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# Fuel Price Policies

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# 1 Policies, Subsidies, Taxation

2015

## **Economic and environmental impacts of energy subsidy reform and oil price shock on the Malaysian transport sector**

This study employs a multi-sector computable general equilibrium model to investigate the long-run impacts of three scenarios, namely high prices of petroleum products, energy subsidy reform and the combine of both, on the Malaysian transport sector. The long-run simulation results suggest that all shocks are beneficial for the entire economy because of the increase in real GDP and investment. The shocks encourage the reallocation of resources and therefore induce disparities in sectoral adjustments. All transport sectors, except water transport, gain from high petroleum prices due to the increase in their domestic output, domestic sales and exports, while they lose from the energy subsidy reform and the combined scenario. The shocks lead to significant changes in travel behaviour of all household types through a change in their use of transport sub-sectors. The combined scenario followed by the high petroleum price shock greatly reduces energy consumption and emissions of all air pollutants in the transport sectors. These findings enhance our understanding of the transport impact of oil price shocks and energy subsidy reform and should be of much interest to scholars, corporate executives, travel agencies, regulators, and policy makers.

<http://www.sciencedirect.com/science/article/pii/S2214367X14000301>

## **Measuring Fossil Fuel Subsidies**

The current environment of low energy prices offers a window of opportunity to reform fossil fuel subsidies (FFSs). Carefully prepared FFS reforms could lead to more robust fiscal positions and contribute to potential growth through a reduction in economic distortions and the mitigation of climate change due to lower CO<sub>2</sub>-emissions. While advanced economies have mostly phased out generalized consumer FFSs, these are still prevalent in the developing world. However another type of subsidization, i.e. the under taxation of fossil fuels relative to economically optimal levels, is widespread in developed and developing countries alike. The G20 effort to advance FFS reform suffers from the lack of an established definition of what constitutes a subsidy, which makes the assessment of public support and cross-country comparison very difficult. Based on the different available methodologies, this Economic Brief aims at shedding some light on the magnitude and allocation of subsidies across fossil fuels and across regions.

[http://climateobserver.org/wp-content/uploads/2015/05/EC\\_measuring-fossil-fuel-subsidies-2015.pdf](http://climateobserver.org/wp-content/uploads/2015/05/EC_measuring-fossil-fuel-subsidies-2015.pdf)

## **Mind the Gap; A Review on Fossil-Fuel Subsidy Reform and Social Welfare in Indonesia**

Fossil-fuel subsidies have been a major burden on the Indonesian economy for the last 10 years and any attempt to reform the subsidy has been opposed by members of the public. This study reviews the literature on the nature of fossil-fuel subsidies and their impact on the Indonesian economy. It aims to identify the various strategies that have been developed to reform the subsidy and to identify research gaps that may be filled by future studies. The proponents of fuel subsidies argue that subsidies will support economic growth, poverty reduction and promote energy security, however, evidence from various studies, which have been conducted in Indonesia, suggest otherwise. Studies in the downstream oil sub-sector have been conducted quite extensively, however, substantial research gap was found for upstream and middle stream oil sub-sectors.

[http://papers.ssrn.com/sol3/Papers.cfm?abstract\\_id=2591212](http://papers.ssrn.com/sol3/Papers.cfm?abstract_id=2591212)

## **Fossil-Fuel Subsidies and Climate Change: Options for policy-makers within their Intended Nationally Determined Contributions**

In 2014 almost 30 countries, including Egypt, Indonesia and India, delivered some form of fossil-fuel subsidy reform (FFSR). Current low oil prices make the removal of consumer fossil-fuel subsidies to the public easier because, depending on the level of subsidies, pass-through costs to the consumer are lowered. As a result, many countries that maintain subsidies to oil, gas, diesel, coal and electricity generated from such fuels will be considering or undergoing reform in the near future. Removal of fossil-fuel subsidies leads to domestic national emissions reductions in greenhouse gases (GHGs). Parties can use the opportunity, around current and planned reforms, and include such plans and expected emissions reduction estimates within their Intended Nationally Determined Contributions (INDCs). This paper looks at research concerning the removal of fossil fuel subsidies and the implications for GHG emissions. It then outlines a process for countries to include FFSR and emission reductions in their INDCs and proposes actions for policy-makers to support a United Nations Framework Convention on Climate Change (UNFCCC) agreement in 2015.

