



Research Paper

From Regressive Subsidies to Progressive Redistribution: The Role of Redistribution and Recognition in Energy Subsidy Reform

Tara Moayed, Scott Guggenheim, Paul von Chamier





About the Author

Tara Moayed is a political scientist, advising governments and international organizations on social development and governance. Based in Indonesia, she supports Indonesia's nationwide village development program, with a particular focus on strengthening governance and participation. Tara previously worked with Afghanistan's Ministry of Finance, where she helped develop national programs for women's economic empowerment, decentralization, and the Citizen's Charter, an innovative, multi-billion-dollar, national program for strengthened community empowerment and service delivery. Tara has worked across four continents on state and institution building policies, helping develop systems that enable transparent and effective delivery of services.

Scott Guggenheim is a development anthropologist who has worked extensively on designs for poor peoples' participation in large development projects. He was the World Bank team leader for nation-wide community driven development projects in Afghanistan, East Timor, and Indonesia; and the lead field coordinator for the reconstruction program in Aceh and Nias following the 2004 tsunami. In 2010, Dr. Guggenheim joined AusAid Indonesia, where he coordinated designs for innovative programs such as knowledge sector reform, women's empowerment ("MAMPU"), NGO localization ("Peduli"), and technical support for the development of Indonesia's national safety net program under Vice President Boediono ("TNP2K"). Between 2014-2018, Dr. Guggenheim was senior development adviser to Afghanistan President Ashraf Ghani. Currently an adjunct professor in Georgetown University's School of Foreign Service, Dr. Guggenheim lives in Jakarta, Indonesia.

Paul von Chamier is a research officer at NYU's Center on International Cooperation. Paul previously worked at the World Bank in Indonesia and at the Center for International Development in Saudi Arabia, dealing with macroeconomic subjects. He also has experience working in the private sector as an operations manager. He specializes in using data-driven methods in international development to create lasting impact.

About the Grand Challenge

Inequality and exclusion are among the most pressing political issues of our age. They are on the rise and the anger felt by citizens towards elites perceived to be out-of-touch constitutes a potent political force. Policymakers and the public are clamouring for a set of policy options that can arrest and reverse this trend. [The Grand Challenge on Inequality and Exclusion](#) seeks to identify practical and politically viable solutions to meet the targets on equitable and inclusive societies in the Sustainable Development Goals. Our goal is for national governments, intergovernmental bodies, multilateral organizations, and civil society groups to increase commitments and adopt solutions for equality and inclusion. The Grand Challenge is an initiative of the Pathfinders, a multi-stakeholder partnership that brings together 36 member states, international organizations, civil society, and the private sector to accelerate delivery of the SDG targets for peace, justice and inclusion. Pathfinders is hosted at [New York University's Center on International Cooperation](#).

Acknowledgments

The authors would like to thank Neil McCulloch, Djavad Salehi-Isfahani, Sudarno Sumarto, Ben Olken, and Lisa Hannigan for their guidance and feedback on this paper.



This work is licensed under a Creative Commons Attribution 4.0 International License (CC BY 4.0) <https://creativecommons.org/licenses/by/4.0/>. Under the Creative Commons Attribution license, you are free to copy, distribute, transmit, and adapt this work, including for commercial purposes, as long as attribution is given and any changes made are indicated.

Pathfinders for Peaceful, Just and Inclusive Societies, From Regressive Subsidies to Progressive Redistribution. (New York: Center on International Cooperation, 2021), available at <https://www.sdg16.plus/>

Quito, Ecuador: 2019 Ecuadorian protest and riots against cancelation of fuel subsidies. © Esteban Barrera / [Shutterstock.com](https://www.shutterstock.com)



Table of Contents

Introduction	4
1. Background	6
1.1 What are energy subsidies, and why do countries want to get rid of them?	6
1.2 The Politics of Opposition	6
1.3 Distributional Breakdown of Energy Subsidies	7
1.4 Protecting the Poor to Pave the Path for Reform	8
1.5 Moving the Needle: From Mitigation to Redistribution.....	9
2. Quantitative Assessment	10
2.1 Analysis of Cash Transfers in Subsidy Reforms Attempts	10
3. Case Studies	12
Methodology	12
Indonesia (2005 and 1998).....	12
Iran (2010 and 2019)	15
Dominican Republic (2008)	19
Ecuador (2019)	21
4. Analysis	23
5.1 Six Lessons on Transitioning from Regressive Subsidies to Progressive Redistribution	23
5.1.1 Subsidy reforms can open fiscal space and be an opportunity for progressive redistribution	23
5.1.2 Timing is critical—price increases should not come before cash-in-hand	24
5.1.3 Universal programs can help avoid social conflict and build a sense of equity	24
5.1.4 If not universal, cash transfers should be broad-based and identify where the shoe pinches.....	24
5.1.5 Balance savings from reform between cash transfer and longer-term investments	25
5.1.6 Effective reforms require a multi-sectoral effort.....	25
5. Conclusion	26
Endnotes	27



Introduction

As signs continue to emerge that the COVID-19 pandemic is slowly and unevenly coming under control, policymakers around the world are surveying the damage to their economies and the prospects for recovery. Most governments recognize that even before the pandemic, rising rates of inequality were already demanding a more forceful policy response, but the pandemic put a spotlight on the ways that inequality guided both the course of the disease and the ability of public health measures to control it. As governments begin taking the first steps towards recovery, there is a unique opportunity to adopt progressive policies that can couple economic recovery with a more equitable distribution of wealth.

Energy subsidies are one of the few domains where there is a near full-throated consensus among progressives, governments, and economists over the need for reform. Nearly everywhere, energy subsidies are regressive, vastly favoring the car- and energy-consuming parts of the population that are often the least in need. The costs of these subsidies can vary, but in many countries they represent a large fiscal burden. Prior to 2005 reforms, for example, Indonesia's fuel subsidy was nearly the same amount as its health budget and its targeted anti-poverty programs combined. From the perspective of global climate change, few economic policies are as damaging as the direct and indirect contributions of fossil fuel subsidies.

And yet, despite the consensus that energy subsidies are damaging, efforts to reform them almost inevitably run into tremendous political resistance. Despite the fact that moving from subsidies to more efficient distribution policies can help both the economy and the poor, as the International Monetary Fund (IMF) reports, most countries have difficulty reforming fuel subsidies.¹

Why is this so? The standard explanation is that while energy subsidy reforms can help the poor in the long term, in the short term, the elites who are the true beneficiaries of energy subsidies can mobilize popular protest. Poor communications by reformers and scare tactics by elite opposition translate into widespread resistance. Given this diagnosis, the solution often proposed is for reformist governments to mount a good communications campaign, coupled with well-targeted social safety net programs that use a portion of the energy savings to compensate poor people, who might otherwise sense that they are losing out.

While this framework represents an improvement, time and again, subsidy reforms continue to fail. In this paper, we argue that the Pathfinders' "Recognition and Redistribution" framework² provides some important clues about better ways to manage energy subsidy reform. We offer three arguments. First, while energy subsidies definitely are skewed towards the rich, most diagnostics fail to recognize that the direct and indirect impacts on poor people are real and significant. Where poverty increases are projected at even single digits, those numbers can represent millions of people who will be unable to meet their basic needs. Second, most safety net programs designed by governments, often with support from international organizations, focus on ensuring that only the deserving poor will be eligible. In fact, it is often the near-poor and the lower-middle class who stand to lose the most from the removal of subsidies. Given the scale of the savings that subsidy reform achieves, broader targeting that recognizes these impacts is the more optimal approach. Third, in situations of low trust in government, skepticism about governmental promises of future mitigation is extremely high. It is unlikely that advertisements and publicity alone will change opinions about a government's ability to deliver.

These problems can be addressed, and we marshal case studies of countries that have done so successfully. Two features of successful versus unsuccessful reform programs stand out. First, policymakers recognized that energy subsidy reform affects not just people below the poverty line, but significant numbers of the near-poor



and even middle class, especially in areas where a newly emergent middle class is at risk of falling back into poverty. In this context, the standard practice of targeting to avoid inclusion error—not giving poverty support to people living above the poverty line—is less important than broad-banding eligibility so that a significant share of affected people receive help, minimizing exclusion error. Second, while protection measures and good communication about them are important, timing is equally, if not more, important. The most successful programs have delivered the cash transfer at the same time or even before the subsidy reform. Government promises of "jam tomorrow" are not always believed, often with justification. Both broad-banded transfers and the simultaneous delivery of social protection are fully justified by the benefits that the economy receives from successful energy subsidy reform.

Before we begin, three clarifications are in order. First, this paper is suggestive rather than definitive. We do not have sufficient data to definitely prove causation. Instead, we present a small quantitative assessment and a series of case studies to showcase country experiences to date with regard to effectively mitigating the negative impacts of subsidy reforms. The case studies provide a series of "matched pairs" of countries that illustrate how our arguments manifest themselves in concrete situations. While we recognize the risks of subjective bias in case selection, we have chosen to go deep into the case studies to illustrate the processes at work. Our aim is to provide examples for policymakers grappling with questions about mitigating negative impacts of policy reforms, targeting, and weak capacity for delivering cash transfers.

Second, the focus of this paper is on how energy subsidy reforms can make it through the starting gate. It does not address their long-term success or failure. Reform sustainability is immensely complex, involving both factors specific to the energy sector itself and aspects of the broader political economy. The reemergence of fuel subsidies is a major issue for many countries that have attempted reforms, even where they were initially successful. Questions related to sustainability of reform efforts are not addressed in this paper and require separate analysis. However, none of these questions are relevant if subsidy reform is throttled by mass protests before it can begin.

Finally, the paper concentrates on measures that can enable reform in one of the most regressive areas of many economies—it does not discuss options for how countries should then use their newfound fiscal space to address broader issues of inequality. This is the task of the Pathfinders project overall. However, freeing up billions of dollars from economically and environmentally wasteful energy subsidies opens up myriad possibilities for progressive reform.



1. Background

1.1 What are energy subsidies, and why do countries want to get rid of them?

Governments worldwide use consumer subsidies to correct market imperfections.³ However, commodity subsidies can also be a form of social safety net.⁴ In many low- and middle-income countries, such subsidies are a part of the social contract. In particular, governments that do not have systems to target and reach poor households use subsidies, including energy subsidies, as a tool to reduce the cost of living for poor households, either because they see this as an intrinsically valuable policy, or as a means to win support. Fossil-fuel consumption subsidies are so common globally that their total annual value in 2019 is estimated at \$320 billion.⁵ This is double the value of annual Official Development Assistance (ODA).⁶

Despite how common fossil fuel consumption subsidies are, there has been broad agreement about the need to end them—from such disparate perspectives as the Bretton Woods Institutions, dictators such as Indonesia's Suharto, and Greta Thunberg, the Swedish environmental activist. The latter recently called subsidies a "disgrace" in her testimony to a U.S. congressional committee.⁷ The IMF calculates that the total cost of fossil fuel subsidies, including supply costs, environmental costs, and revenue considerations, across 191 countries, amounted to \$5.2 trillion (6.5% of global Gross Domestic Product, or GDP) in 2017.⁸ The World Bank describes untargeted commodity subsidies as "one of the most expensive and most regressive fiscal policies in low- to middle-income countries."⁹

Critically, the blunt nature of subsidies as a social protection tool means that better-off households consume the majority of benefits. In addition to being regressive, they also take up significant fiscal space: in many cases, governments spend much more on subsidies than any other social welfare program. Subsidies strain national budgets and prevent governments from investing effectively in critical infrastructure and social services.¹⁰

1.2 The Politics of Opposition

Despite the myriad of problems that fossil-fuel subsidies cause, most governments avoid reforming their system, and attempted reforms often fail or are faced with widespread protests. The fall of the Suharto regime in Indonesia, Myanmar's Saffron Revolution, the *gilets jaunes* protests in France, and the ousting of Omar al-Bashir in Sudan were all triggered by failed attempts to cut consumer energy subsidies. The majority of reforms start when governments have their back against a wall, either through a fiscal crisis or donor conditionalities requiring reforms for access to loans or aid.¹¹

Many countries that have recently attempted subsidy reforms have faced strong opposition from the public, leading to a reversal or rollback of the reform, including Angola, Azerbaijan, Bolivia, Ecuador, Egypt, Mexico, Nigeria, Pakistan, Sudan, and Venezuela.¹² Mahdavi et al. found that from 2006 to 2019, attempts to remove gasoline subsidies led to mass protests in at least 24 countries.¹³ Bacon and Kojima attribute these strong reactions from civil society to trade unions and non-affiliated groups, as well as to political opposition parties that, at times opportunistically, use price increases to encourage protests.¹⁴ They provide some variables that can determine public reaction to price increases, including general understanding of the need for reform; level of government legitimacy, credibility, and popularity; the



extent to which the burden is seen to be shared equitably; the speed of policy changes; transparency of policies; and effective communication about reform efforts.¹⁵

However, assuming that the problem is simply one of poor understanding from the public or bad communication by reformers can reflect an assumption that poor people do not understand their own interests. Surely, it is argued, any folk notion of "fairness" should lead people to understand that removing regressive subsidies will increase their society's fairness, as long as the policy is properly explained. This belief explains the high stress that policy reformers place on better communication. If ordinary people could see that the impacts from subsidy reform will be low and the long-term benefits high, this argument maintains, then they would be more resistant to manipulation by political entrepreneurs, labor organizers, and civil society advocates.

