IZA

POLICY PAPER SERIES

IZA Policy Paper No. 52

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Simon Commander

December 2012

Forschungsinstitut
zur Zukunft der Arbeit
Institute for the Study
of Labor

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Simon Commander
Altura Partners, EBRD,
IE Business School and IZA

Policy Paper No. 52
December 2012

IZA

P.O. Box 7240
53072 Bonn
Germany

Phone: +49-228-3894-0
Fax: +49-228-3894-180
E-mail: iza@iza.org

IZA Policy Paper No. 52
December 2012

ABSTRACT

A Guide to the Political Economy of Reforming Energy Subsidies*

Energy subsidies are used widely. Although adverse from an efficiency perspective, subsidies confer private benefits on particular groups and, once introduced, tend to be persistent. This paper examines the reasons why and possible ways of overcoming the barriers to reform. The starting point is to look at the motives lying behind the adoption of energy subsidies. Distributional motives were found to figure prominently while the role of interested parties or lobbies is also common. The paper then looks at the characteristics of countries that use energy subsidies. Countries with weak institutions – often non-democracies – tend to be associated with higher subsidies. The paper then looks at how country level conditions and constraints can be identified. An analytical-cum-policy framework allowing identification of the key constraints is proposed before turning to the types of policies – contingent on institutional capacity – that can address those constraints, such as compensating transfers. The paper also indicates how a better understanding of citizens' policy preferences and the trade-offs that are likely to be accepted is essential for designing reform.

JEL Classification: H20, H23, J65, J68

Keywords: political economy, energy, subsidies, transfers

Corresponding author:

Simon Commander
EBRD
One Exchange Square
London EC2A 2JN
United Kingdom
E-mail: commanders@ebrd.com

* Thanks to Ruslan Yemtsov, Lucian Pop and Sabine Beddies for discussion and comments. Many thanks also to Chiara Amini and Zlatko Nikoloski for help. Harold Alderman, Phil Keefer and Tara Viswanath gave useful written comments on an earlier draft. Abdallah Dardari, Joly Dixon and Bassel Kaghadou provided very helpful suggestions and comments.

1. Introduction

A wide array of countries now uses energy subsidies[1]. At a global level, subsidies to both consumers and producers amounted to $700 billion in 2008, equivalent to around 1% of global GDP[2]. In particular regions - notably the Middle East and Maghreb - energy subsidies are pervasive and large. Periods of high and rising prices for fuels – as presently – have also tended to lead to the introduction or increase of energy subsidies across a broad spectrum of regions and political systems.

The motives for using subsidies range from temporary income buffering to rent capture and/or explicit attempts at sharing national natural resource wealth. A common justification has been that subsidies can reduce poverty and enhance access to energy among lower income households, particularly in rural areas. However, measurement of subsidies is often difficult as they may be channelled through a variety of channels including, but not limited to, direct cash transfers, tax reductions and exemptions, price caps, as well as limits on market access and cross-subsidies to consumers[3]. These different channels can, in turn, affect the transparency of the subsidy and the political dynamics associated with revising or eliminating a subsidy. This paper is concerned largely with the group of consumption subsidies, although it is also the case that producers can benefit from subsidies that promote domestic exploration, extraction or refining[4].

One of the principal reasons for why energy subsidies have become a major public policy issue is because of their cost. In particular, subsidies have often contributed to levels of fiscal deficits that are difficult to sustain. Even if there is a broad consensus that the consequences of energy subsidies – fiscal, allocative, distributional and environmental – are mostly adverse, this has apparently little affected their deployment, even if the scale and incidence differ widely across country, region and energy source[5]. A further feature of

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[1] Nikoloski (2011) is a companion paper containing detailed country narratives on energy subsidies and policy.
[2] See G20 Report (2010). Consumer subsidies accounted for roughly 80% of total subsidies. Note that this excludes subsidies to non-fossil fuel energy sources and does not account for taxes on energy users. Subsidies fell back to around $420 billion in 2009, see also GSI (2011).
[3] World Bank (2010) has a detailed discussion of the measurement of subsidies.
[4] GSI (2011) lists the types of producer subsidies.
[5] Subsidies are not limited to price interventions but are often delivered through a wide range of channels. Thus, non-collection of bills and outright theft can be significant. For example, data for some African countries has shown that these accounted for over 50% of total hidden costs in the power sector.

energy subsidies is that once introduced they tend to be difficult to roll back and hence become persistent[6].

This paper meshes together an analytical and empirical approach with a strong policy focus. It draws on a wide range of country examples to help understand not only why energy subsidies have arisen and are implemented but also why they persist and are seemingly so resistant to reform. The paper has the specific objective of being useful for those involved in the reform of energy subsidies. As such, it starts from the assumption that energy subsidies can best be understood through a political economy perspective where political institutions and, sometimes, systems not only affect the choice of the particular policy instrument but also affect the feasibility of reform or subsequent changes to policy. Because of this focus, as well as the large variation in motivation and implementation of energy subsidies across country, no attempt is made to model explicitly any of these regimes or institutional configurations. What is done instead is to build up a set of possible motivations for subsidy use and retention using a wide range of information on countries, institutions and other economic data. Once a simple typology has been established, the paper then turns to how the reform of energy subsidies can be orchestrated and implemented in these multiple settings given their associated constraints. As will become clear, different institutional settings and constraints can motivate very different paths to reform.

2. Regional profile of energy subsidies

Figure 1 shows the evolution of two benchmark energy prices – oil and gas - over the last decade. Energy prices have clearly been volatile and there has been strong upward drift, even if both price levels presently stand below their 2008 peak. Periods of price acceleration have widely seen the adoption or extension of subsidies to consumers, sometimes in direct response to political unrest or protest. For example, in Asia between 2008 and 2010 over half of countries have passed on less than 75% of the increase in international prices for petrol and diesel to consumers. In short, the cost of energy subsidies – particularly fuel – has assumed very substantial proportions, posing a significant fiscal risk. For large oil importers, the burden can be particularly severe. In the case of India – which imports over 70% of its

[6] Note that the emphasis in this paper is on transfers that support energy consumption primarily through pricing. The paper is also focused primarily on the political economy of subsidies, not on their measurement.

total fuel needs - maintaining diesel and petrol prices at 20-35% below international prices in 2011 implied a total fuel subsidy bill of around 10% of GDP. In the Middle East, an energy importing country like Jordan had its fiscal deficit increase by over 1% of GDP in 2011 as a result of increased energy subsidies[7].

A sense of how widespread energy subsidies have become is given in *Figure 2* which uses consistent IEA data for subsidies on oil, gas, coal and electricity for 36 countries grouped in regions. The cost of energy subsidies is expressed as a share of GDP for the period 2007-2009[8]. Although the IEA sample is biased toward natural resource economies (16 out of 35 fit this categorisation) it still provides a good sense of the scale and regional distribution. There is not only much variation across, but also within, regions, as well as across energy type. The IEA data can be complemented by that collated by the IMF which includes 169 countries for the period from 2002-2008 with coverage for three types of fuel – petrol, diesel and kerosene. The subsidy rate for each is calculated by relating domestic end-of-period prices converted into US dollars to international spot prices. A crude measure of the total subsidy on these products relative to GDP has also been calculated using quantity data from the IEA[9].

Two regions stand out for their relatively high exposure to energy subsidies using the IEA dataset for 2007-2009 – Europe and Central Asia and the Middle East and Maghreb. In the latter grouping, Egypt, Saudi Arabia and Syria had subsidies of between 8-13% of GDP, while in Iran they exceeded 20% by 2009. For the region as a whole, the average subsidy approached 10% of GDP. In Europe and Central Asia, subsidies have been centred mainly on gas and concentrated in two countries; Turkmenistan and Uzbekistan. Other economies of the region in the sample, including Russia and Ukraine, have run subsidies at far lower levels, in the range of 2 - 5% of GDP. The data also suggest that there is a strong association between a country having energy resources and the presence of subsidies. While this is to some extent resource specific, producing oil is also positively correlated with subsidies for other types of energy, suggesting a wider pathology. However, a significant

[7] See IMF, Regional Economic Outlook, April, 2011
[8] IEA 2009 provides detailed information on measurement.
[9] The estimate is very approximate insofar as annual consumption data with end-of period prices are used.

number of countries that run large energy subsidies actually have small or non-existent energy resources.

Energy subsidies - as measured by the IMF dataset - show a similar picture for the longer period from 2002-2008. In the case of diesel and kerosene, 35-36/169 countries had domestic prices below border prices over the period, with 17 countries having petrol below border prices. The Middle East and North Africa stands out for its relatively low diesel and kerosene price ratios. For the latter, we also find that prices in much of Asia have been lower than border prices. Annual observations also indicate significant variation across years. *Figure 3* uses the very approximate fuel subsidies to GDP ratio that have been calculated. There is significant regional variation with the Middle East again having clearly the largest exposure to subsidies. There is also significant variation within these regional groups. For example, countries such as Iran and Iraq have spent between 10-15% of GDP over the period on these three fuels, while Egypt, Libya, Syria and Yemen have spent between 4-5%.[10].

In terms of spending per head of population, the regional picture looks rather different. In the IEA dataset, spending per capita in the Middle East and North Africa is far larger than spending in the other regions. In Europe and Central Asia spending is particularly high on gas, while in the Middle East subsidies are significant for all sources bar coal. In the case of the IMF data that region is again the largest with notably high per capita spending on kerosene. However, spending per capita on diesel and gasoline in Europe and Latin America is also substantial. Finally, when considered in terms of the level of spending, between 2007 and 2009 Chinese and Indian energy subsidies amounted to $27-$29 billion, respectively. Although small as a share of GDP, this level of subsidy spending was a third higher than Egypt but roughly 30% below the Saudi Arabian level.

Although consistent time series data are not available post-2009, subsidies appear to have increased again after 2010/2011 as oil prices, in particular, shifted upwards. For example, in Egypt the cost of fuel subsidies increased by over 30% since 2009[11], while more

[10] Comparing the information for the overlapping years (2007-2008) for countries present in both datasets, the subsidy/GDP measures are highly correlated For example, the correlation using the broadest measure of subsidies for each dataset was 0.5, while using just oil and oil products, the correlation was >0.7.

[11] By 2011 fuel subsidies in Egypt accounted for around 8/9% of GDP with food subsidies accounting for a further 2%. As noted by the 'Economist' (June 25, 2011, pp62-64) subsidy spending was around three times higher than budgetary spending on education.

generally in the Middle East, political upheaval has led incumbent governments – such as in Jordan, Oman, Syria and Saudi Arabia – to raise fuel subsidies and other transfer programmes, not least in the hope of dampening or averting political discontent. More widely, developing country governments have tended to slow the rate of increase in energy prices, deepen existing subsidy programmes or vary rates of energy or fuel taxation. In Chile, for example, the government in 2010 agreed to vary fuel taxes, upward and downward, in response to fuel price movements that cross a particular (and relatively high) threshold. Other countries have attempted (mostly with limited success) to place energy price setting or regulation at a distance from government in, for example, independent authorities[12].

Finally, recent price volatility has renewed calls for deepening programmes of social protection. One historical reference has been European experience after 1945 where governments provided more social insurance to citizens as a way of dealing with the enhanced risk and volatility associated with greater economic openness and integration[13].

3. Motivation, instruments and persistence

Despite the prevalence of subsidies in many countries, the reasons for their use vary across country and region. The main motivations include, but are not limited to, the following (noting that these are not necessarily exclusive);

1. **Income buffering:** in the face of price shocks, including of an external nature and particularly when the rate of change in energy prices is large and rapid. Experience shows that energy subsidies initiated as notionally temporary income buffers have commonly become more permanent and difficult to reform or eliminate.
2. **Lobbying:** Principal-agent interactions whereby lobbies – including particular industries or companies - succeed in securing specific benefits, such as reduced energy costs. Special or vested interests may be able to carve out transfers or rents for themselves – thereby concentrating benefits - through lobbying but where the

[12] For example, a National Petroleum Agency was set up in Ghana that was intended to be politically independent and responsible for administering energy prices. The election cycle subsequently trumped this notional independence. In Jordan, petroleum product prices are adjusted using a clear formula on a monthly basis by a committee of representatives from different Ministries as well as the refinery company; see Nikoloski (2011)

[13] Rodrik (1998)

costs of those transfers diffuse through the general population[14]. Even with competitive politics which allows more policy competition, the presence of multiple agency and/or common agency, alongside incomplete monitoring, can create space for special interests. Non-democratic regimes also tend to operate by rewarding supporters, commonly through devolving control over economic rents to particular, privileged groups. In large federal countries, such as India, the devolution of decision-making has facilitated the creation of regional or local lobbies as well as determining the locus of bargaining[15]. Policy competition between federal and sub-federal agencies has also tended to result[16].