[http://www.iisd.org/gsi/sites/default/files/FFS\\_Climate.pdf](http://www.iisd.org/gsi/sites/default/files/FFS_Climate.pdf)

**Recent Developments in Egypt’s Fuel Subsidy Reform Process**

In July 2014, Egypt introduced long-awaited energy subsidy cuts. These had been in the pipeline for over five years, but repeatedly delayed by political instability. Their announcement was therefore seen as a sign of consolidation by the new President, Abdel-Fattah al-Sisi, as well as a positive signal to external investors. With energy subsidies habitually driving a large, structural fiscal deficit, and constant problems of shortages, low fuel and electricity prices were widely seen as a luxury that Egypt could no longer afford. The most significant step was the 64 per cent hike in diesel prices, but similar increases affected electricity and a wide range of refined products—the most notable exclusion being heavily subsidized liquefied petroleum gas (LPG). Moreover, the subsidy reductions were set out as the first step in a five-year program to eliminate energy subsidies entirely (again, excluding LPG). This paper seeks to outline the background to Egypt’s move, assess its implementation and the public response, and to analyse future probabilities. It concludes by drawing out lessons for other countries facing similar pressures.

[http://search.iisd.org/gsi/sites/default/files/ffs\\_egypt\\_lessonslearned.pdf](http://search.iisd.org/gsi/sites/default/files/ffs_egypt_lessonslearned.pdf)

**Energy Subsidies Reform in Jordan : Welfare Implications of Different Scenarios**

As the Arab Spring unfolded and political unrest spread across the Arab world, Jordan faced an adverse economy as well. Fundamental to the economic challenge was high and rising energy prices, already heavily subsidized for consumers. With the government intent on staving off emerging political unrest through a series of measures, buffering consumers from increased energy prices being a key action, fiscal costs mounted. By 2012, subsidies on petroleum products alone were about 2.8 percent of GDP and 8.8 percent of government expenditures. At the same time, political unrest disrupted the supply of natural gas from Egypt and Jordan abruptly had to switch to using imported oil products (heavy fuel oil and diesel) to produce electricity. Consequently, the cost of producing electricity increased several folds. As the increased cost was not passed on to the consumers, National Electric Power company (NEPCO), bore all the increases in fuel prices and accumulate debt as a result. At approximately 17 percent of government expenditures and 5.5 percent of GDP in 2011, this was twice the amount of the petroleum subsidies. The chapter is organized as follows. Section two traces the evolution of subsidies in Jordan in recent times. The distributional impacts of reform would depend on how important the subsidized items are to consumers in terms of their expenditures on those items. Section three discusses this question from the perspective of richer and poorer households. The distributional impacts of reform would of course not only depend on how much consumers spend on the subsidized items but also on the extent of price changes. Sections four and five simulate direct and indirect impacts of potential reform scenarios across the income distribution. From this discussion, in section six the chapter moves onto considering how reforms are weighed down by vexing political economy constraints. In MENA countries, universal subsidies have been in place as part of the government’s role in ensuring stability in the lives of the people and doing away with them is not straightforward.

<https://wdronline.worldbank.com/handle/10986/22051>

**Indonesia Energy Subsidy Review**

This second edition of the Indonesia Energy Subsidy Review outlines the latest economic and policy developments that have affected Indonesia’s subsidized energy markets. Part One features a roundup of information on fuel subsidy expenditure and policy, including State Budget Revision 2014, the impacts that the Indonesian electoral cycle has had upon policy and the dramatic policy changes that have taken place in November 2014 and January 2015.