However, if citizen opposition to subsidy reforms is as a result of a lack of trust between citizens and the state, communication alone cannot solve the problem. Jordan Kyle Cohen's study of citizen perception toward subsidy reform in Indonesia found that where there is corruption in political institutions that manage existing programs, promises of reform by government is less credible. In such cases, she argues, "citizens will cling to inefficient policies not because they are unable to recognize the benefits of reform but because they do not trust political institutions to implement reforms in ways that will benefit them in practice."¹⁶ Cohen found that citizens saw fuel subsidies as being less vulnerable to diversion. Subsidies allow everyone to pay the same price for a specific commodity, which creates a sense of fairness for people who may see themselves as not having a voice. In the following section, we put this assumption of "information failure" to the test. Do people oppose subsidy reform because of a fear of change or a failure of governments to communicate? Or are there also subjectively real economic and material interests at play that have not been sufficiently recognized by international and national policy makers?

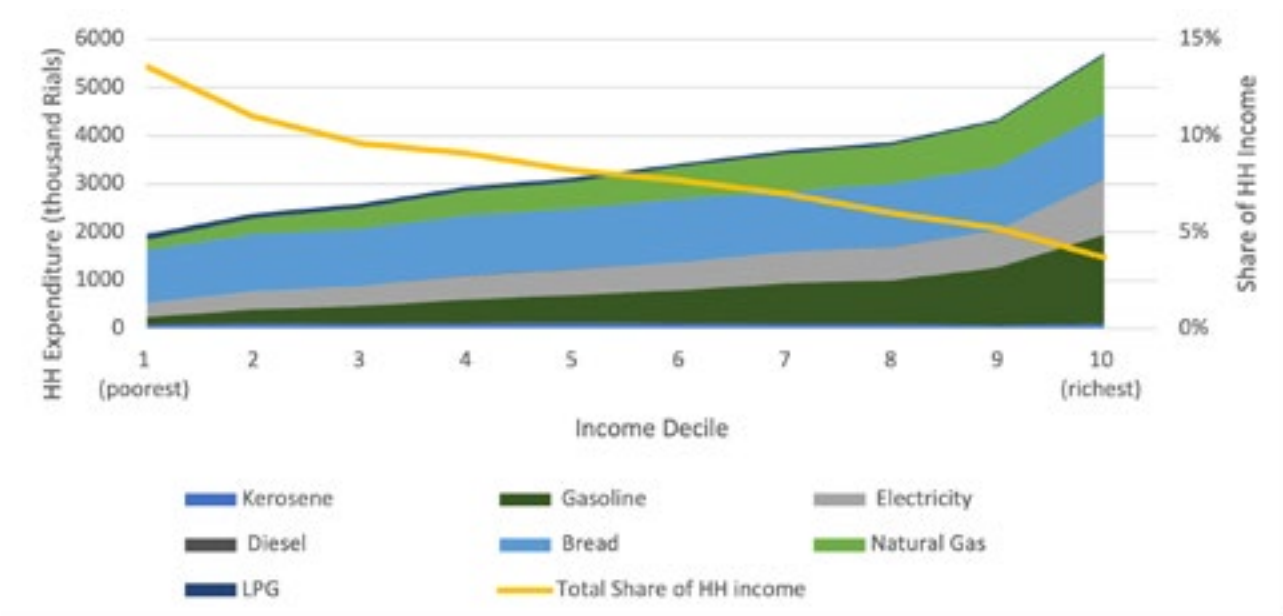
1.3 Distributional Breakdown of Energy Subsidies

Energy subsidies are regressive, meaning that higher-income households receive the largest share of benefits. One assessment that looked at welfare impacts of fuel subsidies across 20 countries in Africa, Asia, the Middle East, and Latin America found that around 65% of benefits of fuel subsidies go to the top two income quintiles, with the top quintile capturing six times more in subsidies than the bottom.¹⁷ In Iran, according to the United Nations Environment Programme (UNEP), by the year 2000 the amount of gasoline subsidy that went to the highest income decile was 78 times greater than that going to the poorest 10%.¹⁸ In Indonesia, half of petroleum subsidies went to the richest 20% of the population.¹⁹ In the Dominican Republic, before the 2009 electricity subsidy reform, the richest 10% of the population benefited seventeen times more than the poorest.²⁰

While in absolute terms most benefits from energy subsidies go to better-off households, it is well documented that subsidy removal is likely to have the greatest adverse impact on the poor.²¹ Poor households spend a much larger share of their income on energy and on basic necessities that are dependent on energy (such as food and public transport). Figure 1 shows the distribution of subsidized goods for different income groups in Iran. Compared to the rich, the poorest households spend a much larger portion of their income on subsidized goods (yellow line). However, the total amount of subsidized goods consumed by the richest are nearly three times the amount consumed by the poorest. Overall, the economic welfare of the poor is much more vulnerable to energy price increases.²²



Figure 1: Household expenditures on subsidized goods (Iran 2013-2014)



Source: Mohammedabi H. Mostafavi-Dehzoeei and Javad Salehi-Isfahani, “Consumer Subsidies in the Islamic Republic of Iran: Simulations of Further Reforms.” In Paolo Verme and Araar Abdelkrim, *The Quest for Subsidy Reforms in the Middle East and North Africa Region: A Microsimulation Approach to Policy Making*, (Springer, 2017); World Bank calculation from Iran’s Household Expenditure and Income Survey (HEIS).

The poor do not have the same level of flexibility around their expenditure levels, and energy price increases can force a reduction in their consumption levels. Removal of such subsidies can jeopardize the basic welfare of the poor and push near-poor households into poverty, potentially causing long-term consequences that may even have intergenerational impacts.²³ Faced with this possibility, low- and lower-middle-income households are the most apprehensive about removing energy subsidies and are likely to protest government plans. As a result of the risk to poor households, any attempt at reducing energy subsidies must be coupled with measures to ensure the poorest can benefit from subsidy reform.

1.4 Protecting the Poor to Pave the Path for Reform

There is growing acceptance that subsidy reforms are likely to be blocked without mitigation. More specifically, cash transfers have emerged as one of the most effective tools to reduce the immediate impact of fuel price increases in the aftermath of reforms. In one IMF study of 25 subsidy reform cases, the authors found that when the subsidy removal was paired with cash transfers and a communication strategy, all reforms were successful. Without cash transfers, however, only 17% of reforms succeeded.²⁴ From the IMF and the World Bank²⁵ to individual country assessments, there is a broad agreement that removal of subsidies needs to be paired with credible cash transfers to improve welfare outcomes for citizens.

Although the need to protect the poor from the shock of price increases due to subsidy removal is well researched and understood, recent events suggest that many governments still pursue subsidy reform without an immediate mitigation strategy. In the last two years, attempts to cut subsidies and increase prices of basic goods have caused mass riots in Ecuador and Iran 2019, in Sudan in 2020,²⁶ and more recently in India,²⁷ Malawi,²⁸ and Brazil.²⁹ In Ecuador, Iran, and Sudan, governments had communicated plans to couple price hikes with cash transfers, but none had rolled out the program at the time of the subsidy cut.





Perhaps one issue is that while much of the literature on subsidy reform promotes cash transfers, analysts also make caveats about the feasibility of cash transfers. For example, Bacon and Kojima highlight that cash transfers are the most efficient mitigation tool governments can use to implement subsidy reform. However, they also warn that for the effective rollout of cash transfers, "there must be a reasonably accurate list of low-income households to ensure that only the needy, and most of the needy, are compensated."³⁰ Much of the discourse on cash transfers still focuses on the capacity of governments to develop effective targeting tools rather than on the critical importance of sequencing and timing of the implementation. This creates difficulties for governments grappling with subsidy reform plans, as in many low- and middle-income countries, subsidies were likely introduced for the very reason that mechanisms did not exist to target and transfer other forms of benefits to the larger population.³¹

1.5 Moving the Needle: From Mitigation to Redistribution

Some experts argue that cash transfers are not merely tools to mitigate the negative effects of subsidy removal on the poor. In fact, they contend, subsidies should be removed for the very purpose of bringing about social gains, especially for the poor. Subsidy removals can bring about immediate social gains as well as long-term development opportunities and better fiscal strategies. Lindebjerg et al. take lessons from Iran, Indonesia, and Ghana to argue that "social gain needs to have a prominent role in energy subsidy reforms...rather than to be taken as a given, a social win from fossil fuel subsidy reforms requires the social dimension to be a central part of the reform policy." Similarly, Yemtsov and Moubarak argue, "Fiscal savings should not be taken as the main criterion determining reform strategy. Ultimately, the objective of [energy subsidy reform] is not to balance the budget, but rather to ensure better economic prospects, greater economic efficiency, and more equitable distribution."

Subsidy reforms can be implemented to have significant welfare improvements even with compensation that is lower than the saved expenditures on subsidies. Groot and Oostveen conduct a simulation for eleven developing countries to show that replacing subsidies with uniform cash transfers financed by the reduced subsidy expenditure can positively affect social welfare with budget-neutral reform.³² Analysis from the Asian Development Bank in Thailand, Indonesia, and India shows that the elimination of fuel subsidies can generate sufficient fiscal space to alleviate poverty, strengthen or develop social protection measures, and still cost less than the three countries spend on energy subsidies.³³ In Iran, implementation of a universal cash transfer scheme using savings from subsidy removal led to an eight points drop in the Gini coefficient, from 0.42 to 0.34.³⁴ Mostafavi-Dehzoeei and Salehi-Isfahani also analyzed how Iran could remove its remaining subsidies and protect the poor. They found that if Iran used 50% of savings from subsidy cuts to fund transfers to all households, it could increase its revenues by 0.86% and reduce inequality by a further 0.1 Gini points.

Subsidy removals provide an opportunity to make budget-neutral investments in the welfare of the population. However, energy subsidy removal does not automatically improve public welfare—policies for improved welfare need to be deliberate and should include a mixture of short-term mitigation measures and long-term human capital investments. When strategies are developed on the basis of improving welfare, the transition from fossil fuel subsidies can actually be an opportunity for reformist governments to use the political popularity of their well-timed mitigation programs to open a discussion on broader social protection and social investments.