3. **National patrimony:** Allocating revenue flows from natural resources, such as oil or gas, as a national patrimony to be shared – mostly asymmetrically - among the population[17]. In a number of non-democracies, this has appeared as some sort of income trade-off for political and other liberties and has sometimes been represented as a component of a broader social compact[18].
4. **Component of industrial policy:** Using energy pricing as a component of industrial policy aimed at supporting production in selected sectors or firms deemed to have dynamic advantage or to have favoured status due to connections or other factors.
5. **Supporting external competitiveness:** Increasing or supporting the export orientation of an economy and the competitiveness of export-oriented firms through the under-pricing of energy inputs, a strategy that has been widely pursued in East Asia including China.
6. **Diversifying energy supply:** Increasing diversity in energy supply through subsidies to specific energy sources, such as Thailand's subsidies to gas prices and diesel with bio-fuel content aimed at reducing its dependence on fossil-fuel imports.

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[14] An argument propagated by Olson (1965) among others
[15] See Dansie et al (2010)
[16] In India, the federal government influences the price of fuels by capping prices for key products. Price increases – as in 2011 – have often been accompanied by reductions in taxes and duties. However, the federal government cannot force state governments to comply, resulting in widely different state-level tax rates.
[17] Perhaps the most extreme case is Saudi Arabia where petrol is priced lower than bottled water and where fossil-fuel subsidies account for around 10% of GDP.
[18] As argued for Russia and China in Dansie et al (2010)

7. **Transfers to the poor:** Providing income support to poorer households and/or regions and/or raising access to energy for poorer households. These are pervasive motivations although the evidence shows that with fuel subsidies, the bottom four deciles of the income distribution receive on average no more than 15-20% of the total value of those subsidies; testimony to their highly regressive nature[19].

Table 1 uses evidence from detailed country cases to identify the main motivations behind the use of energy subsidies[20]. Clearly, this is not straightforward, as a multiplicity of objectives may be present and these may also have changed over time. Despite these caveats, it can be seen that poverty and/or equity considerations, as well as the effect of lobbies or vested interests, dominate. A significant number of countries have also used energy subsidies as a component of industrial policy.

Table 2 indicates the ways in which energy subsidies tend to be implemented for both producer and consumer subsidies. In the former case, the table shows several modalities being applied, while in the case of consumer subsidies, a price wedge remains the dominant mechanism although use of tax instruments is also quite common.

Finally, the evidence shows that whatever the motivation and form of delivery, energy subsidies tend to be persistent once introduced. Using the IMF dataset which contains annual observations between 2002 and 2008, in the case of diesel nearly 40% of countries that operated a subsidy in at least one year had subsidies in place for four or more of those years[21]. The share was similar for gasoline while in the case of kerosene it was around 60%.

4. Institutions and capacity

Behind the various motivations discussed above lie other potential conditioning factors. One possible explanation for the use of energy subsidies might be institutional. Governments have recourse to subsidies because they lack other effective levers and/or institutional capacity with which to implement policy. For example, a large number of developing countries have limited bureaucratic capacity and ability to monitor the formal sector that results in a relatively low share of fiscal revenues being raised from income and profit taxes.

[19] World Bank, Independent Evaluation Group, 2009
[20] This draws on the country narratives presented in Nikoloski (2011).
[21] For diesel, 17% of countries actually had energy subsidies for either the whole period or for 6 out of 7 years.

To explore this broad conjecture, it can be observed whether there is any association between measures of institutions and the use of energy subsidies. Several widely used datasets are available that measure institutional factors. For example, using the data collected by ICRG for a number of indicators - bureaucratic quality, corruption, democratic accountability, as well as law and order – where a lower rating implies higher risk - all four measures are found to be negatively associated with subsidies to GDP, with the correlation being larger for the bureaucratic quality and corruption variables. This association between weak institutions and subsidies, when disaggregated by energy type, appears particularly strong for oil. Another set of indicators collected by Kaufmann also measures institutional quality across a number of dimensions. Again, there is a clear, negative association between subsidies to GDP and a measure of government effectiveness, rule of law, regulatory quality and freedom from corruption[22]. A composite indicator of institutional quality also indicates a strong negative correlation (see *Figures 4 and 5)*[23]. In short, these unconditional associations suggest that subsidies are associated with weaker institutions or, at least, these measures of institutions.

Institutional frailty, in turns, appears to be associated with the type of political system in a country. A simple association between the measure of institutional quality and a measure of the political regime indicates that more competitive or democratic regimes tend to score better institutionally and this association mostly holds at a regional level (see *Figure 6)*[24]. Indeed, a large literature has long suggested that authoritarian governments provide fewer public goods. This, of course, also makes changing policy problematic – for example, in response to exogenous shocks, such as an energy price increase. Absent workable mechanisms for dialogue and resolution, commonly combined with weak institutions, non-democratic regimes have tended to introduce or extend universal energy subsidies, sometimes irrespective of the fiscal and other consequences.

An associated conjecture relates to the fact that non-democratic polities tend also to be those with high inequality in both income and wealth distributions. To lower risks of upheaval or social turmoil, such governments may choose to often citizens some element of

[22] The correlations are in the range of -0.3/0.35.
[23] The measure is put together using principal components.
[24] The measure of political systems that is used is Polity IV where the scoring ranges from -10 (full autocracy) to +10 full democracy. Saudi Arabia is scored as -10; while the UK is scored at +10.

redistribution. Redistributive policies – such as higher taxes on the better off - are not generally credible or are subject to reversal, meaning that autocratic governments have to work out how to make a more credible commitment to income redistribution[25]. One way is for the government to commit to some form of income (not asset) transfers to the rest of the population. Some circumstantial evidence from focus groups or other qualitative interviews in countries with non-democratic regimes has suggested that energy subsidies are viewed by citizens as at least providing a tangible – and hence credible - transfer to the population[26]. This is one element of the wider paradox of non-democratic regimes – as they do not necessarily know with any precision those in the general population who do or do not support them - they have a tendency to rely on general programmes of transfers or income support, even if such programmes are highly inefficient.[27]

In sum, the difficulty - and sometimes inability – to resolve the latent disputes/distributional conflicts that arise when faced with an external shock, such as an energy price change, can combine with the wider presence of frail institutions to result in governments relying on policy instruments such as energy subsidies[28].

5. Accounting for persistence in energy subsidies

Once adopted energy subsidies persist and have widely been proven to be hard to reform[29]. This simple characterisation appears to hold irrespective of the political system under which subsidies are dispensed although, there are both theoretical and practical reasons for why autocracies may find reform more difficult. There are few examples of countries successfully and sustainably introducing significant reforms or eliminating subsidies. Rather, country narratives are littered with examples of piecemeal, often reversed, attempts at reform. The reasons behind this are complex and obviously contain many country specifics, but some general features also stand out. While loss of economic rents by affected parties – whether companies, individuals or households - may be a significant factor in determining opposition

[25] See Acemoglu and Robinson (2000)
[26] Examples come from Morocco and Egypt.
[27] It has been argued that subsidies may crowd out social spending and result in an inefficient allocation of public spending. This conjecture is difficult to test given inadequacies in the measurement of social spending in most developing countries.
[28] In a wider context, see Rodrik (2007) and also Acemoglu and Robinson (2006)
[29] See Nikoloski (2011).

to reform, a political dimension may also be important, for example, when reform is likely to induce a shift in the distribution of political power. That sort of shift may occur simply by reducing the scope for politicians and/or political parties to hand out rents, or it may affect the ability of recipients to fund political parties that in turn provide them with preferential treatment[30]. However complex, the appropriate focus for analysis will be of a comparative institutional nature, looking in particular at how these constraints affect the way in which the key players interact and the associated outcomes. This is indeed the approach that will be taken in Section 6 below. Before that, this section concentrates on a set of possible explanatory factors for why energy subsidies are so difficult to change.

5.1 Uncertainty

In addressing the wider issue of why governments fail to adopt efficiency improving reforms – such as reducing or eliminating energy subsidies – one emphasis has been on the uncertainty regarding the distribution of gains and losses from reform[31]. A bias against reform could exist if some of the individual gainers and losers from reform cannot be identified *ex ante*, even if reforms prove popular *ex post*. The presence of individual-specific uncertainty can distort aggregate preferences. The assumption here is that if no reform occurs and the *status quo* is maintained, no new information will be made available about the distribution of losers and gainers. However, if a reform does get passed and then proves to be unpopular, more information is made available. In a competitive political environment this should allow voters to reverse that reform by voting in another government and/or policy. An extension of this insight is that gradualism is likely to be a more credible strategy in a democratic set-up precisely because of this ability to revise. For non-democratic regimes a *status quo* bias may be more likely due to the absence of political mechanisms for reducing uncertainty about outcomes and/or revising choices. These factors may combine to impair the credibility, let alone feasibility, of policy announcements linked to the reform of subsidies.

[30] See Acemoglu and Robinson (2000)
[31] Fernandez and Rodrik(1991).

5.2 Information

An associated consideration concerns the availability of information. Most generally, voters may have limited information about policies or people associated with particular policies and this may drive a wedge between formal and real accountability[32]. Governments may similarly frame policies without full understanding of voters' preferences. And – of clear relevance to the matter of energy subsidies – citizens may (and often do) have very incomplete or inaccurate information regarding what they or others receive in terms of subsidies, as also the content of policies with regard to subsidies, let alone the composition of total cost[33]. For example, survey and focus group evidence collected in Morocco in 2010 showed that in the case of the butane gas subsidy, a majority of households were actually unaware that any subsidy was in place[34]. In addition, there was a very significant under-estimation – across all social classes - of the scale of subsidy for the product. Moreover, while a removal of the subsidy on butane gas would have implied raising retail prices by two and a half times, respondents on average believed that a non-subsidised price would increase by less than 40%.

It seems likely that these sorts of mis-perceptions spread far wider than this one instance. It signals the need for clear explanation of what are the costs of subsidies, as well as the distribution of benefits, to citizens and affected parties. This element of public communication is returned to in more depth in Section 6 below.

5.3 Income traps

Persistence can also be traced to employment and compensation regimes and the problem of income traps, in particular. For instance, in parts of the Middle East and North Africa, public sector employment is often large. At the same time, monetary compensation has been set to be consistent with this employment level and the government's budget constraint, resulting in low levels of wages. Further, public sector wages often serve as the effective

[32] A point made by Besley (2004).

[33] For example, in Central and Eastern Europe non-transparent components, such as collection failures and unaccounted losses have been important parts of the total subsidy on electricity, amounting in Serbia to around 2% of GDP.

[34] World Bank (2010a)

benchmark wage in the economy, so that private sector wages come to be set conditional on the level of public wages.

The most striking case is Egypt where over 20% of wage employment is in the public sector and where wage levels have remained low and falling since 2000[35] Energy subsidies and the capital pricing regime have also affected the factor mix resulting in a declining labour share. Low wages have in turn been associated with a high exposure to poverty; over 40% of Egyptian households in 2008/2009 fell below an upper poverty line[36]. With energy consumption accounting for between 4.5-6.5% of household expenditure among the lower two expenditure quintiles, in 2010 it was estimated that a reduction in energy subsidies would induce at least a 4% decline in income in the lowest quintile. Further, aside from the impact of possible subsidy withdrawal on poor households, moving away from sustained price repression would also induce a large effect on the price level. In this instance, it can be seen that low compensation levels in an economy (not just the incidence of poverty) that have historically been part offset by cheap energy would impose very large adjustment costs. These costs and their timing can deter attempts at reform and contribute to persistence, as has clearly been the case in Egypt, but also in other countries[37].

5.4 Funding

Energy subsidies are commonly costly fiscally. However, financing can be through non-inflationary means or through an inflation tax. If the former is used, the cost of any subsidy-related deficit will fall mainly on later generations. If not available, then the inflation tax – as fiscal deficits become monetised - will largely fall on the notional beneficiaries of these transfers. In the latter case, this may actually help explain why energy subsidies can be attractive to particular types of governments as they provide asymmetric benefits to recipients. This will be particularly true if the actual benefits of an energy subsidy are concentrated - say, in a particular sector - while much of the cost of the subsidy is diffused through the inflation tax and borne by a far wider constituency. One implication is that,

[35] In 2007 average weekly wage levels in the public sector were around $55 and under $40 in the private sector, while real wages had fallen by between 25-33% since 2000.
[36] Roughly 20% of households were grouped between the upper and lower poverty lines. This amounts to around 500 Egyptian pounds per annum and, as such, constitutes a very narrow band.
[37] See, for example, Herrera (2010)

dependent on how subsidies are financed, while households or firms may receive some level of benefit from an energy subsidy, the real benefit after adjustment for prices, may be much smaller.