[http://www.iisd.org/gsi/sites/default/files/ffs\\_indonesia\\_reviewi2v1\\_english.pdf](http://www.iisd.org/gsi/sites/default/files/ffs_indonesia_reviewi2v1_english.pdf)

**An Input to Indonesian Fuel Price System Reforms: A review of international experiences with fuel pricing systems**

In January 2015, the Indonesian government introduced a new pricing system for gasoline and diesel fuel. The system is intended to end wasteful spending on fuel subsidies by passing through international oil price increases into domestic fuel prices. This will result in large fiscal savings—IDR 195 trillion (US\$ 15.6 billion) alone was saved in State Budget Revision 2015, allowing for a major injection of funds into infrastructure. But it will also result in higher average prices for Indonesian consumers. Going forward, will the government be able to continue passing through price changes at the same time as safeguarding the interests of consumers, particularly if world oil prices return to past highs? This paper reviews international experience to compare how other countries have dealt with the economic and political challenge of fuel pricing, and to identify what lessons this might provide for strengthening and maintaining Indonesia’s new pricing mechanism and helping consumers cope with price volatility.

[http://www.iisd.org/gsi/sites/default/files/ffs\\_indonesia\\_pricing.pdf](http://www.iisd.org/gsi/sites/default/files/ffs_indonesia_pricing.pdf)

2015

**Estimating the Size of External Effects of Energy Subsidies**

It is widely accepted that the costs of under-pricing energy are large, whether in advanced or developing countries. This paper explores how large these costs can be by focussing on the size of the external effects that energy subsidies in particular generate in two important sectors – transport and agriculture – in two MENA countries, Egypt (transport) and Yemen (agriculture). Our focus is mainly on the costs associated with congestion and pollution as well the impact of under-priced energy for depletion of scarce water resources including through crop selection. Quantifying the size of external effects in developing countries has received relatively little analytical attention, although there is a significant body of literature for the advanced world. By building on earlier research, as well as employing the UN ForFITS model we are able to provide indicative estimates of the external costs of energy subsidies, as manifested in congestion and pollution. Our estimates using simulations indicate that these costs could be materially reduced by elimination or reduction of energy subsidies. We are also able to describe the impact of energy subsidies on water consumption in a region where water resources are particularly limited. As such, our findings provide further evidence of the adverse and significant consequences of subsidising energy.

[http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2575045](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2575045)

**Fossil fuel subsidies : approaches and valuation**

Numbers ranging from half a trillion to two trillion dollars have been cited in recent years for global subsidies for fossil fuels. How are these figures calculated and why are they so different? The most commonly used methods for measuring subsidies are the price-gap approach -- quantifying the gap between free-market reference prices and the prices charged to consumers -- the inventory approach, which constructs an inventory of government actions benefiting production and consumption of fossil fuels. Practitioners are not faced with two choices. The two methods are complementary and should be used together -- price gaps cause distortions throughout the economy and quantification is needed for improving pricing policies; an inventory is useful for examining budgetary allocation. An inventory based on a full accounting framework for producer and consumer support estimates in fact captures price gaps as market transfers to producers or consumers. Differences in subsidy valuation arise from assumptions made to compensate for missing data and the scope of subsidy measurement. Having a common understanding of terms and standardizing calculation methods would go a long way in enabling comparison of subsidies across countries and sectors, benchmarking pricing, and assessing subsidy policies. Subsidy measurement should not be viewed as a one-off exercise to inform subsidy reform strategies. Just as subsidy reform in many countries does not have a clear end but is a continuous process of adjustment, so too is subsidy tracking. Devoting resources to data collection and analysis to track subsidies on a continuous basis can bring rich dividends by increasing transparency and enabling informed decisions.

<https://ideas.repec.org/p/wbk/wbrwps/7220.html>

**How Large Are Global Energy Subsidies?**

This paper provides a comprehensive, updated picture of energy subsidies at the global and regional levels. It focuses on the broad notion of post-tax energy subsidies, which arise when consumer prices are below supply costs plus a tax to reflect environmental damage and an additional tax applied to all consumption goods to raise government revenues. Post-tax energy subsidies are dramatically higher than previously estimated and are projected to remain high. These subsidies primarily reflect underpricing from a domestic (rather than global) perspective, so that unilateral price reform is in countries' own interests. The potential fiscal, environmental, and welfare impacts of energy subsidy reform are substantial.