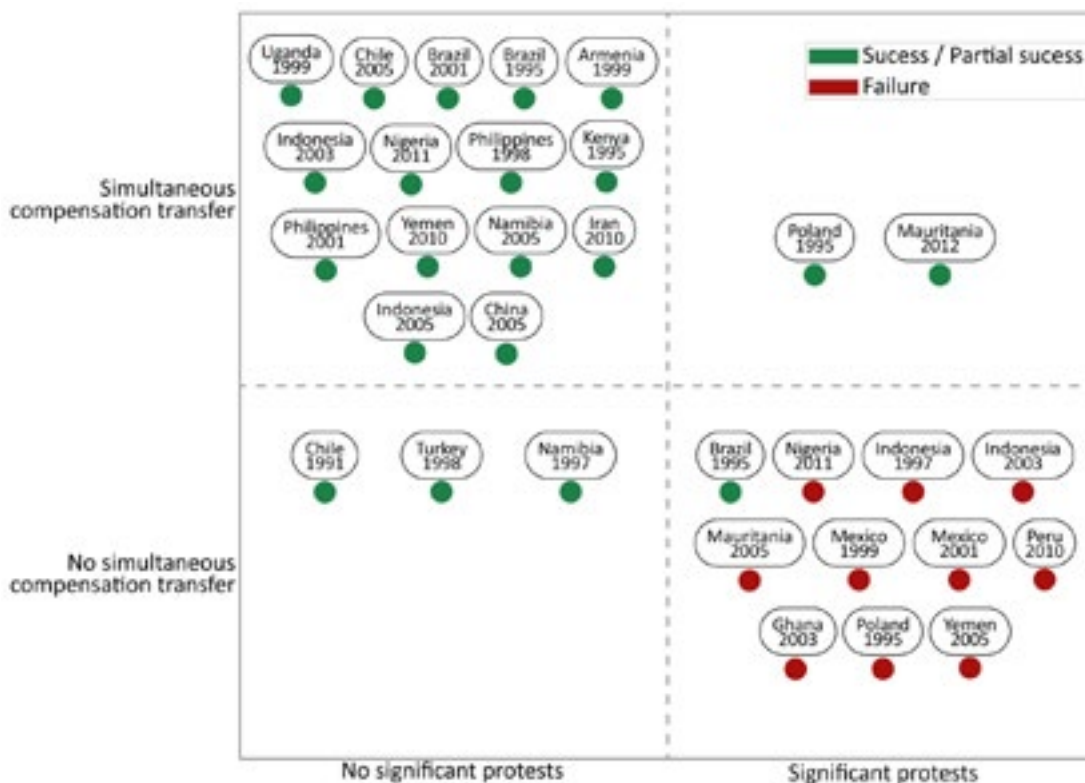


2. Quantitative Assessment

2.1 Analysis of Cash Transfers in Subsidy Reforms Attempts

We mapped thirty-one cases of energy subsidy reforms in developing countries over two decades (1991–2012) to visualize the links between the success of a reform bid on one hand, and the presence of social protests and compensation transfers at launch on the other. The results are presented in Figure 2 below. The list of cases stems from the 2013 IMF study *Energy Subsidy Reform—Lessons and Implications*, while the assessment of success, protests, and compensation transfers is based on our review of available sources, including World Bank studies³⁵ and media coverage (see endnote 37 for detailed definitions). The figure includes a diverse range of cases, such as fuel, electricity, and coal price reforms. Its point is to showcase general dynamics connecting these reform events, notwithstanding the fact that each of them was also influenced by other distinctive characteristics that affected its outcome. Finally, compensation transfer had to include either a direct cash transfer or, in case of electricity subsidies, introduction of a below-cost “lifeline” tariff, and had to be disbursed at the same time as the introduction of a subsidy cut.

Figure 2: Thirty-one cases of energy subsidy reform between the years 1991–2012: mapping³⁶



There are a few findings that emerge from this analysis. Failure of reform attempts is strongly correlated with the presence of significant protests. Specifically, all unsuccessful subsidy reduction bids occurred under circumstances where there was significant protest and a lack of simultaneous compensatory cash transfers. Only one of the analyzed reform events, the 1996 fuel subsidy reduction in Brazil, succeeded despite this challenging combination. When there are no protests, subsidy reforms appear to be bound to succeed. Lack of protest during the implementation of a reform can also be perceived as a success in its own right for the government. This cross-section of a successful implementation combined with a lack of protest was mostly achieved when cash compensation was delivered simultaneously. In fact, cash

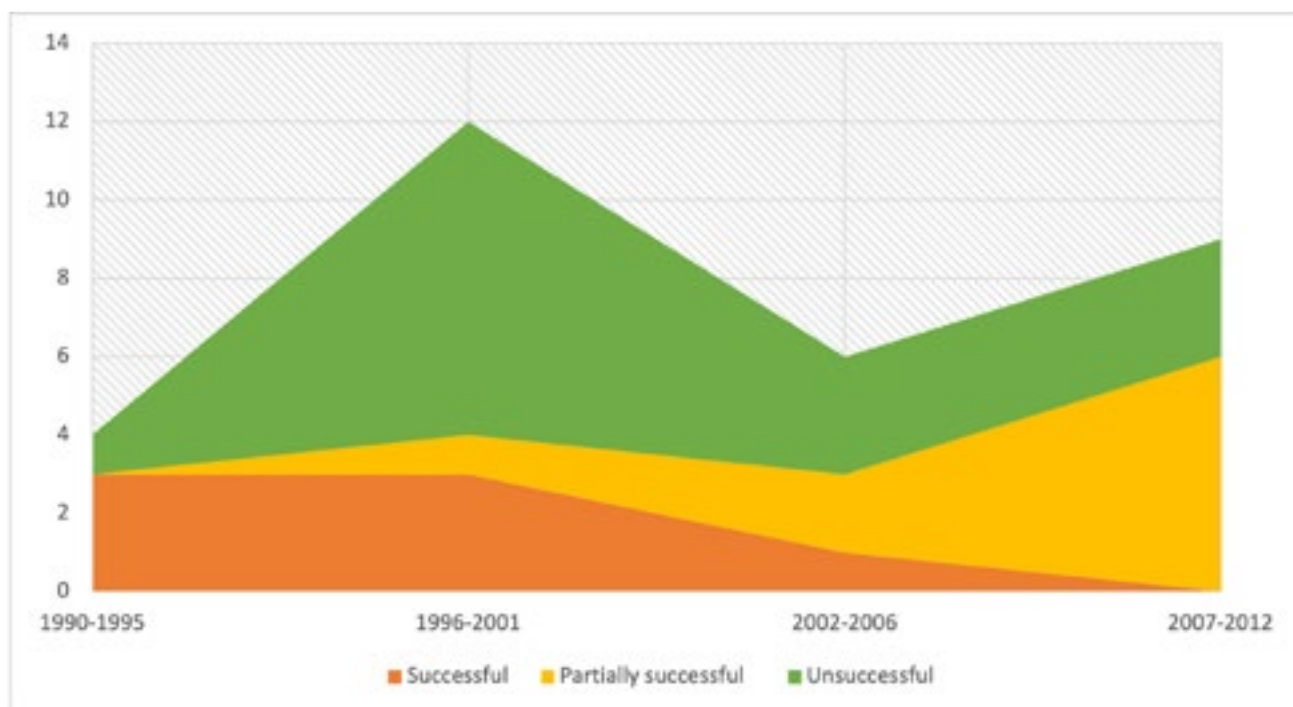


compensation appears to significantly increase the chances of a reform’s success—all the reforms that included a cash compensation component were successful or at least partially successful.

Two hypotheses can be proposed on the linkage between cash-transfer compensation and protests against a reform. First, cash transfers could serve as a preventive tool, compelling affected social groups to comply with a reform without protesting. Second, even if protests take place despite the delivery of cash compensation, they might have a lesser chance of thwarting a reform due to reduced negative impact of a subsidy cut. Regarding the first hypothesis, while it is impossible to predict what would have happened in countries that successfully reduced subsidies had there been no compensation in place, there exists empirical evidence that facilitates it. Five of the analyzed countries tried implementing a subsidy reduction twice in a short succession. The first attempt featured no cash compensation for affected social groups and ended up being thwarted by protests. The second attempt in each of these five countries was accompanied by cash compensation and the reforms were successfully implemented. These countries are Poland in 1990 and 1998, Ghana in 2003 and 2005, Indonesia in 2003 and 2005, Yemen in 2005 and 2008, and Mauritania in 2008 and 2012. Regarding the second hypothesis, the fact that among countries that did experience protests, all those with a compensation program in place were still successful (unlike those without a cash transfer) substantiates the possibility that transfers can help overcome social resistance to energy subsidy cuts.

Finally, fully successful subsidy reduction reforms were progressively harder to come by among the featured countries toward the end of the analyzed period (Figure 3 below). After a spike of unsuccessful attempts at the turn of the century, more governments started engaging in partial reforms, scaling back original plans in order to secure some measure of progress. Moreover, from 1999 onwards, only reform events including a cash compensation component were successful. The last case of a reform success without a simultaneous cash transfer among the analyzed countries was the 1998 fuel subsidy cut in Turkey. Since that time, a compensation scheme appears to have become a key driver of a reform’s success.

Figure 3: Thirty-one cases of an energy subsidy reform in in low- and middle-income countries between the years 1991–2012: timeline





3. Case Studies

Methodology

We attempted to choose countries with regional diversity, representing Asia Pacific, the wider Middle East and North Africa (MENA) region, and the Americas. We also wanted to provide a balance between energy exporting and importing contexts. Further, to ensure the relevance of the social angle, the case studies focus on countries where energy (fuel) subsidies generated broad-based benefits and reached the majority of the public.

Attempting to find "matching pairs"—of a country with at least one successful and one unsuccessful attempt at reform—gave us Indonesia (2005 and 1998) and Iran (2010 and 2019). This approach allows us to keep structural or institutional differences constant, although it does not account for political timing. For our third pair, we elected to analyze the experience of the Dominican Republic (2008) and contrast it to the unsuccessful reform attempt in Ecuador (2019). The selection of two countries in the Americas was both driven by regional representation, and the specific dynamics of interest groups in the Dominican Republic (taxi drivers) and indigenous people in Ecuador. We felt that these examples could prove relevant for policymakers grappling with complex contexts for designing subsidy reform strategies.

The focus of our case studies is to analyze the short-term success or failure of each reform attempt, looking at the process through which governments can create an enabling environment to implement reforms. Analysis of longer-term economic policies in Indonesia, Iran, and Costa Rica are outside the scope of this study. Therefore, our definition of "successful reform" is one where the price increase was sufficiently large to impact household welfare, where it was not overturned (excluding inflationary impacts), and where there were no major public protests.

Indonesia (2005 and 1998)

Historical Context

Indonesia has used commodity subsidies since at least the early days of its independence, at an expenditure equating to 20% of the country's revenue in 1965.³⁷ Post-independence governments used commodity subsidies to provide tangible benefits to citizens and protect people from high inflation rates, which by some accounts were estimated to have reached 500% under Sukarno.³⁸ The New Order administration of President Suharto also relied on these subsidies to increase his support and counter his critics.³⁹

In 1982, Suharto successfully passed one round of subsidy reforms and increased gasoline prices by 385%.⁴⁰ At the time, political activities were banned and limited resources are available about the social impacts of this reform. Suharto's next attempt to reform fuel subsidies under Indonesia's New Order came in the wake of the 1998 Asian Financial Crisis, and fuel price hikes were so unpopular that the attempted reform led to the overthrow of the regime. This attempted reform is discussed more below.

Since the fall of the New Order regime, Indonesia has attempted subsidy reforms numerous times, including in 2002 (another quickly reversed attempt), 2005, 2008, 2013, and 2014-15. This case study will focus on the successful reforms of 2005, which served as a model used again for the three later rounds of subsidy reform.



Before subsidy reforms in 2005, 24% of the government's expenditures went to subsidies.⁴¹ Fuel and electricity subsidies accounted for 90% of that figure, amounting to nearly \$10 billion annually.⁴² After two unsuccessful attempts at subsidy reform (in 1998 and 2002), in March of 2005, the government increased prices by 29% and again in October by an additional 114%.⁴³ The reforms were broadly accepted by the public and set the stage for numerous additional rounds of reforms that would be rolled out in the following decade.

Indonesia's experience with subsidy reform is regarded as highly successful and frequently cited as a “best practice” example. Indeed, it may be difficult to find any literature on subsidy reform that does not cite the experience of Indonesia.