5.5 Beliefs

There are a very limited number of attempts – using household surveys and/or focus groups – that explore explicitly the attitudes of citizens regarding energy subsidies. The World Values Survey (WVS) asks the same questions to a large number of individuals in a large number of countries. Although this survey was not explicitly concerned with energy subsidies, it did ask respondents about their attitudes to risk, as well as with respect to type of preferred political system and other variables[38]. Respondents' attitudes regarding income differentials, competition, the role of government, as well as sources of success and wealth were selected[39]. Individual responses, as well as an average score for the response to these six questions, were used. These responses were interpreted as an indicator(s) of respondents' attitudes to risk. For example, a respondent favouring greater income equality or a greater share of government ownership of business or that the government should take more responsibility to ensure that everyone is provided for, was considered to be expressing a greater aversion to risk than someone favouring larger income differences, more competition and/or a lower role for government[40].

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[38] Interestingly, for those Middle East/Maghreb countries in the WVS not only were mean responses more favourable to democracy than for the sample as a whole but the belief that subsidising the poor was an essential aspect of democracy was a widely held view, again with a mean score significantly higher than for the full sample and/or for other middle income countries.

[39] More exactly the questions ask respondents to place their views on a scale of 1 to 10. The left hand of the scale (viz., 1) signifies complete agreement with the proposition as does 10 for the proposition on the right hand side. The statements are (a) Incomes should be made more equal(1)….We need larger income differences as incentives for individual effort (10); (b) Government ownership of business and industry should be increased (1)….Private ownership of business and industry should be increased (10); (c) The government should take more responsibility to ensure that everyone is provided for (1)…..People should take more responsibility to provide for themselves (10); (d) Competition is harmful. It brings out the worst in people (1)….Competition is good. It stimulate people to work hard and develop new ideas (10); (e) Hard work does not generally bring success – it is more a matter of luck and connections (1)….In the long run, hard work usually brings a long life (10); (f) People can only get rich at the expense of others (1)…..wealth can grow so there is enough for everyone (10).

[40] There was significant variation across countries as also within countries. For example, with respect to income equality the mean score for the full sample was 6.1 with a standard deviation of 3.1 and a range of ≥7.5 (Peru, Ghana) to ≥4.2 (Iran, India).

Using data for over 90 countries and 24,000 respondents from the fifth wave of the WVS in 2005/6, analysis indicated that being male, being educated and having a higher professional status was associated with a greater appetite for risk, while working in a public sector institution and lower self-reported social class was not. A subsequent stage of the analysis was to match the WVS data for the 25 countries that overlapped with the IEA subsidies dataset[41]. The measure of risk was then related not only to the characteristics of individual respondents but also to the amount of spending on subsidies in a given country. In most instances in the regression analysis, the subsidy variable was negatively signed and highly significant. While it is not possible to identify causality, it does suggest that energy subsidies are associated with greater risk aversion, even after controlling for individual attributes. If energy subsidies were effective measures of risk mitigation, this might, in effect, permit individuals to take more risk than they would in their absence. This does not seem to be the case, suggesting that energy subsidies may be part of a wider pathology of beliefs that err towards greater aversion to risk. A further implication is that countries with energy subsidies appear to have citizens that favour policies which are more state-centred and less favourable to markets. This makes reform of subsidy regimes particularly complex, not least because it suggests that, given individuals' beliefs, public institutions may need to play a central role in any reform if credibility is to be achieved.

6. Framing reform

How should the reform of energy subsidies be presented, managed and executed when considering both political and other constraints? Evidence from a large number country experiences suggests that instantaneous, wholesale reform has generally been infeasible. While, in principle, 'shock therapy' has several virtues, including on the fiscal side but also through limiting the scope for hoarding and speculation, anticipatory inflation and the space for opponents of reform to mobilise, the evidence unambiguously shows that more gradual approaches to reform have dominated. Clearly, part of the reason for this preference has often been the scale of adjustment to energy prices that has been required, but also the perceived extent of opposition to reform, whether organised or not. Yet, gradual reform

[41] The detailed results from the exercises described in this section are available on request and are also reported in Commander et al (2011)

programmes have also often proven to be problematic and subject to reversal. In addition, from a policy perspective, ordering reforms mainly on the grounds of feasibility may itself be distortionary and/or inefficient[42].

Energy subsidies commonly have a range of objectives, from rewarding specific interest groups to reducing the amount of income risk faced by recipients. The weight of these different motivations – and their associated constraints – will obviously have to influence the design of any reform strategy. At the same time, the scale and locus of distortions or cost imposed on the economy by subsidies will be relevant in deciding on priorities. However, given differences across countries and the complex skein of effects – direct and indirect, static and dynamic - a reform strategy obviously cannot be reduced to a simple template. The following sections lay out some of the key analytical and practical steps that need to be taken when designing and implementing reform. These steps are grouped into several stages.

6.1 Country characteristics

The first stage has to be largely descriptive where the principal objective is to understand the key attributes of the institutional and political system, the main players and the space in which they interact in terms of their announced objectives and the underlying constraints they face in both achieving those objectives as well as in possible reform[43]. A simple list of requirements is presented in *Boxes 1-3*. These group the data needs into three broad categories: expenditure and fiscal; motivation and outcomes and political and institutional. It can be seen that these country level (and in some instances regional) descriptive data include not only the type and scale of disaggregated energy subsidies – e.g., by source - but also the context in which energy pricing decisions are made and implemented, taking into account the organisation of local institutions and other factors structuring decision-making. These include information on where and how energy pricing decisions are made, for example, by the Presidency, Ministry of Finance or an independent agency, among other possibilities. In addition, it would be desirable to know whether energy pricing is determined

[42] For example, by addressing subsidies only on selected energy sources on account of the relative ease of reform.

[43] A diagnostic approach has also been applied in the context of constraints to growth by Hausmann, Rodrik and Velasco (2007), as well as in the extensive country literature that has followed.

in an *ad hoc* or discretionary manner or whether particular pricing rules are followed and with what frequency of adjustment in cases where pricing departs from market setting.

The diagnostics also crucially involve trying to identify the declared objectives or motivation of any energy subsidy and then identifying the correspondence (or lack of) between those objectives and actual outcomes (e.g., reaching poorer households, boosting access and so on). The aim is to identify whether the policy objective is, firstly, a desirable one and, secondly, whether it is one that is being achieved and with what effectiveness. Aside from identifying the main drivers, whether ideological, interest groups or as features of a wider economic strategy, and their key indicators, this will require detailed incidence analysis linked to a political-economy narrative and an associated timeline. This broad approach is sometimes referred to as stakeholder analysis[44].

For the incidence analysis, a distinction should be drawn between households and firms. For households, a recent household expenditure survey is a pre-requisite. For firm and/or sector level analysis, data on energy consumption, pricing and balance sheets are also desirable[45]. To model the likely impact of any change in the level of an energy subsidy, input-output tables or a SAM (Social Accounting Matrix) can help identify the direct and indirect effects of changes in energy subsidies across the main agents. By itself, this will not allow judgement as to whether the subsidy represents a socially efficient way of achieving the goals of policy, but it does facilitate a better understanding of the correspondence between stated objectives and outcomes. In this regard, a country's institutional capacity will also play an important role insofar as that capacity will determine the channels through which subsidies and/or transfers can be distributed. Information on the institutional set-up, capacity and delivery systems is essential.

6.2 Identifying constraints on reform

Identifying the main constraints to the reduction or elimination of energy subsidies is essential. Self evidently, these will differ across countries and may range from

[44] See, for example, World Bank (2008) and for a specific application to Morocco, Litvack and Chaherli (2009)
[45] Note that these data are often not available (as in the case of input-output tables) or hard to collect. For example, the Business Environment and Economic Performance (BEEPS) survey that samples a large number of firms in the transition countries no longer tries to collect such detailed information due to difficulties in getting accurate responses.

macroeconomic constraints - for example, the potential inflationary consequences of price adjustments to energy[46] - to the entrenched power of particular lobbies, institutional capacity and/or the inability of particular types of political authority to commit credibly to different policies. This also involves understanding the incentives facing politicians, many of which will be shaped by the configuration of the political system and its institutions.

Figures 7 & 8 provide a diagrammatic representation of the main actors, political institutions and constraints – and the inter-linkages – that exist. A distinction is drawn between broadly pluralistic and autocratic settings as it is clear that the political system can have a significant influence on the nature of those constraints, most strikingly in terms of the interaction between government and citizens. However, as there are often significant differences between types of democracies and types of autocracies, the framework set out here is deliberately cast to be encompassing.

Figure 7 lays out the main players in a broadly democratic or pluralistic polity, including the government, citizens, political parties and specific lobbies. The electoral system and its cycle are also included as this may affect the timing of reform: a party recently elected with a mandate may, for example, be more able to try reforms early in a term. The figure also draws in the government's institutional capacity and funding constraints, both with respect to distributional programmes, such as those targeted at the poor, but also the ability to provide transfers to non-poor households, as in a transitional programme aimed at winning public support for reform. Indeed, several recent episodes of reform have included transfers aimed explicitly at limiting opposition by non-poor consumers to changes in energy pricing.

Figure 8 repeats the same exercise in the context of an autocratic regime. There are obvious differences, not least in the absence or attenuation of political parties (save for officially sanctioned parties[47]) and clearly defined political institutions. Knowledge about citizens' preferences and/or perceptions, as well as the ability to communicate policy effectively to voters or citizens, appears to be particularly problematic in autocratic regimes. The connection between citizens and government is marked by absence of transparency, let

[46] Perhaps the clearest instance of a macroeconomic constraint to energy pricing comes from Egypt. Using 2008 data Abouleinein et al (2009) estimated that complete subsidy removal would raise the average price level of petroleum products by over 800% with the price of energy intensive industries expected to rise by around 30%. Transport and communications prices would also increase by over 40%.

[47] For example, the Baath Party in Syria.

alone feedback. Difficulty in communicating policy may also, in some instances, be traced to more fundamental limitations connected with the very legitimacy of the regime in question.

7. Linking reform with compensation and complementary policies

A central issue in discussion of subsidy reform is the question of whether compensation should be offered as part of a wider policy strategy. The assumption is that reform implies imposing costs on parts of the population, including, in some instances, vulnerable groups. In this context, one question is whether to link reduction or removal of energy subsidies to explicit compensatory programmes. Indeed, this association has almost become doxology in discussion of the pre-requisites for reform[48]. A related – and broader - matter concerns the architecture of risk mitigation that countries should be aiming to introduce or sustain, conditional on their affordability and viability. This covers a very broad policy landscape that is largely beyond the scope of this paper. However, a key component in income risk - namely the labour market or employment dimensions and, in particular, the issue of how to deal with involuntary job losses and unemployment - is discussed below.

The scope for reducing or eliminating energy subsidies is often potentially large. This has led many observers to note that the savings from reduction or elimination should allow governments to substitute targeted programmes of assistance using these resources; offering compensation to particular groups of losers may be a political pre-requisite for reform[49]. Crudely put, compensating some or all losers from reform can help placate opposition and allow reform to proceed. Certainly, country narratives suggest that income losses can be quite significant with associated, adverse effects on poverty[50]. For example, even the elimination of a small subsidy on gas cylinders in Jordan – spending on which accounted for around 0.4% of GDP in 2010 – would shift the poverty headcount up by roughly 0.5%[51]. The need for - and justification of - compensation mainly depends on the characteristics of the losers from reform, and, by association, the type, size and duration of the compensating payments. As *Box 4* illustrates, compensation to households in Iran was seen as essential for

[48] As argued, for example, in World Bank (2011).
[49] The G20 report states that 'an important condition for subsidy reform is the credibility of the government's commitment to compensate vulnerable groups…..and to use the freed public funds in a beneficial way', p36
[50] Coady et al (2006), Clements, Jung and Gupta (2007)
[51] World Bank (2011b)

the viability of reform but the subsequent package of measures was neither targeted, nor fiscally improving.

Some other recent country experiences with subsidy reform – as in Indonesia and Jordan – seem to support the view that compensating measures, including wage adjustments and transfer payments, can be important facilitators of reform. In Jordan, for example, a large nominal price increase in 2008 was coupled with wage and pension increases for public sector workers, cash assistance to the poor, including small farmers, and an increase in transfers through the National Aid Fund. Interestingly, however, in both Jordan and Indonesia, such compensating policy measures have not succeeded in preventing the subsequent re-emergence of energy subsidies[52].

There is also the issue of citizens' preferences about compensation. In particular, there is the issue of whether reforms that explicitly limit compensation to 'deserving' households through better targeting to poor households will be viewed as acceptable and/or desirable. Country narratives of energy pricing reform suggest that the assumption that non-poor households will accept reforms that have an adverse impact on them but not (at least relatively) on poor households should not necessarily be made. As will become clear later, part of the reason for why this is the case rests with governments' inability to communicate effectively with citizens about incidence, cost and equity.

A compensation scheme may also be time-inconsistent insofar as there are incentives to renege on any deal. This problem – as indicated above – is likely to be present in a non-democratic context. Compensation to a selected group(s) is likely to be less credible than a more universal transfer as the threat of collective action if compensation is withdrawn will be weaker in the first instance. Indeed, when opposition to change in energy subsidies is part of a wider matter of political legitimacy, the role of compensation may be either peripheral or counter-productive.