<https://www.imf.org/external/pubs/ft/wp/2015/wp15105.pdf>

**Indonesia: Modelling of distributional impacts of energy subsidy reforms**

The authors of this OECD working paper assess the impacts of energy subsidy reforms with regard to different indicators, such as national GDP (macroeconomic level), changes in CO2 emissions (environmental level) and household income (distributional level). The analysis is based on the example of Indonesia, where the national government implemented a policy of a gradual phase out of energy consumption subsidies until 2020.

[http://www.oecd-ilibrary.org/environment/modelling-of-distributional-impacts-of-energy-subsidy-reforms\\_5js4k0scrq5-en](http://www.oecd-ilibrary.org/environment/modelling-of-distributional-impacts-of-energy-subsidy-reforms_5js4k0scrq5-en)

**Energy Subsidies in Latin America and the Caribbean: Stocktaking and Policy Challenges**

The paper overviews country experience with subsidy reform, drawing lessons.

<http://www.imf.org/external/pubs/cat/longres.aspx?sk=42708.0>

2015

**Taxing Fossil Fuels under Speculative Storage**

This paper investigates the mechanisms through which environmental taxes on fossil fuel usage can affect the main macroeconomic variables in the short-run. We concentrate on a particular mechanism: speculative storage. The existence of forward-looking speculators in the model improves the effectiveness of tax policies in reducing fossil fuel usage. Improved policy effectiveness, however, is costly: it drives inflation and interest rates up, while impeding output. Based on this trade-off, we seek an answer to the question how monetary policy should interact with environmental tax policies in our DSGE model of fossil fuel storage.

<http://www.imf.org/external/pubs/cat/longres.aspx?sk=42535.0>

**Energy Pricing, Energy Supply and FDI Competitiveness in Viet Nam: An Assessment of Foreign Investor Sentiment**

This report discusses the issues of energy supply and pricing issues and provides recommendations for the design of energy policy that addresses, in particular, the concerns and interests of FDI investors in Viet Nam in this sphere. In order to assess the impact of energy pricing and energy supply reforms on foreign direct investment decisions and to understand the needs and concerns of foreign businesses with regards to energy supply and reliability in Viet Nam, considerable new primary research was undertaken.

[https://www.iisd.org/GSI/sites/default/files/ffs\\_vietnam\\_fdi.pdf](https://www.iisd.org/GSI/sites/default/files/ffs_vietnam_fdi.pdf)

**Impacts of Energy Subsidy Reform on Micro, Small And Medium-Sized Enterprises (MSMEs) and their Adjustment Strategies**

This study provides an analysis of the impacts of energy price increases caused by subsidy removal on MSMEs in Indonesia. It surveys 193 MSMEs in two groups of manufacturing industries (namely the food and beverages industry and textile and garment industry), and in several other sectors, namely retail, food and drink stalls and services. It finds that indirect impacts of energy price increases have the most serious effects on MSMEs: higher transportation costs (especially land transportation), higher prices of raw materials, and higher inflation. It recommends that the most effective way to safeguard MSMEs from the impacts of reform are to mitigate the indirect effects of any energy price increases, with a particular focus on controlling inflation. Should the government wish to provide compensation mechanisms to support SMEs, the interventions most favoured by SMEs are policies to help them improve their market access and credit access.

[http://www.iisd.org/gsi/sites/default/files/ffs\\_indonesia\\_msme.pdf](http://www.iisd.org/gsi/sites/default/files/ffs_indonesia_msme.pdf)

**The Role of Information in Perception of Fossil-Fuel Subsidy Reform: Evidence from Indonesia**

This paper analyzes household perceptions—and the role that information can play in defining those perceptions—on fossil-fuel subsidy reforms in Indonesia. The data used in this study were collected by Lembaga Survei Indonesia (LSI), based on an August 2014 survey that involved 2,899 respondents in 34 Indonesian provinces. Logistic and multinomial logistic regressions of the data show that: (1) Those who live outside Java tend to be more receptive to the idea of subsidy reforms; (2) Those owning motorcycles and cars are more likely to oppose reform; (3) Providing information about the state budget and the personal impact of the subsidy was able to change a share of respondents' opinions, from opposition to support of the reform.