Distributional Breakdown of Subsidies

Most of the benefits from Indonesia's gasoline and diesel subsidies went to better-off households who could afford to own vehicles. According to government calculations, the richest 40% of households captured 70% of subsidies, while the bottom 40% received 15% of subsidies.⁴⁴ The poorest 10% of the population accounted for less than 1% of subsidized gasoline use.⁴⁵ However, as in other countries described above, the poorest households were still most vulnerable to price changes. Poor households in Indonesia benefited from lower fuel prices both directly, and as indirect consumers of public transportation, food, and agriculture inputs.⁴⁶ The price of all these services and goods contains a significant fuel cost component. Poor households in Indonesia were spending 65% to 75% of their income on food, so the inflation in food prices alone would have serious consequences for poor and near-poor households.⁴⁷ The government predicted that without mitigation, planned subsidy removals would increase the poverty rate from 16.66% to 22%—pushing more than 12 million people into poverty.⁴⁸

Implementation and Mitigation

In 2005, amid concerns over budgetary pressures caused by fuel subsidies and the rise in global oil prices, the government of President Bambang Yudhoyono began implementing subsidy reforms. Price increases in March and October (by an average of 29% and 114%, respectively) reduced the budget deficit by \$4.6 billion in 2005 and \$10 billion in 2006.⁴⁹ For households, this change meant the price of gasoline and diesel more than doubled, and the price of kerosene nearly tripled.⁵⁰

As the government of Indonesia began the discussion of subsidy cuts in 2005, they decided to review options to redistribute parts of the savings to protect at-risk households from price increases.⁵¹ The government decided to use part of the expected fiscal savings to compensate poor households for the increase in living costs by implementing a number of welfare programs. The largest of these was the Bantuan Langsung Tunai (BLT), a series of unconditional monthly cash transfers to the poor. The BLT program went from an idea to delivery in less than five months. By October 2005, beneficiary households across all provinces in the country began receiving Rp 300,000 (around \$30) to compensate for the price increases. BLT targeted 35% of the population, a substantially higher target than the 16% poverty line.⁵² Over the next year, every three months, payments were made to over 19 million beneficiary households, totaling Rp 1.2 million (\$120) for roughly 35% of households.⁵³ These transfers, though modest, were more than enough to cover the cost of increasing fuel prices, but cost the government one-quarter of what energy subsidies had. BLT transfers amounted to around 15% of the average consumption budget of households, whereas energy expenditures had constituted under 9% of household expenditures.⁵⁴ BLT transfers to 35% of households cost the government \$2.3 billion, roughly 25% of the amount saved from



subsidy reduction.⁵⁵ The government spent an additional \$1.87 billion of its savings on education, health, and rural infrastructure programs.⁵⁶

Before BLT was rolled out, Indonesia did not have a cash transfer system in place, nor did it have a complete database it could use to identify and reach poor and vulnerable households. Beneficiary selection for BLT used a mixture of community targeting, self-assessment, and pre-existing data, and proxy-means testing to identify beneficiaries.⁵⁷ In practice, most of the selection was made through sub-village heads. At first, exclusion mistakes in the original allocation led to protests and corruption allegations.⁵⁸ Initially, 15.5 million households were deemed eligible for the BLT transfer (around 28% of the population), but after protests from excluded households, the government commissioned a second round of surveys. This increased the number of total eligible households to 19.2 million (35% of the population).⁵⁹

Measurement of Success

Unlike previous attempts to increase energy prices, which had resulted in large and violent demonstrations, these drastic price increases were largely unopposed. Bacon and Kojima credit the success of these reforms to the credibility of the newly elected Yudhoyono government; good communication with the public; and critically, the cash transfer program.⁶⁰

The timely and well-prepared BLT program helped the government of Indonesia cushion adverse impacts of energy price increases on the poor and avoid a spike in the poverty rate. The program also helped attract public support for the reforms, which had been widely unpopular in the past. Overall, the reforms also opened up needed fiscal space for long-term investments to improve the population's welfare, including better infrastructure, education, and healthcare.⁶¹ It is important to note that the BLT program was not developed as a poverty reduction system. Its purpose was to provide temporary protection for poor households and build public support for reforms.

The BLT program was able to prevent the estimated poverty rise due to the increase in energy prices. Initial estimates suggested that subsidy reforms would cause a 5% increase in the poverty rate, which stood at 16.66%.⁶² In March 2006, Statistics Indonesia released updated poverty numbers, showing the poverty rate at 17.75%, which by March 2007 had fallen back down to 16.58%.⁶³ Beyond short-term mitigation, BLT also had positive effects on household welfare, according to analysis from the World Bank. Despite the temporary nature of the transfer, it helped increase expenditures, utilization of health services, and adult employment, while helping decrease child labor.⁶⁴

Perhaps the best marker of success for BLT was its popularity among the general public. It allowed the Yudhoyono government to show it cared for the poor and demonstrated the government's ability to deliver social services. A survey conducted in December 2005 showed that President Yudhoyono maintained his high popularity after the price hikes, and that 84% of poll respondents approved of the BLT program.⁶⁵ This popularity is even more striking due to some of the reported challenges in targeting beneficiaries in a short amount of time, although much of this challenge was resolved through increasing the coverage of the program. A government evaluation carried out by the Coordinating Ministry of People Welfare found an 8% inclusion error and a 22% exclusion error in the original list of beneficiaries.⁶⁶



Contrasting Case: Indonesia 1998

In contrast to the successful 2005 reform, the previous attempt to reform subsidies in 1998 led to widespread protests and the collapse of the government. The Asian Financial Crisis in 1997 had caused Indonesia's economy to contract by 13%. Indonesia sought assistance from the International Monetary Fund (IMF), and in exchange for a \$10.7 billion loan, agreed to a series of major reforms.⁶⁷ President Suharto signed a 50-point economic adjustment program with the IMF.⁶⁸ These reforms included a requirement for the government to remove fuel and electricity subsidies. On May 4, 1998, the government implemented a fuel price hike, increasing the price of kerosene by 25%, diesel fuel by 60%, and petrol by 71%.⁶⁹ The announcement of price hikes was met with a violent response, and widespread rioting ensued. Coupled with the impact of the Asian Financial Crisis, the violence led to the eventual ouster of the Suharto government.⁷⁰ Although there was wider discontent with the Suharto government and the fallout from the economic crisis, the subsidy cuts were the trigger for protests that began on May 4, especially in the cities of Medan, Bandung, and Yogyakarta, and developed into general rioting.⁷¹ Serious acts of violence were committed during, and in response to, the riots, including murder, rape, and looting—particularly directed at the ethnic Chinese population.⁷² By May 21, Suharto was forced to step down. Unlike Suharto, the subsidies remained, and accounted for one-quarter of the government's budget in the 1998–99 fiscal year.⁷³

It is impossible to know whether the 1998 subsidy attempt failed because of a lack of mitigation measures, or due to the wider economic context in Indonesia and the region. However, other attempts at subsidy reform in Indonesia, including during 2000 and 2002, suggest that even without an economic crisis, the general public would not accept subsidy removals without proper compensation. In October 2000, the government increased gasoline prices by 15%, diesel by 9%, and kerosene by 25%—much smaller increases than the successful 2005 attempt. These price increases were met with violent demonstrations, including the burning of gasoline stations, a strike by public transportation workers, and abduction of two local government officials.⁷⁴ In 2003, the government announced a 21.9% price increase for diesel. This was again met with mass protests and riots, eventually forcing the government to cut the increase to 6.5%.⁷⁵ In both of these attempts, the government did try to provide compensation to the poor, through measures such as subsidized rice and increased spending on health, education, and social welfare.⁷⁶ However the compensation amounts were very small, with the 2002 compensation package reported to have cost 0.2% of GDP, compared to the estimated fiscal savings of 2.5% of GDP.⁷⁷

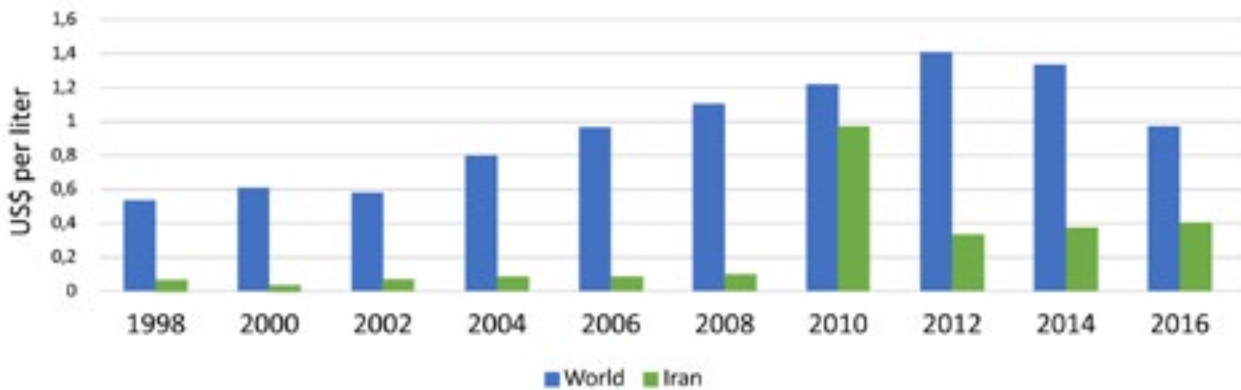
Iran (2010 and 2019)

Historical Context

During the Iran-Iraq war (1980-1988), the government of Iran began implementing consumer subsidies for basic goods, including food, energy, and medicine.⁷⁸ They were intended to support the struggling population when the country lacked other mechanisms to provide direct support to vulnerable households. However, as subsidies are difficult to remove, the majority continued long after the end of the war, and many are still in effect. In 2010, gasoline in Iran was 10 cents per liter, and diesel was 2 cents per liter (see Figure 4).⁷⁹ Low prices maintained through subsidies cost \$70 billion annually, twice the size of the national budget and 20% of GDP.⁸⁰ Other subsidies, such as those for bread and medicine, were estimated at \$5 billion.⁸¹ These subsidies placed a huge burden on the budget, with Iran having the highest fuel subsidies in the world.⁸²



Figure 4: Pump Price for Gasoline⁸³



While the subsidies were presented as a tool to support the poor and reallocate the country's oil wealth back to the population, their regressive nature was recognized, and every president after the end of the Iran-Iraq war attempted to reform the system. Attempts during the administrations of Presidents Akbar Hashemi Rafsanjani (1989–1997) and Mohammed Khatami (1997–2005) faced opposition from politicians and the parliament.⁸⁴ Even though much of the plan that President Mahmoud Ahmadinejad eventually implemented in 2010 had been developed during previous administrations, those presidents could not garner sufficient support to implement the reforms.

The first successful attempt at subsidy reform came at an unlikely time, following popular uprisings in response to the controversial re-election of President Ahmadinejad in June 2009. In March 2010, the parliament ratified the Targeted Subsidies Act, which called for a gradual increase of energy prices from 2010 to 2015. The act required payments of a maximum of 50% of the revenue from the price increases to be redistributed to the population as cash transfers, in-kind payments, or improvements to the social security system.⁸⁵ Another 30% was set aside for industry and business, including loans for energy-efficient technology and credit to mitigate the impact in the short term. The law stipulated for the remaining 20% to be used for infrastructure development and the cost of government programs.

Distributional Effect

As far back as 2001, the government was aware of the inequitable and regressive nature of the country's subsidy regime. A country analysis from the World Bank explains:

[Iran's subsidies] are untargeted and ineffective... they do not proportionately benefit the poor. In fact a large part of the subsidy system, including those directed to basic needs such as bread and medicine, are highly untargeted vis-a-vis the poor.⁸⁶

President Ahmadinejad regularly highlighted this inequity in his speeches leading up to the implementation of price increases, stating that 70% of the population only received 30% of subsidies.⁸⁷

As discussed in Section 3, with the regressive subsidy regime, the rich received more of the total benefits from subsidies in Iran, even though a larger portion of household spending among the poor went to subsidized goods. The richest decile received about 15 times as much from the gasoline subsidy as the poorest decile.⁸⁸ In total, subsidized goods accounted for more than 6% of the expenditure of the poorest



households, compared to 2% for the richest (Figure 1). Given that the poor rely much more on subsidized goods and would be less able to cut other expenditures, the 300% price increase on subsidized goods would have thrown millions of people into poverty.⁸⁹

Implementation and Mitigation

At 9:00 p.m. on December 18, 2010, President Ahmadinejad announced what would be the most ambitious subsidy reform, as measured by a single price increase in energy, anywhere in the world. Overnight, the price of gasoline for private vehicles increased by 400% for the first 60 liters, and by 70% beyond that limit (see Figure 4). Diesel prices increased by 800% up to a set limit, and by 2,000% beyond that.⁹⁰ The price of natural gas (which 75% of Iranians use to heat their homes) increased by up to eight times.⁹¹ Even the price of bread was doubled.⁹² Despite the Targeted Subsidy Law's stipulation for gradual subsidies, the government decided to increase the prices in one sweeping move.