Improving the political acceptability of energy pricing reform through the introduction of selective compensation packages has been widely discussed and sometimes

[52] By 2011 energy subsidies in Jordan climbed back towards 3-4% of GDP largely as a result of new subsidies on oil products, while in Indonesia spending on subsidies more than doubled between 2008/2009, with petrol subsidies approaching peak 2008 levels. In Iran, the policy objective has been to make domestic and international prices converge over a 5 year horizon. Despite the large rise in nominal prices at end-2010, domestic prices remain significantly below international prices.

implemented. The importance of timing – notably the benefit of providing compensation either prior to or contemporaneously with price reform - also stands out. But this is a relatively narrow way of viewing compensation. Indeed, other complementary measures, particularly if timed well, can be major supports for reform. An example would be improvements in the reliability of energy supply or other measures directed at the provision of services. In a number of instances – notably some of the Indian states – mispricing of energy tends also to be associated with inefficiencies in supply, a consequence of which is rationing or excessive variability. In principle, measures taken *ex ante* that improve the quality or reliability of supply might be helpful in supporting the case for pricing reform. Other potentially supportive interventions can include improving the supply and terms of consumer finance and/or support for the adoption of energy-conserving technology. Structuring the path of reforms so as to deliver tangible benefits prior to price adjustment is particularly likely to provide support for the latter.

8. Compensating households

In what follows, the compensation problem for households is principally – but not exclusively – examined through the poverty angle[53]. As argued above, energy subsidies can have an impact on poorer households' income levels, the reduction of which can have adverse consequences for both the incidence and depth of poverty. But in some cases – Egypt and Iran are perhaps the most striking example – the direct and indirect effects of subsidy reform can affect a far wider swathe of households, making the policy challenge yet harder. Further, there may be an important political dimension that compels recourse to a staggered or limited reduction in subsidies in order to avert blocking by adversely affected non-poor constituencies.

8.1 Institutional capacity

Minimising the impact of proposed changes to energy prices on poor households should be a policy goal. However, achieving that objective through provision of compensation is also axed on a strong premise – namely, that compensation for loss or reduction of energy

[53] An interesting example focused on Morocco is Fruman and Yemtsov (2008)

subsidies can be delivered effectively and expeditiously. The question is whether a country has the institutional ability to deliver narrower – that is, more targeted – transfers to well identified households or individuals. From a practical perspective, whether a government has the information – who is poor and to what degree - and the institutional capacity to deliver compensating transfers are material considerations.

Box 4: Iran – Innovation in design but weak results

Recent Iranian experience is one of the largest and most ambitious attempts at energy subsidy reform explicitly linking reform to compensating transfers. Part of this can be attributed to the size of the required price adjustment. By 2010, energy subsidies amounted to nearly 15% of GDP. This meant that large nominal adjustments to energy prices were required. The compensation element involved a commitment to redistribute to households up to 50% of the fiscal savings and a further 30% to firms to cover restructuring costs in the first year[54]. In effect, government committed to clawing back no more than 20% of fiscal savings in that initial period. A further component of the reform was the explicit use of compensatory payments or allowances as well as their timing. Households were initially granted relatively generous allowances of low priced fuel. Initially households were granted 120 litres - subsequently reduced to 60 litres - of fuel at a price equivalent to 55% of international prices. Cash transfers were also made to households prior to the price reform to build credibility. Originally, the intention was to focus such transfers on poorer households. In reality, these transfers were more universal in nature than targeted as over 80% of the population received the transfer. This was accompanied by an intensive programme of public communication, coupled to explicit warnings to the population about the consequences of non-cooperation. In the 18 months since introduction of the price reforms, inflation has accelerated – in part as a consequence of the way in which the reform has been carried out. Far larger than intended – and increasing - monthly transfers to most Iranian households, as well as cross-border smuggling of fuel have eroded the fiscal gains. Indeed, by 2012 energy subsidies had swollen to around 17.5% of GDP as political considerations have dominated. Despite some cleverly designed features of the reform, the Iranian experience illustrates the difficulty in staying the course.

[54] Some 12,000 firms were surveyed and around 7,000 offered some form of compensation including lower fuel costs, interest rate subsidies on loans for adopting more energy efficient technology and other credit lines.

Reaching only poor households adversely affected by reform of energy pricing may require using existing transfer programmes – whether conditional or unconditional – that are scalable and/or initiating a new and possibly specific transfer. In Iran, the design of the reform initially involved a new and non-universal compensating transfer for households. Yet targeting that transfer at poorer households proved infeasible on both technical and political grounds[55]. In other countries, such India, while the ability to target may be far more developed, the ability to deliver transfers effectively to designated beneficiaries has still been the principal limitation[56]. In Indonesia, attempts at energy pricing reform since 2005 have all been explicitly associated with the introduction of contemporaneous compensation packages – such as an unconditional cash transfer – as well as the subsequent expansion of other social welfare programmes. In general, low income countries and non-democracies tend to be most constrained, whether with regard to existing or new transfer interventions.

If institutional frailty impedes effective targeting of transfers, it is possible that use of subsidies that are weakly targeted but are intensively consumed by poor households may still be one of the more effective ways of transferring income to those groups. This may imply that there is a case for using limited, consumption-discriminating subsidy as a transitional transfer instrument. But that would, of course, imply that it is temporary and mainly a stepping stone to a more effective targeting regime relying on non-subsidy transfers. The evidence – particularly in the Middle East and Asia – suggests that this transition often does not occur.

8.2 Energy consumption weights

The extent to which any particular energy subsidy reduction or removal affects poorer households depends on the respective weights of different energy types in their consumption baskets[57]. Among possible measures, use of cross-subsidies to energy sources relatively intensively consumed by the poor is an option that has been quite widely applied. Block tariffs have also been widely used for electricity. These require metering and allow some

[55] Consequently over 80% of the population received compensatory payments, see Guillaume et al (2011).
[56] The Indian Government hopes to use a national programme of identity/smart cards to target energy subsidies to poor consumers and in so doing, move away from across-the-board price controls.
[57] This can vary widely. In the transition countries, for example, the share of expenditures on energy for the bottom quintile ranged between 6-21% in 2008/9.

targeting to poorer expenditure groups with, for instance, the first block of consumption priced low. They can also be made consistent with other tariff routines, such as peak or timed pricing. The fiscal implications of price discrimination will also depend on the size of the first or lifeline block. Many of the same considerations apply to tariffs that differentiate on the basis of quantities consumed. For example, in Egypt, two-tier tariffs for petrol and LNG have been proposed with ration card holders allowed to purchase fixed amounts at subsidised prices[58]. Earmarked transfers have also been applied, notably in Eastern Europe[59]. But the scope for targeting may be limited if connections are rationed and/or limited among poorer consumers. This approach also does not easily adapt to petroleum products, although use of smart cards may partly overcome the problem[60].

8.3 Timing

The timing with which subsidies are reduced or eliminated may also be relevant. When energy subsidies have been allowed to become large, the use of a graduated programme of price reform - coupled with transitional energy subsidies to support adoption of other energy sources (e.g., subsidisation of connection fees) - may be relevant, as well as politically more acceptable[61]. Clearly, facilitating access makes sense either if it helps poorer households shift to more efficient energy sources or as part of a wider strategy moving consumers away from socially costly energy sources. Equivalently, compensating cash transfers can be applied to mitigate. In such instances, the obvious aim is to taper those transfers over time. But as with any strategy that involves staggered price changes - such as small but frequent adjustments - the obvious risk is that political opposition will have time to form. And even when the principle of selective compensation has been adopted, the success or failure of a reform can depend not just on the scale of compensation and its incidence but also the timing. The Nigerian attempt at raising fuel prices in 2012 (see *Box 5*) illustrates the pitfalls.

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[58] Note that this approach is quite administratively demanding; a smart card is a pre-requisite. In the Egyptian case it might at best allow fuel subsidies to be cut by an amount equivalent to 1% of GDP.

[59] World Bank (2010) provides a good discussion of the different subsidy mechanisms, see pp67-71. For Central and Eastern Europe, see World Bank (2011)

[60] The Iranians, for example, began in 2012 to introduce smart cards for petrol.

[61] Not that improving access in many cases is unlikely to be a substitute for price subsidies, as the beneficiaries of connection and price subsidies are likely to be different.

8.4 Non-poor households

In cases where energy subsidies are large and have been persistent, as well as where subsidies are widely viewed as providing some form of social support, a workable political strategy may involve a retreat from universal energy subsidies through the staging post of reduced subsidies to wider non-poor constituencies who otherwise might be able to block or delay reform. This has been the approach taken by the Iranian and Indonesian governments in recent reform episodes. In Indonesia in 2011, the policy discussion shifted to the merits of providing non-poor consumers fuel using a convertible fuel voucher – an entitlement to a fixed volume of petrol that can be converted into cash. But faced with a spiralling subsidy bill, in 2012, the government has tried to raise fuel prices only to be checked by disagreement between the Parliament and Executive. This has forced the latter to shift focus to trying to cap consumption by excluding sale of subsidised fuel to some groups of private motorists. The main aim has been to make reform more acceptable among the wider population. Distribution of vouchers or coupons – a feature also of the first Syrian energy price reform in 2007 – has been viewed as far less information intensive (although with its own set of possible distortions) and, at the same time, politically attractive.

Box 5: Pitfalls of reforming large and sustained subsidies: Nigeria in 2012

Energy subsidies in Nigeria had increased nearly tenfold between 2006 and 2011, amounting to between $8-16 billion by 2011. A parliamentary report published in 2012 which arrived at the higher $16 billion figure also estimated that the country had lost around $7 billion due to corruption and mismanagement of its fuel subsidy programme between 2009 and 2011. To put this in further context, the total fuel subsidy bill has been higher than that of budgetary spending on education, health and social protection combined.

In January, 2012 Nigeria attempted a radical reform of the subsidies system. Prices were jumped by 120% but at the same time some compensating payments – principally increments to wages - were offered to public employees, as well as the announcement of a subsidy reinvestment and empowerment programme (SURE) to be implemented over the coming 3-4 years. The latter included a range of palliative measures, such as vocational training, conditional cash transfers and spending on public works. The response by

significant sections of the population was not accepting. Strikes and civil unrest followed, leading to the government having to limit the increase in fuel prices to around 50% as against the intended 120%.

What explains the limited success of this attempt at reform? First, the size of the price gap had grown to very large proportions, which implied a major fiscal cost. Yet, much of the population, as well as firms, had become accustomed to low fuel prices and had adapted their behaviour accordingly. This bolstered resistance to change. Second, because of the size of the price wedge, reform had to involve a large price adjustment. But this was implemented unilaterally without any prior and intensive public information campaign, as well as a limited understanding on the part of government of the likely impact of the increase on different types of households. Third, the efforts of the government to mitigate the effects of the price increase came late, under pressure and with limited coverage. They were also weakly justified to the population. Moreover, many of the wider mitigation measures - mainly planned through the SURE programme - were to be rolled out over the coming years, rather than immediately. This time path was poorly synchronised with the shock to incomes directly and indirectly associated with the reform. Finally, the whole episode highlights the difficulty of engineering change when government itself is viewed as venal and self-interested and lacks credibility as a vehicle for reform.

9. Understanding preferences

Behind almost all episodes of subsidy reform is the question of political acceptability. This may take the form of a party or President's re-election prospects or, particularly in the case of non-democracies, whether people take to the street and/or challenge the current regime. Certainly, the apprehension that such outcomes might occur appears to be a central consideration. Because of this, a key issue concerns the ability of policy-makers to know how to structure reform in a way that minimises the political costs. As indicated earlier, this is generally more problematic in non-democracies.

9.1 Identifying choices

In motivating subsidy reform, a common thread of argument is that shifting from a universal sort of subsidy to one that is more targeted is normally good practice. Yet this contains a strong underlying assumption; namely, that a sufficient share of citizens will be prepared to accept some loss in welfare for themselves if, however, that loss is spread in a way that supports equity[62]. In other words, in a reform of energy pricing, it is assumed that support may rise if poorer households are seen either to lose less or possibly gain. While there may indeed be grounds for assuming that this sort of benevolence is present, this has, so far, been little tested empirically. Indeed, the wider literature on redistribution – mostly centred on advanced market economies - has found evidence for a number of motivational drivers, including self-interest, social preferences as well as aversion to inequality with variation across countries[63]. For example, in the context of pension reform, choice experiments have found that altruism and social preferences indeed play a role. The impact on poverty of any revised policy has been found to affect significantly the probability of choice[64]. Yet use of choice experiments in developing or emerging countries to determine the respective weights of self-interest and benevolence, has been almost non-existent, let alone with respect to the specifics of energy subsidies. This is a key area that will repay greater attention by policy-makers as an input to their formulation of policy. For this to be robust, however, requires close attention to design.