[http://www.iisd.org/gsi/sites/default/files/ffs\\_indonesia\\_perception.pdf](http://www.iisd.org/gsi/sites/default/files/ffs_indonesia_perception.pdf)

**Diesel Subsidy Reform in India: Lessons Learned**

The Indian government's declaration of a formal end to diesel price regulation in October 2014 marked the culmination of a two-year process of price reform. This report investigates lessons learned.

[http://www.iisd.org/gsi/sites/default/files/ffsr\\_india\\_lessons%20learned\\_may\\_2015.pdf](http://www.iisd.org/gsi/sites/default/files/ffsr_india_lessons%20learned_may_2015.pdf)

2014

**Fossil-Fuel Subsidy Reform: Maximizing Contributions to Emissions Mitigation**

At this event, moderated by Jo Tyndall, Climate Change Ambassador, New Zealand, panellists outlined: support available to countries undergoing subsidy reform; opportunities to strengthen the process and direct savings towards investment in sustainable energy systems; and how countries can utilize mitigation of emissions from subsidy reform within the UNFCCC process, including through post-2020 national contributions. The Friends of Fossil Fuel Subsidy Reform then launched a GSI publication on the Impact of Fossil Fuel Subsidies on Renewable Electricity Generation.

<http://www.iisd.ca/videos/climate/cop20/10dec-maximizing-contributions-to-emissions-mitigation-from-fossil-fuel-subsidy-reform/>

2014

### **Assessment and Implications of Rationalizing and Phasing Out Fossil Fuel Subsidies: Finalization Conference Report**

This publication presents preliminary findings of an ADB technical assistance study on fossil fuel subsidy reform in India, Indonesia, and Thailand, and the feedback at a conference from peer reviewers, policy makers, and experts in economics, energy, environment and poverty issues. The study quantifies fossil-fuel subsidies, analyses the economic, energy, and environmental impacts of subsidy reform, and discusses social welfare measures to mitigate the negative impacts of reforms on households.

<http://www.adb.org/publications/reta-7834-finalization-conference-report>

### **The fossil fuel bailout: G20 subsidies for oil, gas and coal exploration**

This report documents, for the first time, the scale and structure of fossil fuel exploration subsidies in the G20 countries.

<http://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/9234.pdf>

### **Fossil fuel subsidies in developing countries: a review of support to reform processes**

This new paper aims to provide a review of the organisations and governments involved in supporting other countries to reform their fossil fuel subsidies and the approaches being undertaken.

<http://www.odi.org/publications/8711-fossil-fuel-subsidies-developing-countries>

### **Financing the Sustainable Development Goals Through Fossil-fuel Subsidy Reform: Opportunities in Southeast**

#### **Asia, India and China**

Consumer fossil-fuel subsidies across Emerging and Developing Asia totalled US\$104 billion in 2011 close to that of the total Organisation for Economic Co-operation and Development (OECD) aid budget (US\$134 billion) (OECD, 2014). This represents a significant stream of potential finance and resources within the region that could be redirected away from subsidies and towards broader sustainable development goals. In addition, this sum reflects neither the significant opportunity costs nations bear by not investing in other sectors of society (such as infrastructure, health and education), nor the cost of wider impacts on society through the ongoing presence of fossil-fuel subsidies on other sustainable development goals (SDGs) (e.g., carbon emissions, local air pollution, reduced investment in renewables and energy efficiency). Taken together, the process of organized fossil fuel subsidy reform represents a significant opportunity both to fund the SDGs and achieve them in the medium term. The SDGs should reflect this opportunity and include stronger language around the process of reform in order to encourage countries to examine and reform subsidies to fossil fuels.

[http://www.iisd.org/gsi/sites/default/files/financing-sdgs-fossil-fuel-subsidy-reform-southeast-asian-india-china\(6\).pdf](http://www.iisd.org/gsi/sites/default/files/financing-sdgs-fossil-fuel-subsidy-reform-southeast-asian-india-china(6).pdf)

### **European Commission Calculates EU Energy Costs and Subsidies**

The European Commission has released a report that quantifies public interventions in energy markets. As the first study to provide data on energy costs and subsidies for all 28 EU member States and power generation technologies, the report seeks to enhance understanding on the functioning of energy markets and the size and effect of government interventions across the Union.