Perhaps to the surprise of everyone, including the Iranian government, the reforms did not result in any notable backlash. This successful increase is attributed largely to the cash transfer program. Subsidy reform in Iran came with a monthly payment that at the time amounted to \$45 per person per month, which eventually reached 95% of the population.

Understanding the potential for public apprehension about the price increases, the government began depositing two months' worth of the cash transfers (about \$90 per person) into individual bank accounts starting in October 2010—two months ahead of the planned price increases. Households could see the funds in their bank accounts, but they could not access them until the day the price increases took effect. This approach garnered so much public confidence that on the day the funds were released (the same day as price hikes took effect), people did not rush to withdraw their funds, as was feared by the government.⁹³ Only 0.5% of funds from the cash transfer accounts were withdrawn from banks on the first day of the reform.⁹⁴ The universal nature of the transfers also helped avoid some of the problems that Indonesia had faced with capture and exclusion in targeting 35% of households.⁹⁵

The \$45 per person per month amounted to \$180 for a family of four—which was more than half of the 2011 monthly minimum wage of \$330.⁹⁶ Comparing the distributional effect of the universal cash transfer, Salehi-Isfahani et al. found that those in the lower-income decile received nearly 13 times more than what they spent on subsidized goods, compared to 1.8 times for the richest decile.⁹⁷ They also found that transfers constituted a much larger percentage of the poor's incomes, reaching 26% for the lowest decile, compared to less than 2% for the richest income decile.⁹⁸

The government opened up the cash transfer to anyone who wished to apply. In the initial four months of the program, 62 million people (82% of the population) began receiving the cash transfer. But additional households registered, and the coverage reached about 72.5 million people within six months (97% of the population).⁹⁹ Analysis from Salehi-Isfahani et al. shows that the coverage was higher in rural areas than urban areas, suggesting that the 3% coverage gap was perhaps not entirely attributable to access issues.¹⁰⁰

The decision to implement a universal transfer rather than a targeted program was largely based on the inability of the government to identify the poor. As early as 2001, the World Bank wrote:

The absence of a clearly articulated social protection strategy could act as a barrier to implementation of the reforms. The Bank plans to work with the Government in preparing a social assessment of the reform program in terms of its impact on the different income groups, and articulating a social protection strategy which builds on the various Plan initiatives.¹⁰¹



Initially, the government undertook a self-reported national survey to help identify the poor and vulnerable based on their declared income. After analyzing around 15 million forms that families had submitted, the government grouped each household into three categories: the bottom 40% would receive the highest transfer; 30% in the middle-income group would receive a smaller transfer; and the top three deciles would receive nothing.¹⁰² However, after they spent over \$30 million, the targeting process was met with public complaints and ridicule.¹⁰³ This led the government to announce that the program would be open to any household that wished to apply.

As a result of the high amount of the transfer and lack of targeting, the program's total cost was much higher than the Targeted Subsidies Law had envisioned. This meant that the initial breakdown of mitigation measures (50% for transfers; 30% to support industry; and 20% for public infrastructure) became 80% for cash payments and 20% to support industry—with no additional funds remaining for infrastructure.¹⁰⁴

One important factor to note, however, is that unlike in most other countries, Iran's energy subsidies had not been a response to an immediate fiscal strain. The purpose of the reform itself was to fund a cash transfer program to improve resource allocation to the poor.¹⁰⁵ This was a central part of Ahmadinejad's 2005 election pledge to "put the oil wealth on every Iranian family's *sofreh* (dinner table)."¹⁰⁶ Within this context, Iran managed to implement one of the largest subsidy reform programs to date, and albeit accidentally, become the first country in the world to implement universal basic income.

Measurement of Success

Nearly all analyses attribute the subdued response to the drastic price increases to the success of the cash transfer program.¹⁰⁷ However, more than just creating an enabling environment for the reform, the transfers also significantly reduced poverty levels. Saleh-Isfahani et al. found that cash transfers reduced the poverty rate from 20.2% to 12.0% in rural areas and 12.0% to 8.8% in urban areas.¹⁰⁸ Nationally, this represented a 4.7 percentage point reduction in the poverty rate, meaning there were 3.5 million fewer poor people.¹⁰⁹ Income inequality as measured by the Gini coefficient also declined by 8 points from 0.42 to 0.34.¹¹⁰

Due to economic factors external to subsidy reform, much of these gains were subsequently eroded due to rising inflation and unemployment, which were likely caused by a mixture of sanctions and poor economic policies.¹¹¹ The overall economic context in Iran makes it difficult to measure the potential long-term impact of the subsidy removal and assess its ability to improve the welfare of poor households by transitioning from a regressive subsidy regime to a universal transfer.

Contrasting Case: Iran 2019

In November 2019, the government of President Hassan Rohani attempted a second energy price increase, the first major reform since 2010. The news came as a near-total surprise, with Iranians waking up to find fuel prices had doubled—although still a smaller hike compared to 2010. The price increase was met with mass protests across the country, some of which turned deadly. According to figures released by an Iranian parliamentary committee, 230 people were killed.¹¹²



Ignoring lessons from the 2010 reform, the government did not provide communication in advance of the reform, nor did it provide compensation to households for the price increase. Just days after the price hikes and protests, Djavad Salehi-Isfahani, an Iranian-American economist, wrote:

*The Rouhani government may have forgotten, if it ever learned it, the main lesson from the 2010 reform. And the lesson was this: do not raise energy prices without making at the same time a commitment to compensate the poor. Ignoring this important lesson, this time the Rouhani government opted to raise prices without such a commitment.*¹¹³

The government had planned to use the additional income from the price increase, which was estimated to be \$2.55 billion a year, to increase cash transfers for 18 million poor households.¹¹⁴ However, either this plan was not effectively communicated, or perhaps Iranians, under severe economic strain, did not trust their government to follow through. In any case, no information was provided about which 18 million households would receive the benefits or how the government would identify them. The plan, including a progressive allocation that would provide a transfer of between \$13 to \$48 to each family, was only announced a few days after the price hikes took effect.¹¹⁵ Unlike the 2010 program, in which a uniform amount was given to every household, the new transfer created confusion about eligibility and total benefit size.

Despite the announcement of cash transfers shortly after the price hike took place, the protests only increased, expanding to spread to over 100 urban centers. The city of Mahshahr, in Iran's oil-rich Khuzestan province, was at the center of these protests. The province is home to a large ethnic Arab minority. The city has high poverty rates and one of the lowest employment rates in Iran.

Less than two months after the protests in Mahshahr, Iran's Vice President, Eshaq Jahangiri, visited the city. In a public statement, he explained that the protests were not politically motivated, but rather an indication that "the people of Khuzestan, especially the ports of Imam and Mahshahr, have historically shown that they hate poverty and discrimination and expect the authorities to take basic measures for their livelihood."¹¹⁶ During this visit, Jahangiri announced development plans for the city and province, including improvements to urban housing, sewage, and employment programs. The 2019 price increases did remain partially in place, and the mitigation programs were implemented after the protests had already begun. We can only speculate whether the backlash and violence could have been avoided if the government had started the cash transfers sooner. The events in Mahshahr show how anger over fuel price hikes can turn into larger demonstrations against historical exclusion and inequality.

Dominican Republic (2008)

Historical Context

In the 1990s, the government of the Dominican Republic began a universal price subsidy for Liquefied Petroleum Gas (LPG). The subsidy aimed to discourage households from using charcoal, which had detrimental effects on people's health and caused deforestation.¹¹⁷ While the subsidy was successful in getting people to transition to a somewhat cleaner energy source, it also significantly increased LPG use for other activities, including transportation, particularly among the poor. Because of the reliance of poor households on LPG, it was generally exempted from energy policy reforms.



An initial set of LPG subsidy reforms in the Dominican Republic took place in 2004. The government removed LPG subsidies for major businesses and capped LPG subsidies to consumers for up to 100 pounds in weight. From June 2005, the subsidy provided a fixed price for LPG to a fixed compensation rate of 60 US cents (RD17.35) per gallon. However, this only represented 20 percent of LPG consumption, as most users were small consumers and businesses, or public transportation.¹¹⁸

In 2008, the global economic slowdown, tropical storms that disrupted agricultural production in the country, and a contractionary monetary policy that reduced economic activity resulted in an unmanageable fiscal deficit.¹¹⁹ With the global oil price increases, by 2008 the country's LPG subsidies were equivalent to 0.5% of the GDP.¹²⁰

Distributional Effect

As in most countries, the generalized energy subsidies in the Dominican Republic (for LPG and electricity) provided more support for the poor relative to their income, but in absolute terms, were regressive. The richest decile benefited at least five times more than the poorest.¹²¹ The IMF estimated that if the subsidies were cut and transferred to poor households, each family would receive \$130 per month—enough to eliminate extreme poverty.¹²² However, subsidized LPG made up a larger share of the income of the poorest decile. This meant that subsidy removal would have significant financial implications on the poor.

However, in addition to poor and near-poor households, a second group that would be particularly hurt with the removal of LPG subsidies was public transport drivers. Public cars, or *conchos*, are private route-based taxis, used as one of the main means of transport in urban areas. A large number of these taxis use LPG for fuel. The subsidy cut would have both impacted the income of the drivers, and potentially led to an increase in the fare for their passengers—many of whom are low-income individuals. Transport unions representing public transport drivers in the Dominican Republic are able to exert political influence. Drivers affiliated with the largest union, Fenatrano, transport 2 million passengers each day in Santo Domingo, the country's capital city, which has a population of around 3 million.¹²³ To ensure the success of the reforms, the government had to find a mechanism to support these public transport drivers, both to protect their livelihood and avoid opposition from these powerful unions.

Implementation and Mitigation

In 2008, the government began its major LPG subsidy reform, which essentially entirely removed the generalized subsidy. In its place, the government introduced two targeted transfer programs: the Bonogas-Hogares for poor households, and the Bonogas-Choferes for transport drivers who relied on low-cost LPG for their livelihoods.

The implementation of Bonogas-Hogares would not have been possible without the existence of the country's social safety net program, Solidaridad.¹²⁴ Solidaridad was launched in the Dominican Republic in 2003 in response to the economic crisis in the country. The program had helped create a national database of low-income households (SIBUEN) that contained information on close to 60% of households in the country. The database was initially set up through a national survey that covered 56% of the population, but allowed for continuous enrollment and application. The poverty status of individuals in the database is determined through a proxy means test. The government, however, decided to cast a wider net of eligibility for Bonogas-Hogares. While Solidaridad reached 20% of households, Bonogas-Hogares reached 40% of households. The government chose to target three income groups from their



database: the extreme poor, the moderately poor, and the lower-middle-income.¹²⁵ The transfer amount was sufficient to cover six gallons of LPG per month at the market rate at the time.¹²⁶

The second program, Bonogas-Choferes, was designed to support taxi drivers who used LPG to fuel their vehicles. For this group, the allocation was equivalent to the price difference of 90 gallons of LPG per vehicle. The cost for the government was estimated at \$85 per vehicle per month, and it covered around 19,300 vehicles.¹²⁷ According to Inchauste et al., the inclusion of taxi drivers in the program was largely to gain the buy-in from the country's powerful transport unions. Government leadership held numerous meetings with the heads of the unions to negotiate the compensation package and get buy-in for the reforms. However, analysts also suggest that most drivers belong to the lower-middle class.¹²⁸ Furthermore, users of these taxis are also likely to be in the lower-income groups, which means that transferring the increased cost of LPG would not be possible.

Measurement of Success

The two Bonogas programs significantly reduced the costs that the subsidies had been incurring to the government. While the LPG subsidies equated to 0.5% of GDP, Bonogas-Hogares and Bonogas-Choferes amounted to 0.13% of GDP in 2009.¹²⁹ Critically, the program also helped secure general public buy-in and the support of powerful transportation unions. In fact, the implementation was so successful that the government followed a similar approach to reform electricity subsidies in 2009 with the launch of a program called Bonoluz.