9.2 Implementation

Testing different policy options in the population can be implemented in a variety of ways and with different associated bias. To date, use of focus groups, sometimes linked to, or sampled from, larger household surveys, has been the main approach (see *Box 6)*. This can undoubtedly offer important insights but remains open to criticism regarding sample size and selection. Further, in the case of focus groups, the way in which the questions are posed and the structuring of discussion will be critical and is open to problems of bias. Focus groups may also be particularly problematic in political contexts where freedom of

[62] See, for example, Fong (2001).
[63] In the context of advanced market economies, see, inter alia, Boeri et al (2001), Ferrara (1993), Lynch (2006)
[64] In the Irish context, see Fourati et al (2009)

expression is not a given and where the incentives for disclosure of beliefs may be qualified. Similarly, large heterogeneity in the population whether in terms of characteristics (such as income) or in terms of beliefs may compromise drawing workable policy conclusions[65]. Yet despite these limitations, small or focus group discussion offers probably the most feasible and cost-effective way of exploring different policy options and underlying preferences.

Alternative or complementary approaches include field experiments[66]. For obvious reasons, the subsidy problem is not likely to generate a natural field experiment, so that the principal design challenge will be to randomise subjects into appropriate treatment and control groups. Use of what Levitt and List (2009) classify as 'artefactual' and 'framed' experiments may be appropriate, insofar as they can be directly linked to a menu of public policy[67]. This sort of approach is likely to be particularly rewarding when there is considerable uncertainty about individuals' beliefs and preferences, as might be expected to be the case in a non-democratic setting.

10. Political communication

Attempts at subsidy reform illustrate repeatedly the importance of how policy is presented to the population. A recent example of limited and ineffectual communication was in Bolivia where nominal petrol and diesel prices were hiked by between 57-83% in December 2010 with little prior communication to the population (see *Box 7*). The wider country evidence on communication suggests that governments – democratic and non-democratic - have consistently struggled to cast subsidy reduction in a positive or welfare-enhancing light and to design effective communications strategies. This is partly because particular group/region self-interest – as with groups who intensively use subsidised energy – may dominate, but also because extra-group benefits (i.e., national welfare) have been difficult to convey, particularly when wider issues of perceived equity are also present. In Iran, communication about the objectives of reform concentrated on the un-sustainability of the

[65] Interestingly, the study of butane gas and wheat subsidies in Morocco using focus groups found that heterogeneity among the main attitudinal segments was too large to allow effective targeting in terms of political communication, see World Bank (2010a).
[66] In principle, because of the emphasis on policy, large scale social experiments could be used. However, such approaches are normally highly intensive in time and resources and rarely match to the political timescale.
[67] See, for example, an application concerning willingness to pay, Rozan et al (2004)

fiscal costs, as well as the consequences, including waste and pollution and the impact of other factors, such as sanctions. There was an intensive public relations campaign using different media, as well as an attempt to educate the population about the costs of the subsidy regime. There was also a focus on the distributional nature of the problem, notably

Box 6: Probing the beliefs of citizens regarding subsidies: Morocco

In Morocco, subsidies for both energy and food have for long been a sensitive feature of the policy landscape. In 2010, the government – as part of its soundings for reform – decided to commission a study of citizens' views regarding two particular subsidies – those for butane gas and wheat. The study would also explore the options for a change in policy. The perceived constraint was the unwillingness of major sections of the population to accept such changes and a lack of clarity as to how to initiate a public discussion of possible changes in policy (itself partly a consequence of the political system). The study, involving the use of focus groups and individual interviews, found that the system of subsidies was widely viewed as necessary, even among social groups who benefited relatively little from the subsidy. Most considered that the provision of subsidies was not only 'normal' practice but also beneficial, even if of benefit principally to richer households, and only 30-40% accepted the proposition that subsidies were not sustainable fiscally. Although nearly 50% of respondents were open to reform on the grounds that the current system was unjust and/or inefficient, around half of this group did not trust the current government to carry out reform, even though existing transfer programmes – such as RAMED, Tayssir and Promotion Nationale - were generally perceived as being effective. In short, the evidence indicated that in 2010 it would be difficult to put together an effective coalition for reform. It also highlighted the need for better communication of policy options as a pre-condition for building any effective coalition in the future.

the regressive consequences of subsidies[68]. But this attention to communication - albeit one underpinned by the frequently announced willingness to suppress dissent to reform – has been surprisingly rare. Governments have struggled to present an effective case for why

[68] See Guillaume et al (2011)

subsidies should be reduced with argument for reform mainly limited to the budgetary and/or balance of payments costs. Even in the transition countries where so-called hidden costs (such as low collection rates) of electricity subsidies, in particular, have been high (in some Central Asian countries they have amounted to over 10% of GDP), governments have been largely unable to use this to their advantage. Mention has already been made of the importance of introducing complementary non-price reforms that improve access to energy supply or finance preceding pricing reform. These benefits need also to be communicated effectively.

Yet, in short, whatever the design and sequencing of energy subsidy reform, it is striking in general how poorly governments of all hues have performed when framing political communication about subsidies.

Box 7: Decision-making and communication in a botched fuel price reform: Bolivia in 2010/11

An abortive attempt at fuel price reform in Bolivia was made in December 2010. Decision-making was concentrated in the hands of the President and his immediate associates. Energy price setting - due to the infrequency of adjustment - meant that the distance of domestic from international prices was very substantial. The size of this price gap motivated the government to attempt a large adjustment to domestic energy prices. There was, however, a lack of prior preparation and communication with the citizenry about the scope and timing of the reform. The lack of transparency with respect to policy goals was accompanied by the absence of any workable compensation scheme. No consideration had been paid to what sort of transitional compensation ought to be paid and to which particular constituencies. Further, institutional and other frailties meant that the main lever for compensation had to be through relatively general wage increases. Indeed, faced with pressure from the street, the government moved to offer wage increments but only for public sector workers. Escalating protests led to the government rapidly abandoning reform.

11. Firm and labour market effects

The discussion so far has centred on household exposure to energy subsidies. Yet, energy pricing commonly has a large impact on the firm sector and the labour market, particularly when firms and sectors in an economy have high energy intensity, sometimes as a consequence of the persistent mis-pricing of energy (as in Egypt or Iran). Compensation to lower the costs to firms of investing in plant and/or infrastructure assembled in a period of subsidised energy prices may be very costly. As such, reduction or elimination of energy subsidies can have a potentially large impact on profitability - even on viability - and can be associated with large job losses[69]. Yet lay-offs can not only be economically costly but are also politically difficult and commonly constitute a major barrier to reform[70].

Country narratives suggest that fear of the employment consequences of energy subsidy reform is indeed a major consideration and constraint on reform. While it may be desirable to deal directly with the merits and viability of employment-related policies without attaching them directly to the reform of subsidies, there may be cases where linking the two will be advantageous from a political economy perspective. Simply eliminating energy subsidies to firms who have internalised a different cost structure may impose too difficult a burden, so that phased reforms with/without targeted support to firms to restructure may be relevant[71]. However, it is important to separate out relatively short run compensation measures for job losers from the longer run question of what sort of system for dealing with employment risk should be put in place. As such, there is both the relatively narrow question of whether dealing with employment risk can make subsidy reform more feasible (and if so, does that imply that the former should be a policy objective), as well as the broader matter of how to deal with employment risk more generally in a way that does not set up bad incentives and is also affordable.

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[69] This will depend on the extent to which firms can pass on price increases to consumers and the elasticity of demand, as well as the ability to separate workers. A negative price shock can also be met by changing technology aimed at reducing energy consumption and/or by lowering other costs, notably wages. Nominal wage adjustment is always difficult, so adjustment through employment – either lay-offs and/or shorter working time – has tended to dominate.

[70] This may be particularly true when employment is highly concentrated spatially, as in the so-called one-company towns that continue to populate the countries of the former Soviet Union.

[71] Phasing of price reforms in principle gives firms time to adapt their expenditure and inputs mix but prolonged implementation schedules have the usual disadvantage of giving space for opposition to reform to coalesce.

11.1 Dealing with job losses

The usual options for dealing with lay-offs include severance pay with/without training, support for job search and/or the provision of unemployment benefits and/or social assistance to job losers. Yet in most emerging and developing countries, unemployment insurance is both institutionally difficult as well as fiscally challenging. That has left severance as the dominant mode of response. But severance has obvious limits and by itself is a weak instrument for addressing the income insecurity that employment risk poses and which may be a significant factor behind the use of alternative (and highly inefficient) instruments for income support, such as energy subsidies[72]. Further, severance may be able to deal with only a proportion of possible job losers for fiscal reasons, as also because coverage would generally apply only to the formal sector[73].

For many developing and emerging countries, the central challenge is to move away from high severance payments and employment protection to publicly provided unemployment insurance and lower severance costs[74]. This shift would be essential if grafting on some element of unemployment insurance to existing systems of (excessive) employment protection is to be avoided. Firms would in principle gain from the increase in discretion regarding hiring and firing decisions. At the same time, reductions in payroll tax rates for employers could be made to reflect a rebalancing of risk sharing and to increase the attraction of the policy shift.

A relatively small number of emerging markets – Turkey, Korea and the transition economies - have already established systems of unemployment insurance. However, coverage remains low across all regions, as do replacement rates[75]. Moreover, unemployment insurance – at least in the OECD manner - is costly fiscally[76], as well as having potentially adverse incentives[77]. Unemployment insurance may also be too demanding institutionally for many developing countries. With large informal sectors – in

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[72] The evidence suggests, for example, that this has been a factor in Egypt and other North African countries.
[73] As to how unemployment benefits can work in a model of restructuring, see Commander and Tolstopiatenko (1998), also Blanchard (1997)
[74] Blanchard (2004)
[75] Vroman and Brusentsev (2009)
[76] Including unemployment benefits, social protection expenditure accounts for over 25% of GDP in Western Europe.
[77] Benefits have been found to affect non-participation as well as the duration of unemployment, not least as indicated by the jump in job matching that occurs when eligibility for receipt of benefits expires..

India, for example, the relative share of the formal sector in industrial employment is under 10%[78]- there are also major issues regarding the feasibility of broadening coverage.

Given these drawbacks, other approaches have placed a greater emphasis on self-insurance[79]. In particular, to reduce moral hazard, merging elements of saving or self insurance with a funded insurance component has been discussed[80]. Employers and, in some cases, workers would deposit a specific share of a worker's earnings in an individual savings account. In case of job loss, workers can draw on these accounts. The main difference in the design of various self-insurance schemes is whether redistribution or borrowing is allowed. In Chile, for example, private contributions are supplemented by public insurance[81].

Yet, any system with redistribution (using public funds) will raise many of the same problems as a publicly funded insurance system. Further, such schemes do not address the problem of layoffs by making firms internalise the cost of the public resources used to complement any self-insurance element[82]. Self-insurance also requires high levels of institutional capacity and integrity, including a financial system capable of managing and investing the array of individual accounts. Particular groups of workers may be unable to generate sufficient savings to draw down over an unemployment spell. This is likely to be particularly true for young workers who commonly face higher hazards of unemployment, as well as low wage earners in the informal sector[83]. In economies where wage levels are relatively low, workers may be unwilling to save for events that are hard to predict and to which they may attach very widely differing probabilities. Indeed, the savings shortfall criticism may also hold in aggregate in some developing countries.

While there may be both efficiency and welfare reasons for trying to introduce unemployment fallbacks, there tend - as with subsidies – to be inevitable political economy

[78] OECD (2007), p121
[79] For example, Vodopivec (2009)
[80] See Robalino et at (2009) for a good overview
[81] Van Ours et al (2010)
[82] Blanchard (2004)
[83] An additional criticism is that they are unsuitable for large informal sectors. In principle, adopting an explicit redistributive objective through the use of public resources could allow extension of coverage to informal workers (Robalino et al (2009)). It is not clear whether (a) such an extension of coverage would match to demand, (b) would be administratively and institutionally feasible and finally, (c) would be free from the usual design problems facing more conventional programmes.

constraints. Incumbent beneficiaries of the *status quo* are often employed in public sector firms, government or in large private companies that are unionised and where the voice for protection is often powerful. Many governments also draw their political support from the protected sector through providing superior benefits and other employment based privileges. These aspects suggest that trying to deploy some explicit form of unemployment insurance as a counter-policy to existing combinations of subsidies, employment protection and/or severance may not only be institutionally and fiscally challenging but may also face non-trivial political constraints. Nevertheless, in many emerging markets it is likely to be part of the solution.