<http://climate-liisd.org/news/european-commission-calculates-eu-energy-costs-and-subsidies/>

### **FOSSIL FUEL SUBSIDIES A change in direction?**

In this infographic, IISD's Global Subsidies Initiative provides an overview and analysis of the fossil fuel subsidy component of this year's energy outlook.

[http://www.iisd.org/gsi/sites/default/files/ffs\\_weo2014\\_infographic.pdf](http://www.iisd.org/gsi/sites/default/files/ffs_weo2014_infographic.pdf)

### **World Bank Links Energy Subsidy Reform to Job Creation in MENA Region**

A study by the World Bank finds evidence of a positive relationship between fuel prices, per capita gross domestic product (GDP) growth and job creation, and encourages the governments of the Middle East and North Africa (MENA) region to cut energy subsidies in order to build dynamic, employment-intensive economies. The study, titled 'Corrosive Subsidies,' also projects economic growth in the MENA transition countries to be hampered by macroeconomic imbalances and unfinished subsidy reform.

<http://climate-liisd.org/news/world-bank-links-energy-subsidy-reform-to-job-creation-in-mena-region/>

2014

**The long-run macroeconomic impacts of fuel subsidies**

Many developing and emerging market countries have subsidies on fuel products. Using a small open economy model with a non-traded sector, I show how these subsidies impact the steady state levels of macroeconomic aggregates such as consumption, labour supply, and aggregate welfare. These subsidies can lead to crowding out of non-oil consumption, inefficient inter-sectoral allocations of labour, and other distortions in macroeconomic variables. Across steady states, aggregate welfare is reduced by these subsidies. This result holds for a country with no oil production and for a net exporter of oil. The distortions in relative prices introduced by the subsidy create most of the welfare losses. How the subsidy is financed is of secondary importance. Aggregate welfare is significantly higher if the subsidies are replaced by lump-sum transfers of equal value.

<http://www.sciencedirect.com/science/article/pii/S0304387813001703>

**Impacts of increasing renewable energy subsidies and phasing out fossil fuel subsidies in China**

Subsidies to fossil-fuel consumption have made China's energy system fragile and unsustainable. It is necessary for China to reform fossil-fuel subsidies and reflect the resource cost and environmental cost in energy prices. Considering the life-cycle external costs, this paper estimates the scale of fossil-fuel subsidy and the true cost of renewable energy in 2010 and evaluates impacts of increasing renewable energy subsidies and phasing out fossil fuel subsidies on macro-economy and energy system in China based on scenario analysis. Simulation results show that the negative impacts on economic growth can be reduced from 4.460% to 0.432%, if only 10% of fossil fuel subsidies were removed. Increasing subsidies for renewable energy has positive impacts on macroeconomic variables. Although the economic benefits per unit of subsidies for renewable energy are lower than those for fossil fuels by 0.06–0.19 CNY, the revenue gap can be narrowed by shifting more subsidies from fossil fuels to renewables. Increasing subsidies for renewable energy helps optimize China's energy system in three ways: the first is making energy consumption structure cleaner; the second is improving energy efficiency; and the third is addressing the problem of imbalanced distribution and consumption of energy.

<http://www.sciencedirect.com/science/article/pii/S1364032114003293>

**Impacts of removing fuel import subsidies in Nigeria on poverty**

The petroleum sector contributes substantially to the Nigerian economy; however, the potential benefits are diminished due to the existence of significant subsidies on imports of petroleum products. Subsidies on imported petroleum products are considered to be an important instrument for keeping fuel prices, and hence the cost of living, low. The costs of these subsidies, however, has risen dramatically in recent years due to increased volatility in world petroleum and petroleum product prices and increased illegal exportation of subsidized petroleum products into neighbouring countries. Removing the subsidy on fuel is one of the most contentious socio-economic policy issues in Nigeria today. In this paper, an economy-wide framework is used to identify the impact of removing the fuel subsidy on the Nigerian economy and investigates how alternative policies might be used to meet socio-economic objectives related to fuel subsidies. The results show that while a reduction in the subsidy generally results in an increase in Nigerian GDP, it can have a detrimental impact on household income, and in particular on poor households. Accompanying the subsidy reduction with income transfers aimed at poor households or domestic production of petroleum products can alleviate the negative impacts on household income. <http://www.sciencedirect.com/science/article/pii/S0301421514000950>