Unlike the LPG subsidies, the distributional impact of the Bonogas program was progressive in both absolute terms and as a share of income for poor households. Analysis found that 49% of Bonogas expenditures went to the bottom 40% of the income distribution.¹³⁰

Ecuador (2019)

Historical Context

Fuel subsidies were introduced in Ecuador in 1974 when oil prices were high and the military regime of Guillermo Rodríguez Lara was aiming to buy support from groups that opposed him. The prices of gasoline, diesel, and LPG only increased a few times before 2019: first in 1982, then 1998, 2000, and for the last time in 2003.¹³¹ Since they were introduced, these subsidies have cost Ecuador's Treasury \$60 billion.¹³² Between 2000 and 2019, these subsidies cost the country an average of \$2.3 billion per year—equivalent to 7% of public spending and two-thirds of the deficit.¹³³

In March 2019, the IMF Executive Board approved a \$4.2 billion loan for Ecuador.¹³⁴ In exchange for the loan, the government of President Lenin Moreno agreed to implement a number of fiscal reforms. Key to the agreed targets was the stipulation that the country would turn its fiscal deficit into a surplus. The government elected to eliminate subsidies on diesel and gasoline, which would save around \$1.3 billion per year.¹³⁵



Distributional Effect

Analysis undertaken in advance of the 2019 attempted subsidy reform suggests that diesel and gasoline subsidies are even more regressive in Ecuador than in other countries analyzed in this paper. One study found that gasoline subsidies cost \$20 to transfer \$1 to the bottom income quintile and diesel subsidies cost \$9.¹³⁶ Gasoline subsidies were regressive in nature in both absolute terms and as a share of household income, with more than half being captured by the richest income group. The same study found that the indirect impact of diesel subsidies harmed the poor more and had a larger impact on their share of household income.

Another assessment went as far as saying that "eliminating only gasoline and diesel subsidies would not impact poverty and inequality."¹³⁷ However, the authors make the caveat that their assessment does not look at indirect costs associated with price increases and that behavioral and general equilibrium analysis would be needed to complement their microsimulation. They also admit that the data they used to conduct the analysis was from 2011-12, as more recent data was not available.

Implementation and Mitigation

On October 1, 2019, President Moreno's government announced the sudden removal of gasoline and diesel subsidies with Presidential Decree 883. This decree resulted in a doubling of diesel prices and a 25% increase in gasoline prices overnight. To mitigate the impact of the price hikes, President Moreno promised to increase social protection transfers to poor families from \$50 to \$65 per month and increase the program's coverage to 30% of households.¹³⁸ However, the protection mechanisms had not come into force at the time the price increases took effect.

At the time of the price hike, Ecuador had an existing social protection system providing targeted income support to low-income households with children under 18, poor households with the potential to carry out productive and income-generating activities, low-income seniors over 65 years old, and vulnerable people with disabilities.¹³⁹ Despite some issues with coverage and targeting, the system could have been leveraged to provide immediate support to households simultaneously with price increases.

In a 2019 study conducted before the failed reform attempt, Schaffitzela et al. found that compensating the poorest 40% of households for the adverse distributional effects of price increases would cost \$13.1 per household per month for diesel and \$6.1 for gasoline. The cost of this transfer would equal 25% of savings from the gasoline subsidy removal and 40% of savings from the diesel subsidy removal, leaving 75% of revenues from gasoline price increases and 60% from diesel able to go back to the budget. However, the government chose not to follow this recommendation.

Public Protests and Reversal of Reforms

The government's announcement sparked a wave of protests and riots across the country. On October 3, when the price increases took effect, taxi, bus, and truck drivers blocked streets and closed bus stations. Indigenous groups, students, and unions joined the protests later in the day. On the same day, President Moreno declared a state of emergency.¹⁴⁰ He was forced to move his administration out of Quito to Guayaquil, 270 miles south.¹⁴¹

President Moreno repeatedly stated that he would not reverse the subsidy cuts, but called for dialogue to negotiate a solution.¹⁴² In advance of the price hikes, most commentators had warned of potential



protests from public transport unions, whose members could paralyze the country through a general strike. As Schaffitzela et al. explain, "Diesel subsidy reform is viewed by all experts as rather contentious, mainly due to the influence of the well-organized transport sector that highly depends on low diesel prices." However, on October 4, the government managed to come to terms with the transportation unions, having reached an agreement including a cap on the planned bus fare increase.¹⁴³

In the end, it was not the powerful transport unions that forced the reversal of subsidy reforms in Ecuador, but rather indigenous groups, many of whom came to Quito from the Andean and Amazonian provinces to join the protests.¹⁴⁴ Indigenous groups rely on subsidized fuel to transport their goods to collection centers, and the reform threatened their livelihoods.¹⁴⁵ Many also saw low fuel prices as one of the few benefits they received from the government, which often forcefully used indigenous land for resource extraction.¹⁴⁶ However, none of the analyses undertaken on the feasibility of subsidy reform in Ecuador studied the impact, economic or social, on indigenous people. This oversight is despite the fact that protests by indigenous groups have a history of ousting presidents, most recently in 2005.

The crisis only subsided after negotiations between the government and the Indigenous Nations Confederation on October 12-13, mediated by the United Nations and the Catholic Church. On October 14, President Moreno announced the repeal of Decree 883 in a televised address, finally ending ten days of national protests.¹⁴⁷ As a part of the agreement, the government promised to work with indigenous groups to devise a new plan for reforms. In the end, the protests, which lasted until October 13, resulted in 11 deaths, 1,507 injuries that required treatment by public health officials,¹⁴⁸ and a cost of over \$1 billion.¹⁴⁹

4. Analysis

Effective energy subsidy reform depends on a multitude of variables that differ by country. Strategies for implementation and mitigation also depend on local context, demographics, type of commodity, capacity of institutions, and global fuel prices. All these factors highlight that there is no silver bullet for effective reforms, and the list of considerations is likely non-exhaustive. However, based on the case studies presented here, several lessons stand out and may prove helpful for policymakers who are grappling with questions related to the transition from regressive subsidies to progressive redistribution models. In particular, we focus on several measures that appear to be associated with more successful reform efforts from a social lens.

4.1 Six Lessons on Transitioning from Regressive Subsidies to Progressive Redistribution

4.1.1 Subsidy reforms can open fiscal space and be an opportunity for progressive redistribution

Analyses from a range of countries worldwide show that it is possible to use fuel subsidy reform as an opportunity to transition to more progressive or equal distribution systems. While such reforms often result from fiscal strains or conditionalities, governments need to ensure that both immediate and medium or long-term redistribution objectives are met. In fact, fuel subsidy reform can be a social policy. However, the social benefits are not a given. If the reforms are to have social returns, they must be deliberately designed as such. As Lindebjerg et al. explain, "As social projects energy subsidy reforms can provide a triple win; solely as an economic adjustment they might fail."¹⁵⁰ It may be useful to reframe discourse on subsidy reform as a transition from regressive to equal or progressive redistribution systems. Citizens, particularly the poor who need to work each day to pay for their food, are unlikely



to be convinced by long-term economic arguments, no matter how effectively those messages are communicated. It is, in the end, the responsibility of governments, and IFIs supporting them, to ensure the welfare of the poor instead of creating fiscal space at the expense of their welfare.

4.1.2 Timing is critical—price increases should not come before cash-in-hand

There is little disagreement about the need to mitigate the impact of price increases on the poor through some form of redistributive policy. Most analysts even agree on the value of cash transfers. However, one element that is not covered sufficiently is the importance of the timing of the cash transfer. A promise of a future transfer is not sufficient. This is especially true for governments that have lower levels of popular support. It is critical that any cash transfer program is ready and starts on the same day as price increases. This can ensure public confidence that the government can deliver on its promise, but perhaps even more importantly, it will prevent any negative welfare impact on the poor, who are most likely to suffer from the price hikes. In the case of Iran, the timing of transfers was specifically instilled in the reform law and authorized the treasury to temporarily finance the initial cash flow deficit so money could be deposited in advance of price increases.¹⁵¹

4.1.3 Universal programs can help avoid social conflict and build a sense of equity

Subsidy reform can provide an opportunity for a universal cash transfer program. There are two benefits to a universal cash transfer rather than targeted transfers. First, many countries do not have the capacity to quickly develop a database of the poor and transparently target the poorest. Universal transfers reduce the need to develop a targeting mechanism and allow the governments to focus on the transfer logistics instead. Second, universal transfers also create a sense of equality and prevent social consequences. Universal programs will also help garner broader political support, which ultimately tends to result in more popular and sustainable programs. Analysis from Francisco Javier et al. shows that on average, the top quintile captures six times more in subsidies than the bottom quintile. This suggests that a universal transfer, equating to one-third of the total subsidy cost, can double the welfare of the poorest 20% at one-third of the cost of subsidies. Of course, this amount varies in each context. The government of Sudan is currently working to develop a cash transfer scheme to replace its fuel subsidies. The program is designed to reach 80% of the population. This may suggest that universal or near-universal transfers are gaining popularity, particularly for oil-exporting countries where the public sees access to cheap fuel as a right. In such contexts, there is at least one successful example of a universal transfer program, Alaska's Permanent Fund Dividend, which has been in operation since 1982.

4.1.4 If not universal, cash transfers should be broad-based and identify where the shoe pinches

Distributional analyses from the case studies covered in this paper show that the removal of subsidies hurts the poorest, the near-poor, and lower-middle-income households. This means that properly mitigating the impact of subsidy removal requires that the government look beyond only targeting those below the poverty line—as many traditional cash transfer schemes do. Lessons from successful reform attempts suggest that casting a wide net can be an important element of successful reforms. The cash transfer put in place in Jordan to mitigate the impact of their subsidy reform reached 70% of the population. In Indonesia, the government targeted 35% of the population, more than double the number of households living below the poverty line. Similarly, in the Dominican Republic, the Bonogas program reached 40% of the population, covering extreme poor households as well as the moderately poor and the lower-middle-income.

In the Dominican Republic, the government also critically recognized the economic impact of price increases on the livelihoods of public transport drivers—and developed a unique mitigation plan to



support them. While many drivers were also in the lower-middle-income category, the reform would have had a much more severe impact on their livelihoods. In the end, reaching this group of drivers was not only a political deal with transport unions, but also a mechanism to protect the livelihoods of a group who would have lost work due to the impact of subsidy removal, potentially even falling into extreme poverty.

Broad-based transfers may be particularly important in contexts where an underrepresented group is at risk of losing out from subsidies. A poor redistribution plan that fails to recognize the plight of under-recognized groups can jeopardize any reform plans, as was the case in Iran and Ecuador in 2019. In both contexts, the government failed to address redistribution problems among minority groups, further exasperating fault lines in the state-citizen relationship. In the case of Ecuador, the government failed to recognize the impact of subsidy removal on the livelihood of indigenous groups. While the biggest worry for the government was political dissent from transport unions, in the end, it was the indigenous protests that led to the reversal of price increases. Effective mitigation programs must identify where the shoe pinches and target all those at risk of losing out. In all cases, this includes a group much larger than those that fall under the poverty line.

4.1.5 Balance savings from reform between cash transfer and longer-term investments

It is important to balance immediate compensations such as cash transfers with long-term investments to strengthen public welfare. Once social transfers had created an enabling environment for price increases to be maintained, countries such as Indonesia, Ghana, and the Philippines took significant savings from their subsidy reforms to invest in health and education programs. Neither short-term nor long-term interventions are likely to succeed on their own. As was the case in Iran, redirecting all fiscal savings from subsidy reforms to a universal transfer could significantly reduce poverty, but the gains may be lost due to inflation or external economic factors. At the same time, investments in long-term programs may leave the poor to struggle in the immediate term or even cause public protest and stop reforms from succeeding at all—as was the case in Ecuador. Cash transfers can serve as a foundational investment to ensure people can meet their basic needs and are positioned better to take advantage of longer-term human development investments, such as health and education, which may not show immediate returns for poor households. It is likely an easier task to plan savings from subsidy removal more strategically, instead of when governments choose to undertake reforms before they have their back against a wall. However, even in situations where governments are forced into reforms because of economic pressures, such as in the Dominican Republic, there is still an opportunity to strategically implement an immediate cash compensation scheme, and build a long-term vision for improving social services.

4.1.6 Effective reforms require a multi-sectoral effort

The social component of subsidy reform cannot be an afterthought and separate from the core reform. It is critical that all relevant arms of the government, and sectors within agencies supporting them, work together to design the price increases and social benefits simultaneously. Ensuring effective implementation of a cash transfer program also cannot be left to a single social ministry. In Indonesia, the government mobilized ministries of finance, social welfare, communications, and the statistics bureau, working together with the Ministry of Home Affairs and local governments (including village governments) to implement the cash transfer program. The government also leveraged its vast existing network of post offices to reach households in rural and remote areas, allowing it to access the most remote parts of the vast archipelago. In Iran, the government mobilized the treasury and the banking sector, and imported ATMs and distributed them throughout the country to ensure that citizens could access their accounts and withdraw money.