12. Conclusion

Use of energy subsidies is now widespread among developing and emerging economies. While the consequences are generally adverse from an efficiency perspective, subsidies tend to confer private benefits on particular groups, including, in some instances, the poor. Whatever the political complexion of a country, once introduced, energy subsidies tend to become a more permanent feature of policy furniture. This paper has examined the reasons why this might be the case and possible ways of overcoming the barriers to reform. Drawing extensively on country experiences, the starting point was to look at the motives lying behind the adoption of energy subsidies. Distributional motives were found to figure prominently, even if there is a large gap between the avowed aims of subsidy programmes and their outcomes. The role of interested parties or lobbies is also a common factor. The paper then looked at the characteristics of countries that use energy subsidies. Countries with weak institutions – often non-democracies – tend to be associated with higher subsidies. Non-democracies not only often have major differences between the announced intentions and outcomes of subsidy policy but also major problems with their credibility and capacity to reform. Going below the country level of aggregation to the level of individuals or households, the paper then looked at how attitudes to risk might affect the ability to reform energy subsidies. Energy subsidies and relatively high aversion to risk appear to be correlated. While causation is too difficult to resolve, it seems clear that the attitudes of citizens are likely to be a major constraining factor on reforming governments.

With this in mind, the paper then set about looking at how best country level conditions and constraints might be identified. An analytical-cum-policy framework starting with some basic diagnostics before moving to a detailed identification of the key constraints was proposed. The constraints to reform may trace back to the political system, political institutions, as well as institutional capacity - an important consideration when considering the possible role for compensating transfers. At the same time, the approach to identifying constraints also helps understand the drivers behind energy subsidies, principally in terms of beneficiaries, direct and indirect. This leads naturally to an extended discussion of the compensation argument – namely that for reform to prosper governments sometimes need to consider implementing compensatory transfers, as well as complementary reforms that can help improve acceptability. The timing of the introduction of complementary reforms is critical. For compensation, institutional capacity is a main determinant as to whether such transfers can be targeted on distributional grounds, viz., to the poor. But institutional frailty as well as additional considerations of political feasibility may make temporary transfer programmes to the non-poor a required feature of reform. The paper also indicates that a better understanding of citizens' policy preferences and the sorts of trade-offs that can be accepted is highly desirable, yet rarely undertaken.

Given the fact that energy subsidies commonly affect firms' operating margins, as well as choice of technology and investment, subsidy reduction can be potentially very disruptive to firms and the labour market. This may warrant the use of selective, transitional paths of subsidy withdrawal but also consideration of how to mitigate associated employment risk, including with respect to those made unemployed through restructuring. Addressing employment risk, while difficult in design terms as well as being potentially fiscally costly, is, however, likely to be part of the longer term solution to use of energy and other subsidies.

The paper has covered a large and complex territory, drawing on both the analytical literature as well as detailed country narratives. It has identified some of the main ways in which political factors influence whether energy subsidies are used, as well as ways in which politics can influence or structure the choice of path and timing of reform. It seems clear that reduction or elimination of energy subsidies generally faces significant hurdles among

the population, as well as from beneficiary interests and organisations. In the face of these hurdles, the evidence suggests that governments interested in reform have rarely done adequate preparatory work, let alone worked out how to win over citizens and others in ways consistent with the fiscal, institutional and other capacities available to them. The problem is most acute in non-democracies but is far from absent in systems where political competition is present.

References

Abouleinen, S, H. El-Laithy and H. Kheir-El-Din, (2009), 'The Impact of Phasing Out Subsidies of Petroleum Energy Products in Egypt' ECES Working Paper 145, April

Acemoglu, D and J. Robinson (2006), *'Economic Origins of Dictatorship and Democracy'*, Cambridge University Press

Acemoglu, D and J. Robinson (2000), 'A Theory of Political Transitions', MIT and UC Berkeley, mimeo

Besley, T, (2004), 'The New Political Economy', London School of Economics, mimeo

Blanchard, O, (2004), 'Designing labour market institutions', MIT, mimeo

Blanchard, O, (2004), 'Reforming labour market institutions: unemployment insurance and employment protection', Conference on 'Post-Washington Consensus', September

Blanchard, O, (1997), *'The Economics of Post-Communist Transition'*, Clarendon Lectures, OUP

Boeri, Tito (2000), '*Structural Change, Welfare Systems and Labour Allocation'*, Oxford, OUP

Burniaux, J et al., (2009), 'The economics of climate change mitigation'. OECD, Paris, Working Paper

Clements, B, H. Jung and S. Gupta, (2007), 'Real and distributive effects of petroleum price liberalization: The case of Indonesia', *Developing Economies*, 45, 2, 220-236

Coady, D et al (2006), 'The magnitude and distribution of fuel subsidies: Evidence from Bolivia, Ghana, Jordan, Mali and Sri Lanka', IMF Working Paper

Commander, S (with C. Amini and Z. Nikoloski), (2011), 'The Political Economy of Energy Subsidies', London

Commander, S and A. Tolstopiatenko, (2007), 'The Role of Unemployment and Restructuring in the Transition', in Simon Commander (ed), *'Enterprise Restructuring and Unemployment in Models of Transition'*, World Bank, Washington DC

Dixit, A, (1996), '*The Making of Economic Policy: A Transactions Cost Politics Perspective'*, MIT Press, Cambridge, Mass

Fernandez, R and D. Rodrik (1991), 'Resistance to reform: status quo bias in the presence of individual-specific uncertainty', *American Economic Review*, 81, 5, pp1146-1155

Fruman, C and R. Yemtsov, (2008), 'Reforme des mecanismes de compensation et de protection sociale', World Bank, mimeo

G-20 (2010), 'Analysis of the Scope of Energy Subsidies and Suggestions for the Implementation of their Phasing-Out', Joint Report of the IEA, OPEC, OECD and the World Bank for April Meeting of the G20

Global Subsidies Initiative, (2011), 'Phasing out Fossil Fuel Subsidies', Draft Outline Report for the APEC Energy Working Group, mimeo, August

Grossman, G and E. Helpman, (1994), 'Protection for Sale', *American Economic Review*, 84,4, pp833-850

Grossman, G and E. Helpman, (2002), '*Special Interest Politics'*, MIT Press, Cambridge, Mass.

Muller, C, (2007), 'Anti-Poverty Transfers without Riots in Tunisia', DIAL Working Paper, University of Alicante

GTZ, (2007), '*International Fuel Prices 2007'*, 5th edition, Eschborn

Guillaume, D, R. Zytek and M. Farzin, (2011), 'Iran – the Chronicles of the Subsidy Reform', IMF Working Paper, WP/11/167

Herrera, S (2010), 'Subsidies in Egypt: Alternatives for Reform', Presentation at ECES Workshop, Cairo 5 October

IMF, (2011), '*Regional Economic Outlook: Middle East and Central Asia'*, Washington DC

Kanbur, R, (2010), 'Protecting the poor against the next crisis', Cornell University, mimeo

Levitt, S. and J. List, (2009), 'Field experiments in economics: the past, present and future', *European Economic Review*, 53, 1-18

Litvack, J and N. Chaherli, (2008), 'Stakeholder Analysis on Moroccan Cereal Reform', World Bank, mimeo

Nikoloski, Zlatko (2011), 'Energy subsidies and their reform: country narratives', London, mimeo

Persson, T and G. Tabellini, (2000), *'Political Economics: Explaining Economic Policy'*, MIT Press

Rajan, R, (2009), 'Rent Preservation and the Persistence of Under-development', *American Economic Journal, Macroeconomics*, 1, 1, pp178-218

Robalino, D, M. Vodopivec and A. Bodor, (2009), 'Savings for unemployment in good and bad times: options for developing countries', IZA Discussion Paper 4516, October

Rodrik, Dani, (1998), 'Why do more open economies have bigger governments?', *Journal of Political Economy,* 106, 51, pp997-1032

Rodrik, Dani, R. Hausmann and A. Velasco, (2007), 'Growth Diagnostics', in D. Rodrik, *'One Economics, Many Recipes'*, Princeton University Press

Rozan, A, A. Strenger and A. Willinger (2004), 'Willingness to pay for food safety', *European Review of Agricultural Economics*, 31, pp409-424

Van Ours, J and M. Vodopivec, (2010), 'Incentive Effects of Unemployment Insurance Savings Accounts: Evidence from Chile', IZA Discussion Paper 4681

Vodopivec, M, (2009), 'Introducing unemployment insurance to developing countries', IZA Policy Paper 6, April

Vroman, Wayne and Vera Brusentsev, (2009), 'Unemployment compensation in a worldwide recession', Urban Institute and University of Delaware, mimeo, June

World Bank, Social Development Department,(2008),'*The Political Economy of Policy Reform*", World Bank, Washington DC

World Bank, (2010), 'Subsidies in the Energy Sector: Measurement, Impact and Design', April, mimeo

World Bank, (2010a), 'Analyse de la reforme du systeme de subventions au Maroc', 22 September, mimeo

World Bank, (2011), 'Balancing act: cutting subsidies, protecting affordability and investing in the energy sector in ECA', May, mimeo

World Bank, (2011a), 'Implementing Energy Subsidy Reform: Evidence from Case Studies', Washington DC, September

World Bank, (2011b), 'An analysis of consumption subsidies in Jordan', Washington DC, July 21, mimeo

Table 1: Motivation for Energy Subsidies

	Notional Temporary Income Buffering	Lobbies and Specific Interest Groups	National Patrimony Resource Sharing	Component of Industrial Policy	Improving External Competitiveness	Development of alternative energy supply	Poverty/equity justification
Algeria			X	X		X	X
Argentina		X					X
Bolivia		X					X
Chile							X
China		X		X	X		X
Dominican Republic							X
Egypt		X		X			X
Ghana	X	X				X	X
India		X					X
Indonesia				X		X	X
Iran		X	X	X		X	X
Jordan		X					X
Lebanon							X
Malaysia		X					X
Mexico			X	X		X	X
Morocco		X				X	X
Pakistan		X					X
Syria	X	X					X
Tunisia							X
Yemen							X

Source: Extracted from Nikoloski (2011)

Table 2: Instruments for Energy Subsidies

	Producer Subsidies				Consumer Subsidies		
	Direct & Indirect Transfers	Tax Exemptions & Breaks	Provision of Goods & Services Below Market Prices	Income or Price Support	Price wedge	Non-collection of energy bills	Taxation
Algeria	X	X	X	X	X		
Argentina	X			X	X		
Bolivia	X		X	X	X		
Chile					X*		
China	X		X	X	X		
Dominican Republic	X			X	X	X	
Egypt	X		X	X	X		
Ghana	X		X	X	X		X
India	X		X	X	X		
Indonesia	X		X	X			
Iran	X	X	X	X	X		
Jordan	X			X	X		X
Lebanon	X	X		X	X	X	
Malaysia	X		X	X			X
Mexico	X	X	X	X	X		X
Morocco	X			X	X		X
Pakistan	X		X	X	X		
Syria	X		X	X	X		
Tunisia	X		X	X	X		
Yemen	X			X	X	X	

Notes:

Direct and Indirect Transfers= Direct spending (e.g., R&D support, Earmarks etc); Government Ownership of Energy-related enterprises; Government Loans and Loan Guarantees, subsidised credit, Government loans and loan guarantees

Tax exemptions and breaks= Foregone tax revenues due to exemptions etc; Lower marginal tax rates for energy sector; exemptions from excise taxes

Provision of Goods and services= Government-owned energy minerals; royalty relief or reduction sin taxes on extraction; Government owned natural resources or land; Government owned infrastructure; Government purchase or provision of goods or services at non-market prices

Income or Price Support= Regulated prices at above or below market prices; Consumption mandates such as fixed consumption shares for total energy use; Trade restrictions; Regulatory loopholes

* - some consumer subsidies applied only in case of poor households (like in the case of Chile for example)

Source: Nikoloski (2012), Dansie et al (2010),

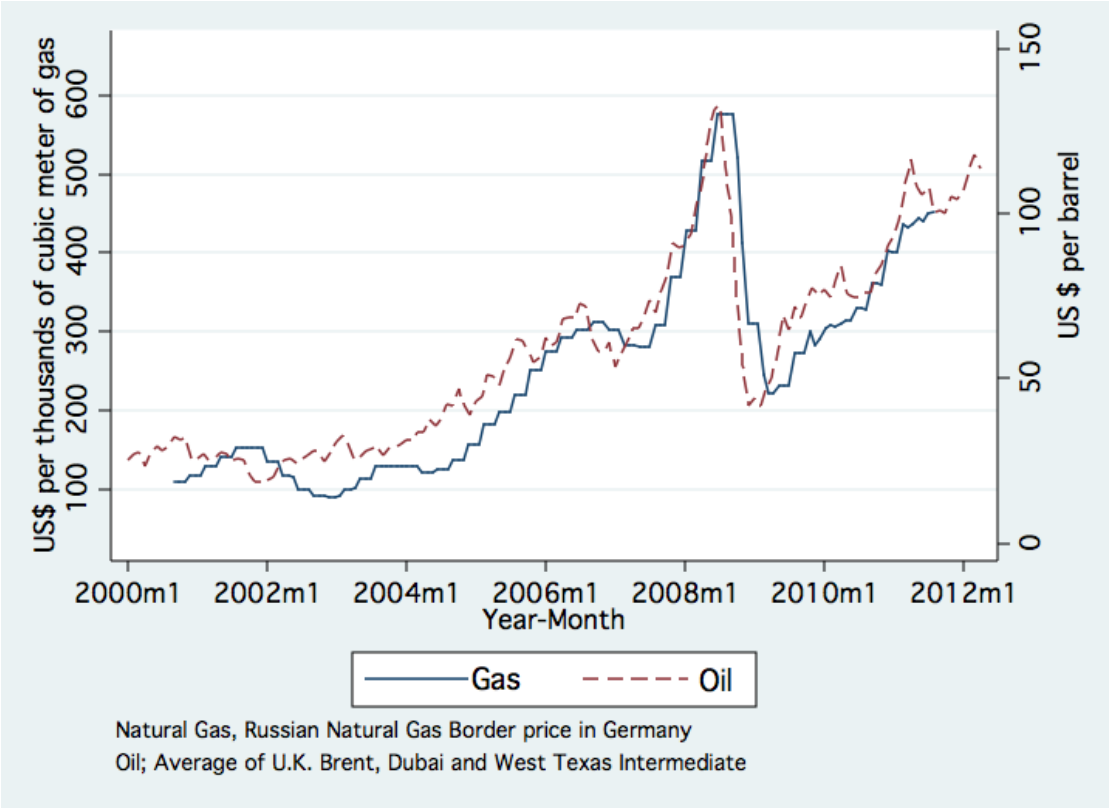


Figure 1: Oil and Gas prices; 2000-2012
Source Natural Commodities prices, IMF.