**Estimating the impact on poverty of Ghana's fuel subsidy reform and a mitigating response**

Governments across Africa have faced increasing challenges to maintain fuel subsidies over recent years. In Ghana, in the face of a near 12% fiscal deficit in 2012, their burgeoning cost has drawn attention to questions of fiscal sustainability as well as their overall efficiency and effectiveness. In 2013, the Ghanaian Government would have spent cost 2.4 billion GHS (approximately 1.2 billion USD) on fuel subsidies, equalling 3.2% of GDP and more than half of Ghana's allocation to the entire education sector. Fuel subsidies around the world have been proven to be generally regressive, benefitting largely the richest group with very little reaching those living below the poverty line. In Ghana, this paper finds that almost 78% of fuel subsidies benefited the wealthiest group, with less than 3% of subsidy benefits reaching the poorest quintile. The richest quintile of the population received 15.86 GHS per year from the fuel subsidies per capita, while the poorest received just 2.23 GHS per capita. In early 2013 the Ghanaian Government introduced the removal of fuel subsidies over the first half of the year. Prices of petrol, kerosene, diesel and LPG saw rises of between 15% and 50%, until prices reached their market level in mid-September 2013. Following the subsidy removal and before the 2013 budget was finalised, the Government welcomed the initiation of this research in order to assess the impact of the reform on the poor and to ensure a mitigating response in the form of a social safety net. Based on recent studies of social protection in Ghana this paper identifies the national cash transfer programme, LEAP, as being well targeted, having positive impact, and functioning at national scale with immediate plans for expansion.

[http://www.unicef.org/ghana/1389903137\\_PEP\\_UNICEF\\_Ghana\\_WP\\_201\\_public.pdf](http://www.unicef.org/ghana/1389903137_PEP_UNICEF_Ghana_WP_201_public.pdf)



2014

**Fossil fuel subsidies in developing countries**

The aim of this research is to provide a review of the organisations and governments involved in supporting other countries to reform their fossil fuel subsidies and the approaches being undertaken. It builds a comprehensive understanding of which actors are working in the area of FFSR, what in-country advice and technical assistance is being proposed, planned, and undertaken, and finally to identify areas for strategic involvement, including through the use of climate finance.

<http://admin.indiaenvironmentportal.org.in/files/file/Fossil-fuel%20subsidy%20reform.pdf>

**Impacts of energy subsidy reform on the Malaysian economy and transportation sector**

Malaysia is paying a high level of subsidies on the consumption of energy (about 5% of its GDP). Therefore, reforming the energy subsidies, as planned by the government, will have a significant impact on household welfare and energy-intensive sectors, such as the transport sector. This study employs a computable general equilibrium (CGE) model to highlight the transmission channels through which the removal of energy subsidies affects the domestic economy. The findings show that the shock increases real GDP and real investment, while decreasing Malaysian total exports and imports. The removal of energy subsidies also decreases the aggregate energy demand, and, consequently, decreases the level of carbon emissions in the Malaysian economy. In addition, households experience significant falls in their consumption and welfare. The transport sector is significantly influenced through an increase in production costs due to an increase in the prices of intermediate inputs. The total output and total exports of the whole transport sector decrease while its imports increase. In addition, the use of all kinds of transport by households decreases significantly. The Malaysian energy subsidy reform, leads to an initial decrease in CO<sub>2</sub> emissions and demand for electricity, gas, and petroleum products in the entire transport sector.

<http://www.sciencedirect.com/science/article/pii/S030142151400202X>

**Spatial Distribution of Fossil Fuel Subsidies in India**

This brief shows how fossil-fuel subsidies contribute not only to national-level social disparities but also to create highly regressive and inequitable distribution of benefits between different states and Union Territories, with subsidy transfers disproportionately accruing to consumers and businesses in the most developed parts of India.