Particularly in contexts where government systems for social transfers are not in place, developing a new system requires a whole-of-government effort and requires close collaboration between the economic and social ministries. This collaboration should also exist in organizations that support governments to design reform packages. Decisions on targeting, size of transfers, and timing should be made based on input from multiple sectors. This will ensure a holistic design that measures multiple considerations simultaneously, including equity, social stability, fiscal space, and operational feasibility. For example, it may not be effective to pre-determine the fiscal space allocated for cash transfers—that determination itself would require input from multiple sectors and weighing of different options.

5. Conclusion

This paper has attempted to show that a close understanding of the recognition and redistribution dimensions of energy subsidy reform can improve the ability of governments to carry out major policy reforms that all too typically fail because of popular opposition. Popular opposition to subsidy reform is not just a matter of incomplete information. Current impact assessments have frequently under-estimated the perceived direct and indirect adverse impacts on poor and near-poor families. Furthermore, overly rigid adherence to what in the end are arbitrary poverty lines produces even more knock-on problems, as if anyone over the poverty line will not also suffer from energy price rises. In many developing countries, the people right above the poverty line live in what the anthropological literature calls "precarity," economically insecure conditions where a sudden rise in energy prices can mean an inability to pay the rent, repossession of the family motorcycle, or the need to skip meals to cover transportation to work. In policy terms, recognizing precarity translates into an argument for broad-banding mitigation programs—expanding eligibility to affected groups beyond the poverty line.

How far above the poverty line is far enough? To some extent, any number will be arbitrary. However, economic analysis can present the financial and demographic scenarios and trade-offs that political leaders can then assess. In the case of Iran cited earlier in this paper, 100% of the economic benefit from subsidy reform ended up going into transfer programs. But most countries will want to do considerably less.

Timing is as important as scope. In many countries, political leaders promise a lot but for one reason or another are unable to deliver. Most mitigation programs proposed for subsidy reform require affected people to bear the pain today for the promise of a transfer that will be delivered tomorrow. It should not come as a big surprise that this trust is often not forthcoming. However, we have tried to show through these case studies that some of the most successful reform programs addressed this lack of trust directly, by providing the cash before or at the same time as the reform. As the saying goes, "in God we trust; all others pay cash."

Broad-banding compensation programs and building government credibility by making payments prior or coterminous with reform will not stop all resistance to reform. However, our case studies already show that there are countries that have tested out these principles with success. While we do not think these findings are a magic bullet, given the scale of potential benefit, the urgency of post-COVID-19 recovery, and the track record of subsidy reform failure using the standard approach, there is great value in exploring these concepts further as both research and practical action.



Endnotes

- 1 "Fossil Fuel Subsidies," International Monetary Fund, available at: <https://www.imf.org/en/Topics/climate-change/energy-subsidies>.
- 2 "Inequality & Exclusion," The Pathfinders for Peaceful, Just and Inclusive Societies, available at: <https://www.sdg16.plus/inequality>.
- 3 Benedict J. Clements and Ian Parry, "Subsidies: Some Work, Others Don't," International Monetary Fund (September 2018), available at: <https://www.imf.org/external/pubs/ft/fandd/2018/09/what-are-subsidies-basics.htm>.
- 4 Ruslan Yemtsov and Amr Moubarak, Assessing the Readiness of Social Safety Nets to Mitigate the Impact of Reform: Energy Subsidy Reform Assessment Framework (ESRAF) Good Practice Note 5. (Washington, D.C.: World Bank, 2018).
- 5 "Energy Subsidies," International Energy Agency (IEA). <https://www.iea.org/topics/energy-subsidies>. (*Note that numbers used in this paper were from 2019 data*).
- 6 "OECD Official Development Assistance (ODA)," OECD, 2020, <https://www.oecd.org/dac/financing-sustainable-development/development-finance-standards/official-development-assistance.htm>.
- 7 Oliver Milman, "Fossil fuel subsidies are a 'disgrace', Greta Thunberg tells US House panel," The Guardian, April 22, 2021. Available at: <https://www.theguardian.com/environment/2021/apr/22/greta-thunberg-house-committee-testimony-fossil-fuel-subsidies>.
- 8 David Coady, Ian Parry, Nghia-Piotr Le, and Baoping Shang, "Global Fossil Fuel Subsidies Remain Large: An Update Based on Country-Level Estimates," (International Monetary Fund, 2019).
- 9 Gabriela Inchauste and David G. Victor, "The Political Economy of Energy Subsidy Reform," (World Bank, 2017).
- 10 Ibid.
- 11 Ibid.
- 12 Paasha Mahdavi, Cesar B. Martinez-Alvarez, and Michael L. Ross, "Why Do Governments Tax or Subsidize Fossil Fuels?" (Center for Global Development, 2020).
- 13 Ibid.
- 14 Robert Bacon and Masami Kojima, "Coping with Higher Oil Prices," (Energy Sector Management Assistance Program, World Bank, 2006).
- 15 Ibid.
- 16 Jordan Kyle Cohen, Essays on the Effects of Political Institutions on Development Policies (Columbia University PhD Dissertation, 2016).
- 17 Francisco Javier Arze de Granado, David Coady, and Robert Gillingham, "The Unequal Benefits of Fuel Subsidies: A Review of Evidence for Developing Countries," World Development 40 no. 11 (2012), 2234-2248.
- 18 United Nations Environment Programme, Energy Subsidies: Lessons Learned in Assessing the Impact and Designing Policy Reforms (2003).
- 19 Ibid.
- 20 Inchauste and Victor, 2017.
- 21 Jun Rentschler and Morgan Bazilian, "Principles for Designing Effective Fossil Fuel Subsidy Reforms," Review of Environmental Economics and Policy 11 no. 1 (2017) 138–155.
- 22 Yemtsov and Moubarak, 2018; Loek Groot and Thijs Oostveen, "Welfare effects of energy subsidy reform in developing countries," Review of Development Economics 23 (2019): 1926–1944.
- 23 Yemtsov and Moubarak, 2018.
- 24 Carlo Sdravovich, Randa Sab, Younes Zouhar, and Giorgia Albertin, Subsidy Reform in the Middle East and North Africa: Recent Progress and Challenges Ahead (Washington D.C.: International Monetary Fund: 2014); Rentschler and Bazilian, 2017.
- 25 Yemtsov and Moubarak, 2018.



- 26 Naba Mohiedeen, “Demonstrators Close Khartoum Bridges to Protest Fuel Price,” Voice of America News, October 29, 2020. Available at: <https://www.voanews.com/africa/demonstrators-close-khartoum-bridges-protest-fuel-price>.
- 27 “Congress organises protests in MP, Rajasthan, Delhi against fuel price hike,” The Hindustan Times, February 20, 2021. Available at: <https://www.hindustantimes.com/india-news/congress-organises-protests-in-mp-rajasthan-delhi-against-fuel-price-hike-101613816521367.html>
- 28 Charles Pensulo, “Protests across Malawi as mobile phone charges soar,” The Guardian, April 22, 2021. Available at: <https://www.theguardian.com/global-development/2021/apr/22/protests-across-malawi-as-mobile-phone-charges-soar>.
- 29 “Brazilian President Jair Bolsonaro to oust Petrobras CEO over fuel price hikes,” Reuters/CNBC, February 19, 2021. Available at: <https://www.cnbc.com/2021/02/20/brazils-jair-bolsonaro-to-oust-petrobras-ceo-over-fuel-price-hikes.html>
- 30 Robert Bacon and Masami Kojima, “Phasing Out Subsidies: Recent Experiences with Fuel in Developing Countries,” World Bank Public Policy Journal (2006).
- 31 For a useful examination around the supply and demand of subsidies, see David Victor, “The Politics of Fossil Fuel Subsidies,” International Institute for Sustainable Development, (2009) available at: https://www.iisd.org/gsi/sites/default/files/politics_ffs.pdf.
- 32 Groot and Oostveen, 2019.
- 33 Asian Development Bank. Fossil Fuel Subsidies in Asia: Trends, Impacts, and Reforms (Manila: Asian Development Bank, 2016).
- 34 Hamid Tabatabai, “The Basic Income Road to Reforming Iran’s Price Subsidies,” Basic Income Studies 6 no. 1 (2011). Mostafavi-Dehzoeei and Salehi-Isfahani, 2017.
- 35 Vagliasindi, Maria, “Implementing Energy Subsidy Reforms, Evidence from Developing Countries,” World Bank, 2013, <http://hdl.handle.net/10986/11965>; Kojima, Masami. “Energy, Economic Growth, and Poverty Reduction: A Literature Review,” The World Bank, 2016, https://www.researchgate.net/publication/301700793_Energy_Economic_Growth_and_Poverty_Reduction_A_Literature_Review; Inchauste and Victor, 2017.
- 36 Data Sources: Clements et al., 2013; Kojima, 2016; Inchauste and Victor, 2017; NYU CIC elaboration; “Successful reform” is defined as one that is sufficiently large to impact household welfare and leads to either a permanent and sustained reduction of subsidies (full success) or leads to reduction of subsidies for at least three years but where subsidies have not been fully removed or have been partially reestablished (partial success). “Significant protest” is defined as mass protest activity that took place in at least two cities for at least one week. Cases of energy subsidy reform included in the figure and the year they were launched: Poland, coal subsidy, 1990; Chile, fuel subsidy, 1991; Brazil, electricity subsidy, 1993; Kenya, electricity subsidy, 1995; Brazil, fuel subsidy, 1996; Namibia, fuel subsidy, 1997; Indonesia, fuel subsidy, 1997; Philippines, fuel subsidy, 1998; Poland, coal subsidy, 1998; Turkey, fuel subsidy, 1998; Armenia, electricity subsidy, 1999; Uganda, electricity subsidy, 1999; Mexico, electricity subsidy, 1999; Brazil, fuel subsidy, 2001; Philippines, electricity subsidy, 2001; Mexico, electricity subsidy, 2001; Ghana, fuel subsidy, 2003; Indonesia, fuel subsidy, 2003; Ghana, fuel subsidy, 2005; Indonesia, fuel subsidy, 2005; Chile, fuel subsidy, 2005; Yemen, fuel subsidy, 2005; Indonesia, fuel subsidy, 2008; Namibia, fuel subsidy, 2008; Mauritania, fuel subsidy, 2008; Iran, fuel subsidy, 2010; Yemen, fuel subsidy, 2010; Peru, fuel subsidy, 2010; Niger, fuel subsidy, 2011; Nigeria, fuel subsidy, 2011; Mauritania, fuel subsidy, 2012.
- 37 Christopher Beaton and Lucky Lontoh, Lessons Learned from Indonesia’s Attempts to Reform Fossil-Fuel Subsidies (Winnipeg, Manitoba: International Institute for Sustainable Development, 2010).
- 38 Ibid.
- 39 Strand, J., “Political Economy Aspects of Fuel Subsidies: A Conceptual Framework,” Policy Research Working Paper 6392, World Bank, 2013, <http://hdl.handle.net/10986/13190>; Vatikiotis, M. R., Indonesian Politics Under Suharto: The Rise and Fall of the New Order (London: Routledge, 1998).
- 40 Inchauste and Victor, 2017.
- 41 World Bank, Spending for Development: Indonesia Public Expenditure Review (Washington D.C.: World Bank, 2007).
- 42 Ibid; USD estimate based on IMF Exchange Rate Archives USD1=IDR9,714
- 43 Bacon and Kojima, Coping with Higher Oil Prices, 2006.
- 44 Eirik S. Lindebjerg, Wei Peng, and Stephen Yeboah, Do policies for phasing out fossil fuel subsidies deliver what they promise? Social gains and repercussions in Iran, Indonesia and Ghana. (Geneva: United Nations Research Institute for Social Development, 2015); Inchauste and Victor, 2017.