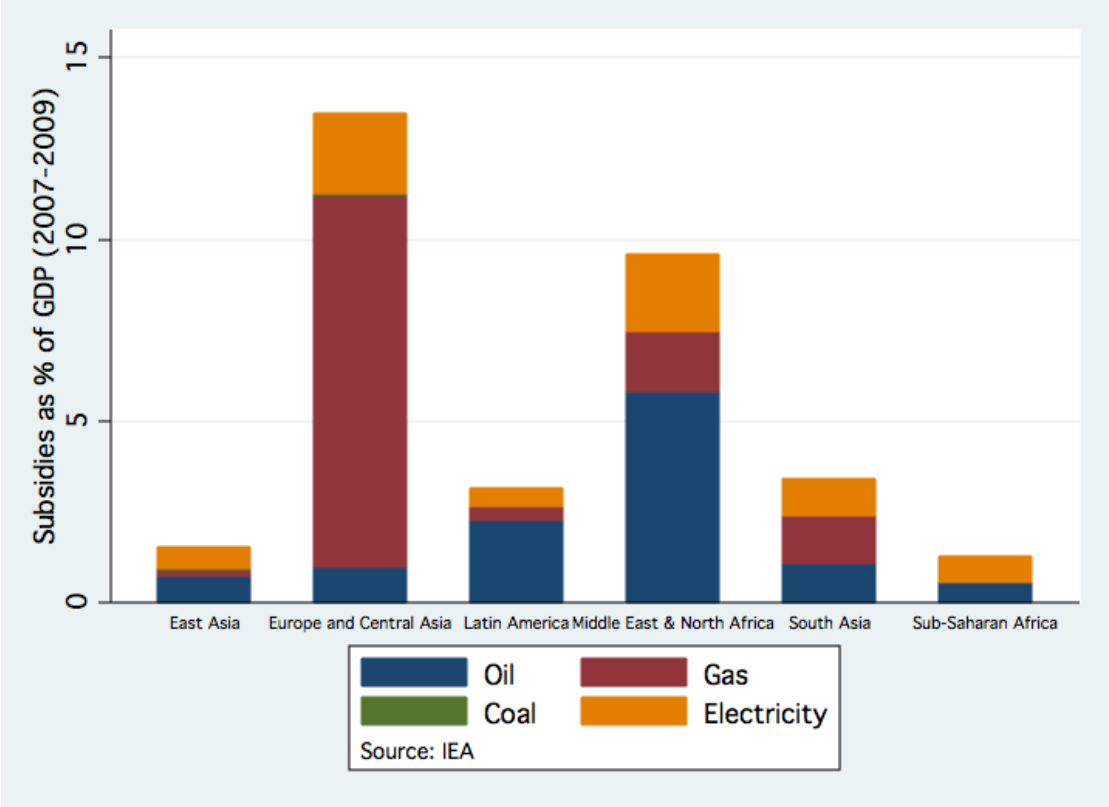


Figure 2: Oil, Coal, Gas and Electricity Subsidies/GDP; 2007-2009
Source: IEA

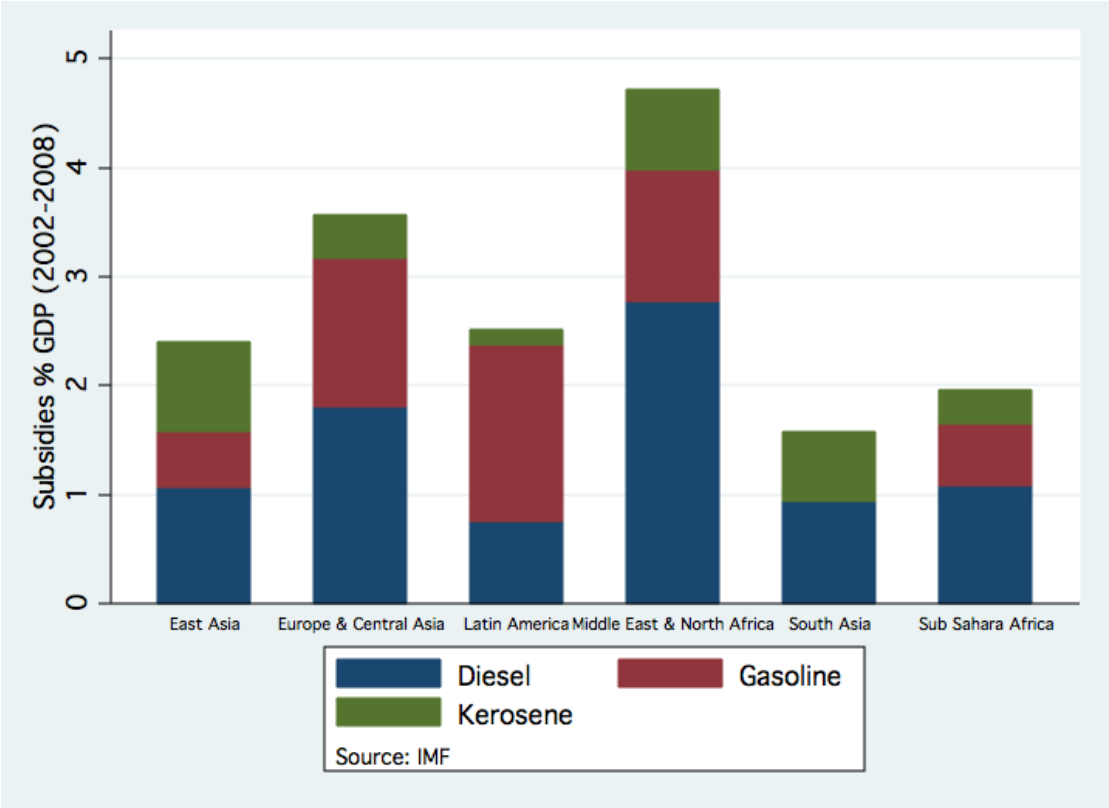


Figure 3: Diesel, Kerosene and Gasoline Subsidies/GDP, 2002-2008
Source: IMF

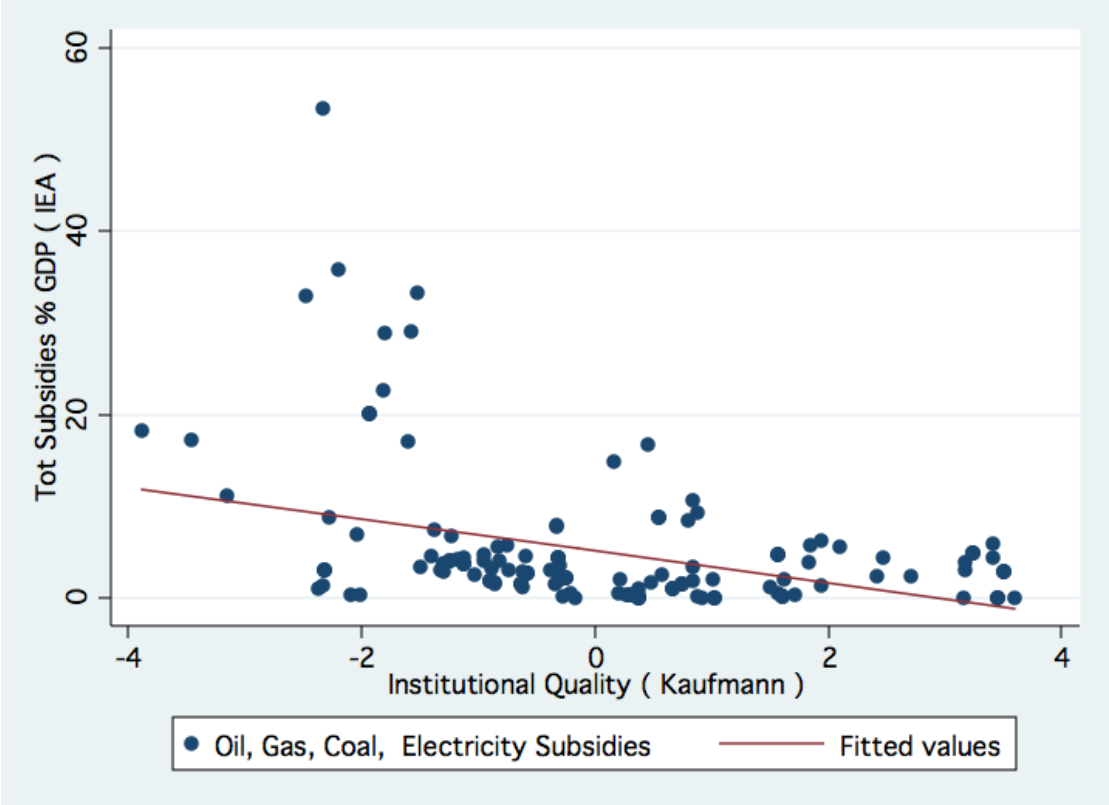


Figure 4: Energy Subsidies and Institutional Quality
Source: Kaufmann and IEA

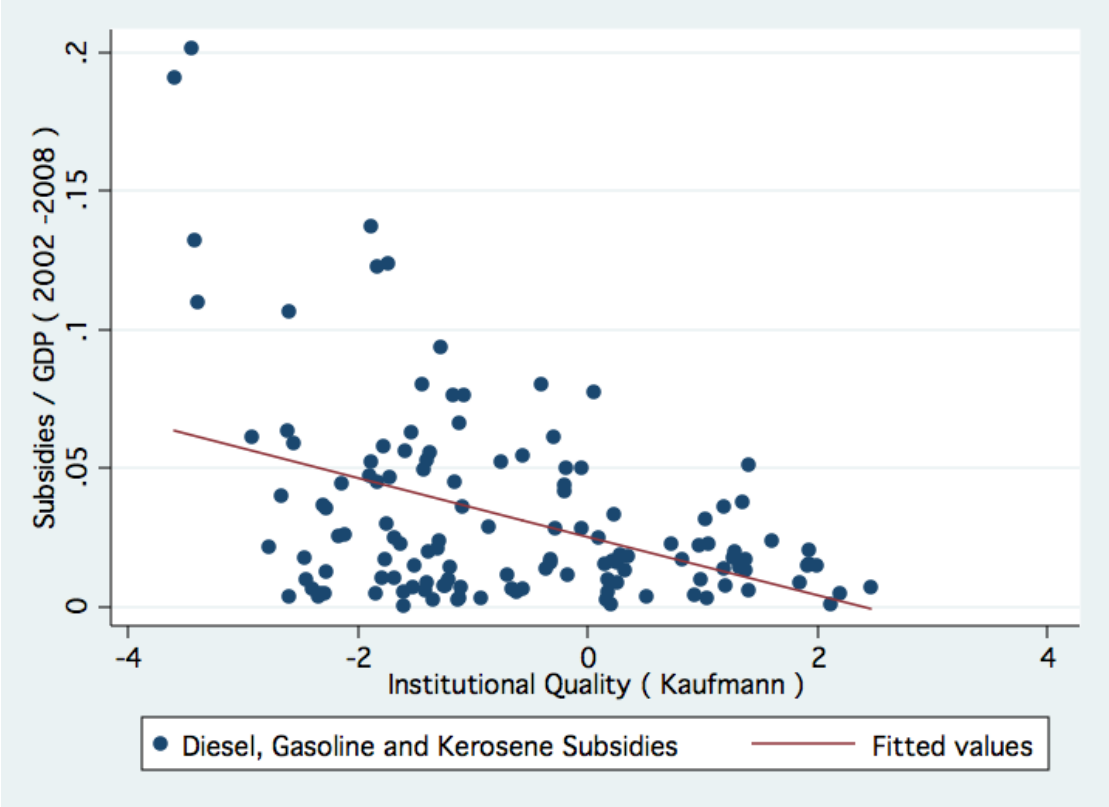


Figure 5: Energy subsidies and Institutional Quality, 2002-2009
Source: Kaufmann and IMF

