive Director for the Republic of Mozambique," IMF Country Report No. 11/149, June (Washington).
- _____, 2011c, "Mexico: 2011 Article IV Consultation," IMF Country Report No. 11/250, July (Washington).
- _____, 2011d, "Togo: 2011 Article IV Consultation and Sixth Review under the Extended Credit Facility Arrangement—Staff Report; Public Information Notice and Press Release on the Executive Board Discussion; and Statement by the Executive Director for Togo," IMF Country Report No. 11/240, August (Washington).
- _____, 2011e, "Morocco: 2011 Article IV Consultation—Staff Report; Public Information Notice on the Executive Board Discussion; and Statement by the Executive Director for Morocco," IMF Country Report No. 11/341, December (Washington).
- _____, 2011f, "IMF Reaches Staff Level Agreement with Egypt on a US\$3 Billion Stand-By Arrangement," IMF Press Release No. 11/216, June (Washington).
- _____, 2012a, "Bangladesh: Request for a Three-Year Arrangement under the Extended Credit Facility," IMF Country Report No. 12/94, April (Washington).
- _____, 2012b, "Bolivia: 2012 Article IV Consultation," IMF Country Report No. 12/149, June (Washington).
- _____, 2012c, "Ghana: Sixth and Seventh Reviews under the Three-Year Arrangement under the Extended Credit Facility and Requests for Waiver of Nonobservance of Performance Criteria and Extension of the Arrangement—Staff Report; Press Release on the Executive Board Discussion; and Statement by the Executive Director for Ghana," IMF Country Report No. 12/201, July (Washington).
- _____, 2012d, "Jordan: Request for a Stand-By Arrangement—Staff Report; Staff Supplement; Request for Modification of Performance Criteria; Press Release on the Executive Board Discussion; and Statement by the Executive Director for Jordan," IMF Country Report No. 12/343, December (Washington).
- _____, 2012e, "IMF Reaches Staff-Level Agreement with Egypt on a US\$4.8 Billion Stand-By Arrangement," IMF Press Release No. 12/446, November (Washington).
- _____, 2013, "Jordan: First Review under the Stand-By Arrangement, Request for Waivers of Nonobservance of Performance Criteria, Modification of Performance Criteria, and Rephasing of Access—Staff Report; Press Release on the Executive Board Discussion; and

Statement by the Executive Director for Jordan," IMF Country Report No. 13/130, May (Washington).

- _____, 2015a, "Morocco: Ex Post Evaluation of Exceptional Access under the 2012 Precautionary and Liquidity Line Arrangement—Press Release; Staff Report; and Statement by the Executive Director for Morocco," IMF Country Report No. 15/231, August (Washington).
- _____, 2015b, "Bangladesh: Fifth and Sixth Reviews under the Extended Credit Facility Arrangement—Press Release and Staff Report," IMF Country Report No. 15/304, November (Washington).
- _____, 2015c, "Mexico: 2015 Article IV Consultation—Press Release; and Staff Report," IMF Country Report No. 15/313, November (Washington).
- _____, 2016a, "Morocco: Third Review under the Arrangement under the Precautionary and Liquidity Line-Press Release; Staff Report; and Statement by the Executive Director for Morocco," IMF Country Report No. 16/38, February (Washington).
- _____, 2016b, "Indonesia: 2015 Article IV Consultation—Press Release; Staff Report; and Statement by the Executive Director for Indonesia," IMF Country Report No. 16/81, March (Washington).
- _____, 2016c, "Jordan: Request for an Extended Arrangement Under the Extended Fund Facility-Press Release; Staff Report; and Statement by the Executive Director for Jordan," IMF Country Report No. 16/295, September (Washington).
- _____, 2016d, "Mexico: 2016 Article IV Consultation-Press Release; Staff Report; and Informational Annex," IMF Country Report No. 16/359, November (Washington).
- _____, 2017, "Social Safeguards and Program Design in PRGT and PSI-Supported Programs," SM/17/92, April (Washington).
- Kwon, Huck-ju, and Woo-rim Kim, 2015, "The Evolution of Cash Transfers in Indonesia: Policy Transfer and National Adaptation," *Asia & the Pacific Policy Studies* 2 (2): 425-440.
- Mati, Amine, 2007, "Indonesia: Creating Fiscal Space," Chapter VI in "Indonesia: Selected Issues," IMF Country Report No. 07/273, August (Washington: International Monetary Fund).
- Mattina, Todd, and Aliona Cebotari, 2007, "Focusing Fiscal Adjustment on Relatively Inefficient Spending," Chapter III in "Arab Republic of Egypt: Selected Issues," IMF Country Report No. 07/381, December (Washington: International Monetary Fund).

Mazraani, Samah, and Bruno Versailles, 2013, "Fuel Subsidies in Morocco: International Experience and Possible Ways Forward," Chapter II in "Morocco: Selected Issues," IMF Country Report No. 13/110, May (Washington: International Monetary Fund).

Palacio, Esther, and Alex Segura-Ubiergo, 2016, "Fuel Import and Subsidy Reform," Chapter IV in "Republic of Mozambique: Selected Issues," IMF Country Report No. 16/10, January (Washington: International Monetary Fund).

Sdralevich, Carlo, and others, 2014, *Subsidy Reform in the Middle East and North Africa: Recent Progress and Challenges Ahead* (Washington: International Monetary Fund).

Vargas, Jose, and Santiago Garriga, 2015, "Explaining Inequality and Poverty Reduction in Bolivia," IMF Working Paper No. 15/265, December (Washington: International Monetary Fund).

World Bank, 2012, "Togo: Towards a National Social Protection Policy and Strategy," Report No. 71936-TG, June (Washington: The World Bank).

_____, 2015, "US\$400 Million Program to Support 1.5 million Poor Egyptian Families through Enhanced Social Safety Nets," Press Release, April (Washington: The World Bank).

Zhou, Jianping, 2017, "IMF Collaboration with Other Institutions on Social Protection," IEO Background Document No. BD/17-01/07 (Washington: International Monetary Fund).