- 45 Lindebjerg, Peng, and Yeboah, 2015.
- 46 World Bank, “BLT Temporary Unconditional Cash Transfer: Social Assistance Program and Public Expenditure Review 2,” (2012).
- 47 Ibid.
- 48 Muliadi Widjaja, “An Economic and Social Review on Indonesian Direct Cash Transfer Program to Poor Families in 2005,” *Ekonomi dan Keuangan Indonesia* (January 2009).
- 49 Beaton and Lontoh, 2010.
- 50 Bacon & Kojima, “Phasing Out Subsidies,” 2006.
- 51 World Bank, “BLT Temporary Unconditional Cash Transfer,” 2012.
- 52 Yemtsov and Moubarak, 2018.
- 53 “Ecuador falls into chaos after the president cuts fuel subsidies,” *The Economist*, October 10, 2019. Available at: <https://www.economist.com/the-americas/2019/10/10/ecuador-falls-into-chaos-after-the-president-cuts-fuel-subsidies>; World Bank, “BLT Temporary Unconditional Cash Transfer,” 2012.
- 54 Ibid.
- 55 Beaton and Lontoh, 2010; ASEAN, 2012.
- 56 Lindebjerg, Peng, and Yeboah, 2015.
- 57 World Bank, “Targeting: Poor and Vulnerable Households in Indonesia,” (2012).
- 58 “World Bank, “BLT Temporary Unconditional Cash Transfer,” 2012.
- 59 Beaton and Lontoh, 2010; Widjaja, 2009; Inchauste and Victor, 2017.
- 60 Bacon & Kojima, “Coping with Higher Oil Prices,” 2006.
- 61 Lindebjerg, Peng, and Yeboah, 2015.
- 62 Bacon & Kojima, “Phasing Out Subsidies,” 2006.
- 63 Beaton & Lontoh, 2010.
- 64 World Bank, “Targeting,” 2012.
- 65 Lindebjerg, Peng, and Yeboah, 2015; Inchauste and Victor, 2017.
- 66 ASEAN, 2012.
- 67 Inchauste and Victor, 2017.
- 68 Lindebjerg, Peng, and Yeboah, 2015.
- 69 Beaton and Lontoh, 2010.
- 70 Inchauste and Victor, 2017.
- 71 Beaton and Lontoh, 2010.
- 72 Siauw Tiong Djin, “Looking back to May 1998, 20 years forward,” *The Jakarta Post*, May 25, 2018. Available at: <https://www.thejakartapost.com/academia/2018/05/25/looking-back-to-may-1998-20-years-forward.html>.
- 73 Beaton and Lontoh, 2010.
- 74 Bacon & Kojima, “Phasing Out Subsidies,” 2006.
- 75 Ibid.
- 76 Beaton and Lontoh, 2010.
- 77 Inchauste and Victor, 2017.
- 78 Priscilla Atansah, Masoomah Khandan, Todd Moss, Anit Mukherjee, and Jennifer Richmond. *When Do Subsidy Reforms Stick? Lessons from Iran, Nigeria, and India*. (Washington D.C.: Center for Global Development, 2017).
- 79 Tabatabai, 2011.



- 80 Djavad Salehi-Isfahani, Djavad. "Iran: Subsidy Reform Amid Regional Turmoil," Brookings , March 3, 2011.
- 81 Ibid.
- 82 Although as a net oil exporter, Iran's fuel subsidies are an indirect subsidy, which means they do not appear as a cost on the national budget, but rather represent lost export income.
- 83 "Pump Prices for Gasoline in Iran (1998, 2000, 2002, 2004, 2006, 2008, 2010, 2012, 2014, 2016)," *World Bank, German Agency for International Cooperation*, <https://data.worldbank.org>.
- 84 Djavad Salehi-Isfahani, Bryce Wilson Stucki, and Joshua Deutschmann, "The Reform of Energy Subsidies in Iran: The Role of Cash Transfers," *Emerging Markets Finance & Trade* 51 (2015), 1144-1162.
- 85 Targeted Subsidies Act (Article 7), Government of Islamic Republic of Iran.
- 86 World Bank, "Interim Assistance Strategy for the Islamic Republic of Iran," (2001).
- 87 Salehi-Isfahani, Stucki, and Deutschmann, 2015.
- 88 Mostafavi-Dehzoee and Salehi-Isfahani, 2017.
- 89 Djavad Salehi-Isfahani, "Energy Subsidy Reform in Iran," in Ishac Diwan and Ahmed Galal, *The Middle East Economies in Times of Transition*. (London: Palgrave Macmillan, 2016).
- 90 Tabatabai, 2011.
- 91 Salehi-Isfahani, "Iran: Subsidy Reform Amid Regional Turmoil," 2011.
- 92 Ibid.
- 93 Ibid.
- 94 Dominique Guillaume, Roman Zyteck, and Mohammed Reza Farzin, *Iran—The Chronicles of the Subsidy Reform* (Washington D.C.: International Monetary Fund, 2011).
- 95 Ibid.
- 96 Tabatabai, 2011.
- 97 Salehi-Isfahani, Stucki, and Deutschmann, 2015.
- 98 Ibid.
- 99 Tabatabai, 2011.
- 100 Salehi-Isfahani, Stucki, and Deutschmann, 2015.
- 101 World Bank, "Interim Assistance Strategy for the Islamic Republic of Iran," 2001.
- 102 Tabatabai, 2011.
- 103 Ibid.
- 104 Elham Hassanzadeh, Elham. "Recent Developments in Iran's Energy Subsidy Reforms," *Global Studies Initiative, The International Institute for Sustainable Development*, (2012).
- 105 Salehi-Isfahani, Stucki, and Deutschmann, 2015.
- 106 Tabatabai, 2011.
- 107 Atansah, Khandan, Moss, Mukherjee, and Richmond, 2017; Guillaume, Zyteck, and Farzin, 2011; Salehi-Isfahani, "Iran: Subsidy Reform Amid Regional Turmoil," 2011; Hassanzadeh, 2012; .Tabatabai, 2011.
- 108 Salehi-Isfahani, Stucki, and Deutschmann, 2015.
- 109 Ibid.
- 110 Salehi-Isfahani, "Iran: Subsidy Reform Amid Regional Turmoil," 2011.
- 111 Mahmood Messkoub, "Cash transfer as a social policy instrument or a tool of adjustment policy: from indirect subsidies (to energy and utilities) to cash subsidies in Iran, 2010–17," in Rana Jawad, Nicola Jones, and Mahmood Messkoub, *Social policy in the Middle East and North Africa*. (Cheltenham: Elgar, 2019); Salehi-Isfahani, "Energy Subsidy Reform in Iran," 2016.



112 “Iran says 230 killed in November protests after petrol price hike,” Al-Jazeera, June 1, 2020. Available at: <https://www.aljazeera.com/news/2020/6/1/iran-says-230-killed-in-november-protests-after-petrol-price-hike>.

113 Djavad Salehi-Isfahani, “Iran’s gasoline price hike misses lesson from Iran’s own experience,” personal blog, November 17, 2019. Available at: <https://djavadsalehi.com/2019/11/17/irans-gasoline-price-hike-misses-lesson-from-irans-own-experience/>.

114 Parisa Hafezi, “Iran’s protests against gasoline price hike turn political: media,” Reuters, November 16, 2019. Available at: <https://www.reuters.com/article/us-iran-fuel-protests-idUSKBN1XQ0CK>.

115 Patrick Wintour, “Iran begins payments to 60 million as petrol price protests continue,” The Guardian, November 18, 2019. Available at: <https://www.theguardian.com/world/2019/nov/18/iran-begins-payments-to-60-million-as-petrol-price-protests-continue>.

116 “Jahangiri: the problem of the people of Mahshahr is livelihoods,” Islamic Republic News Agency, January 30, 2021, <https://www.irna.ir/news/84203962/>

117 Guillermo Beylis and Barbara Cunha, Energy Pricing Policies for Inclusive Growth in Latin America and the Caribbean. (Washington D.C.: World Bank, 2017).

118 Ibid.

119 Inchauste and Victor, 2017.

120 Beylis and Cunha, 2017.

121 Inchauste and Victor, 2017.

122 Ibid.

123 Ibid.

124 Ibid.

125 Ibid.

126 Ibid.

127 Beylis and Cunha, 2017.

128 Inchauste and Victor, 2017.

129 Vagliasindi, 2012.

130 Inchauste and Victor, 2017.

131 Sebastián Espinoza Echeverría and Verónica Guayanlema, Balance y proyecciones del sistema de subsidios energéticos en Ecuador (Quito: Friedrich Ebert Stiftung, 2017).

132 The Economist, October 10, 2019.

133 Filip Schaffitzel, Michael Jakob, Rafael Soria, Adrien Vogt-Schilb, and Hauke Ward, “Can government transfers make energy subsidy reform socially acceptable? A case study on Ecuador,” Inter-American Development Bank, 2019.

134 IMF Executive Board Approves US\$4.2 Billion Extended Fund Facility for Ecuador,” International Monetary Fund, March 11, 2019. Available at: <https://www.imf.org/en/News/Articles/2019/03/11/ecuador-pr1972-imf-executive-board-approves-eff-for-ecuador>.

135 Gideon Long, “Ecuador ends fuel subsidies to keep \$4.2bn IMF programme on track,” The Financial Times, October 2, 2019. Available at: <https://www.ft.com/content/69bed0ce-e52b-11e9-9743-db5a370481bc>.

136 Schaffitzel, Jakob, Soria, Vogt-Schilb, & Ward, 2019.

137 H. Xavier Jara, Po Chun Lee, Lourdes Montesdeoca, and Marcelo Varela, “Fuel subsidies and income redistribution in Ecuador,” UNU-WIDER, 2018.

138 The Economist, October 10, 2019..

139 The World Bank, “Project Appraisal Document on a Proposed Loan in the Amount of US\$350 Million to



- the Republic of Ecuador for a Social Safety Net Project,” March 13, 2019. Available at: <http://documents1.worldbank.org/curated/en/485571554602436973/pdf/Ecuador-Social-Safety-Net-Project.pdf>.
- 140 “Ecuador declares state of emergency as protesters decry end to fuel subsidies,” Reuters/The Guardian, October 3, 2019. Available at: <https://www.theguardian.com/world/2019/oct/03/ecuador-state-of-emergency-fuel-subsidies-protest>.
- 141 Ibid.
- 142 Kimberley Brown, “Ecuador’s indigenous people are leading the anti-government protests. They have a record of ousting presidents,” The Washington Post, October 10, 2019. Available at: https://www.washingtonpost.com/world/the_americas/ecuadors-indigenous-people-are-leading-the-nations-anti-government-protests-they-have-a-record-of-ousting-presidents/2019/10/10/ab9d7f1e-eea2-11e9-a329-7378fbfa1b63_story.html.
- 143 “Ecuador indigenous groups, workers continue fuel protests,” Al-Jazeera, October 5, 2019. Available at: <https://www.aljazeera.com/economy/2019/10/5/ecuador-indigenous-groups-workers-continue-fuel-protests>.
- 144 Alexandra Valencia, “Ecuador’s Moreno scraps fuel subsidy cuts in big win for indigenous groups,” Reuters, October 14, 2019. Available at: <https://www.reuters.com/article/us-ecuador-protests-idUSKBN1WT265>.
- 145 Brown, 2019.
- 146 Franziska Funke and Laura Merrill, “How Reforming Fossil Fuel Subsidies Can Go Wrong: A lesson from Ecuador,” Global Subsidies Initiative, October 24, 2019. Available at: <https://www.iisd.org/gsi/subsidy-watch-blog/how-reforming-fossil-fuel-subsidies-can-go-wrong-lesson-ecuador>.
- 147 Francesco Manetto, “Lenín Moreno deroga los ajustes económicos y los indígenas levantan las protestas en Ecuador,” El País, Oct 13, 2019. Available at: https://elpais.com/internacional/2019/10/14/america/1571017066_691583.html.
- 148 “Ecuador: Lessons from the 2019 Protests,” Human Rights Watch, April 6, 2020. Available at: <https://www.hrw.org/news/2020/04/06/ecuador-lessons-2019-protests>.
- 149 Brown, 2019.
- 150 Lindebjerg, Peng, and Yeboah, 2015.
- 151 Ozgur Demirkol, Robert Blotevogel, Roman Zytek, Paul Zimand, and Yi Liu, “Islamic Republic of Iran Selected Issues Paper,” International Monetary Fund, 2014.