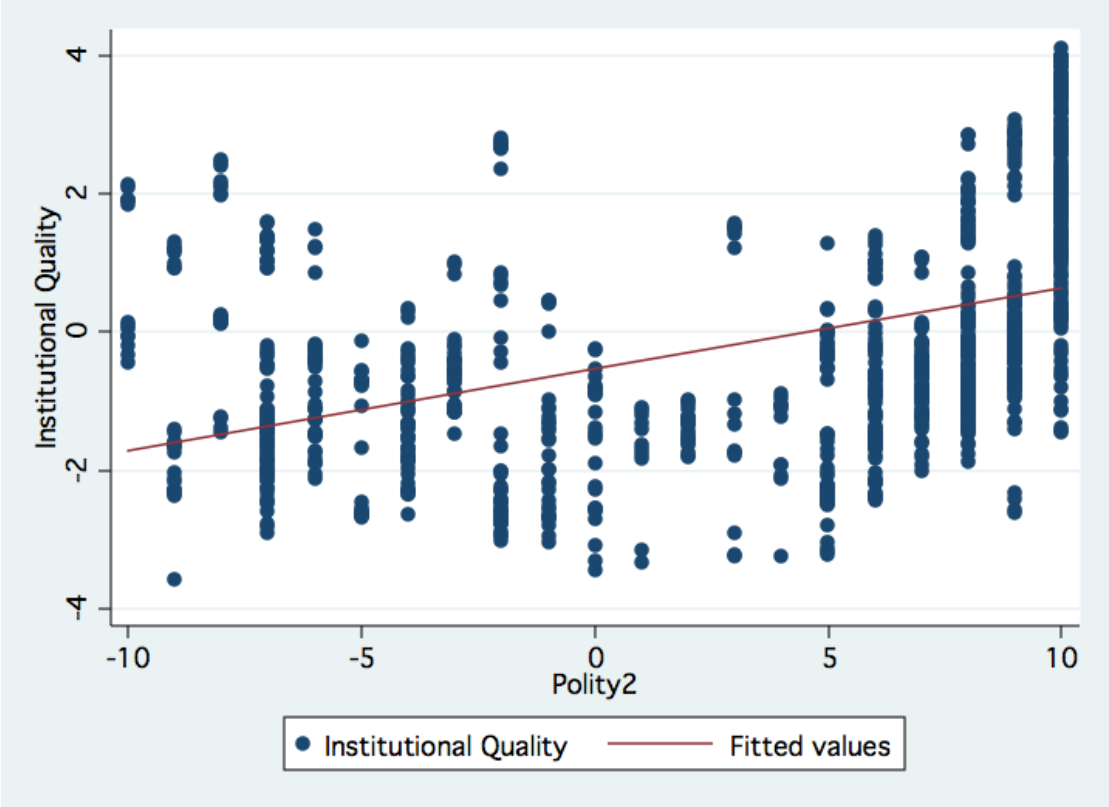


Figure 6: Political Systems and Institutional Quality
Source: Kaufmann and PolityIV

Figure 7: Political players, institutions and constraints in pluralistic systems

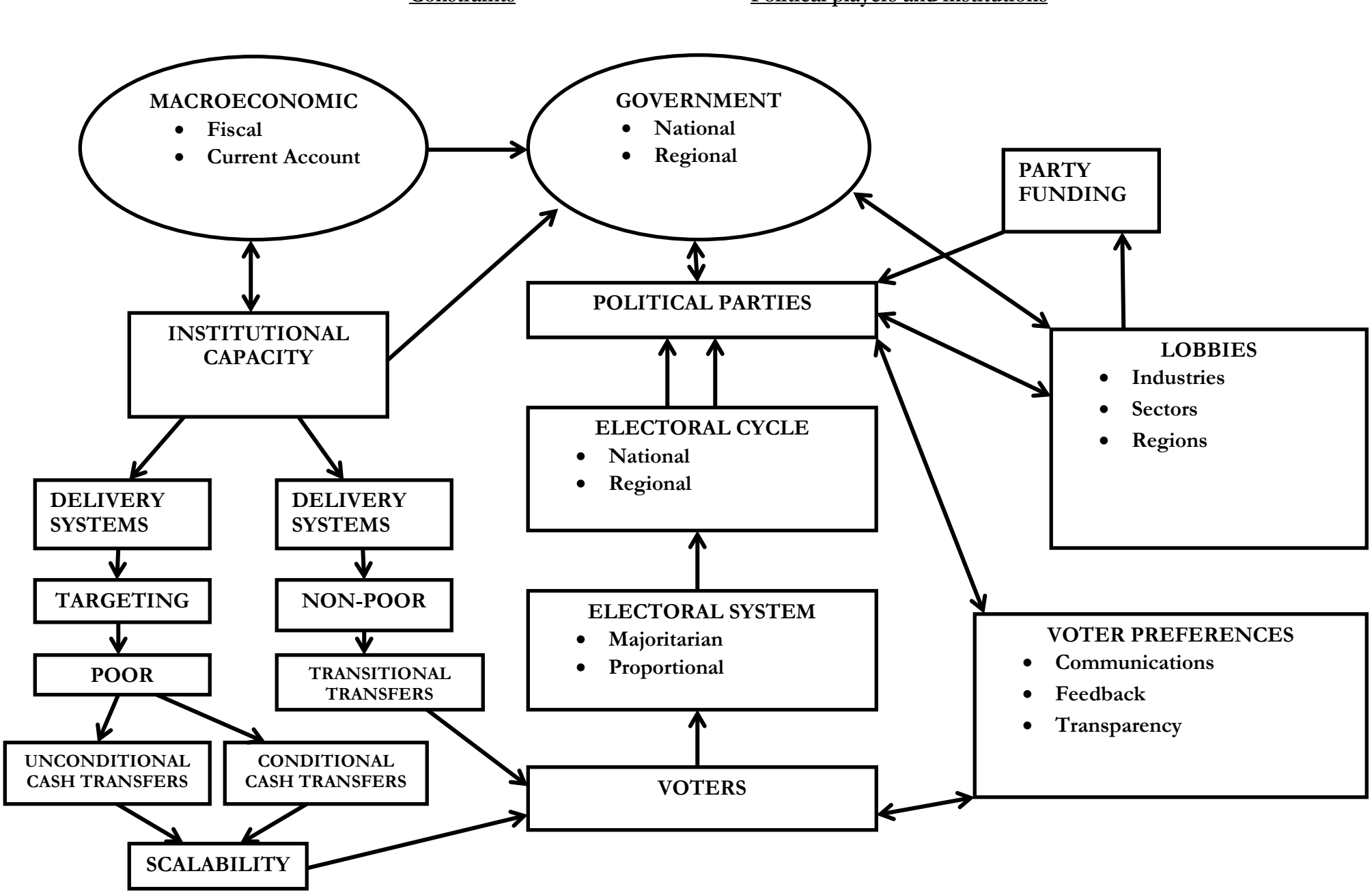
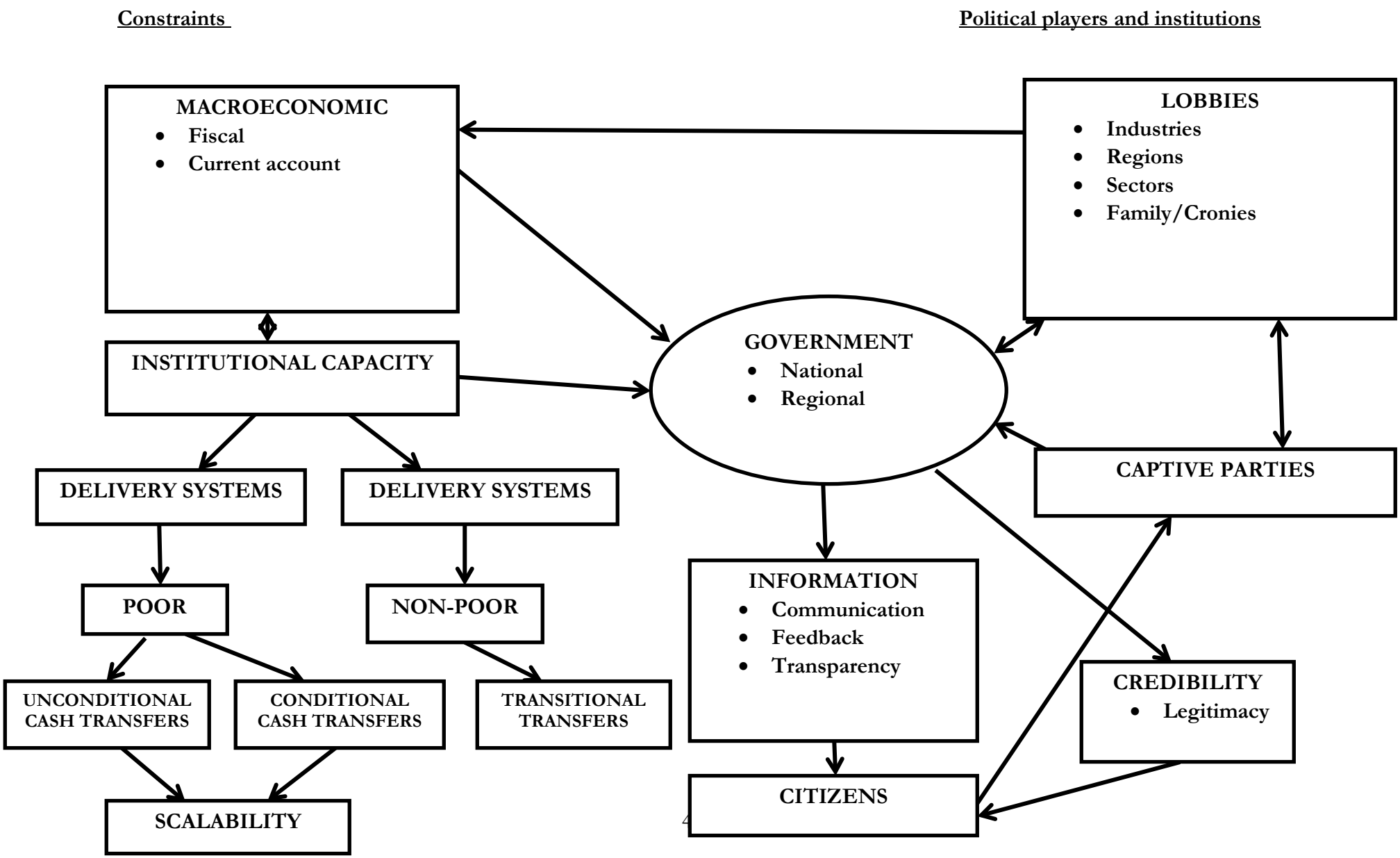


Figure 8. Political players, institutions and constraints in autocracies



`Box 1: Country data checklist

Profile of Energy Subsidies

Type of Energy subsidies (aggregate and by type of energy)
Oil products
Gas
Electricity
Other…..

Instruments
Tariff setting
Price caps
Tax reductions/exemptions
Limits on market access
Consumer cross-subsidies
Other…….

Institutions/Rules for energy pricing
Presidency
Ministries
Independent agency
Rules/timing in energy price setting

Fiscal profile
Fiscal cost of energy subsidies (disaggregated)
Fiscal authority & competences
Federal
Sub-national
Composition of spending (including social sectors)
Composition of revenues

Incidence analysis for energy consumption

Households, firms and sectors

Box 2: Country data checklist
Motivation and Outcomes

Objectives	*Indicators*	*Announced/Actual Outcomes*
1. Temporary Income Buffering		
2. Lobbying/Rent Capture		
3. Sharing national patrimony		
4. Boosting exports		
5. Increasing diversity in supply		
6. Lowering income poverty		
7. Raising access to energy		
(e.g., for particular groups)		
8. Other……		

Box 3: Country data checklist
Political and Institutional Features

Loci & structure of decision making
Centralised/De-centralised
Presidential/Parliamentary
Plurality/Proportional
Turnover/Contestability
Electoral cycle
Autocrat/Court
Political Competition
Political Participation
Judiciary independence
Party funding

Institutional capacity & coverage
Transfer programmes
Conditional Cash Transfers
Unconditional Cash Transfers
Labour Market programmes
Unemployment insurance
Severance
Training
Public employment programmes