[http://www.iisd.org/GSI/sites/default/files/ffs\\_india\\_spatial.pdf](http://www.iisd.org/GSI/sites/default/files/ffs_india_spatial.pdf)

**The incidence of energy policy reform: fossil fuel subsidies in Southeast Asia**

Most studies of the distributional and welfare incidence of energy policies focus on consumer expenditures, and the most prominent analytical models do not fit well with the small, open economy model suitable for most developing countries. In this paper we begin construction of the supply-side of an analytical model of a small open economy with heterogeneous industries and sources of household income. We examine the impacts of fuel subsidies of taxes on factor prices, product prices, and household income distribution. We then use our model's predictions, combined with Vietnamese data, to quantify the importance of factor market impacts in determining the distributional incidence of energy taxes or subsidies. Neglecting the factor market impacts of an energy policy change can result in misleading implications for income distribution and economic welfare. We also highlight the large opportunity costs associated with using government revenues for fossil fuel subsidies instead of other development goals, such as spending on cash transfers, education, infrastructure, or health.

<http://www.webmeets.com/files/papers/wcere/2014/1780/Coxhead-Grainger-EnergySub-30April.pdf>

**Lessons Learned: Malaysia's 2013 Fuel Subsidy Reform**

On September 2, 2013, Malaysia's Prime Minister, Datuk Seri Najib Razak announced that the price of diesel and RON95 petrol would increase by 20 sen (US\$0.06) overnight, and that cash transfers would be increased to mitigate the impact on the poor. Subsidies for sugar were reduced at the same time. The partial reform was largely a response to Malaysia's fiscal deficit and rising national debt. It was met with varied reactions from different stakeholders. Proponents argued that it was necessary to reign in the deficit and that Malaysia's subsidy system is skewed in favour of high-income groups. Opponents argued that it would have greatest impact on low-income groups, through inflation, and that subsidy rationalization needs to be accompanied by structural and governance reforms, such as improvements to the public transport system and greater government transparency to plug financial leakages. This paper provides a brief overview of the reduction in fossil-fuel subsidies. It begins with the context for change, and then explains how prices were altered, what measures were taken to manage impacts and how the government tried to build support for its actions. It concludes with a series of lessons that other countries might draw from these experiences.

[http://www.iisd.org/GSI/sites/default/files/ffs\\_malaysia\\_lessonslearned.pdf](http://www.iisd.org/GSI/sites/default/files/ffs_malaysia_lessonslearned.pdf)

2014

**US biofuels subsidies and CO2 emissions: An empirical test for a weak and a strong green paradox**

Using energy data over the period 1981–2011 we find that US biofuels subsidies and production have provided a perverse incentive for US fossil fuel producers to increase their rate of extraction that has generated a weak green paradox. Further, in the short-run if the reduction in the CO2 emissions from a one-to-one substitution between biofuels and fossil fuels is less than 26 percent, or less than 57 percent if long run effect is taken into account, then US biofuels production is likely to have resulted in a strong green paradox. These results indicate that subsidies for first generation biofuels, which yield a low level of per unit CO2 emission reduction compared to fossil fuels, might have contributed to additional net CO2 emissions over the study period.

<http://www.sciencedirect.com/science/article/pii/S0301421513011129>

**How Effective are US Renewable Energy Subsidies in Cutting Greenhouse Gases?**

The federal tax code provides preferential treatment for the production and use of renewable energy. We report estimates of the subsidies' effects on greenhouse gases (GHG) emissions developed in a recent National Research Council (NRC) Report. Due to lack of estimates of the impact of tax provisions on GHG emissions, new modelling studies were commissioned. The studies found, at best, a small impact of subsidies in reducing GHG emissions; in some cases, emissions increased. The NRC report also identified the need to capture the complex interactions among subsidies, pre-existing regulations, and commodity markets.

<http://www.ingentaconnect.com/content/aea/aer/2014/00000104/00000005/art00098>

**Defining And Measuring Energy Subsidies**

Energy subsidies comprise both consumer and producer subsidies. Consumer subsidies arise when the prices paid by consumers, including both firms (intermediate consumption) and households (final consumption), are below supply costs, including transport and distribution costs. Producer subsidies arise when prices are above this level.<sup>1</sup> Where an energy product is internationally traded, such as for petroleum products, the supply cost is based on the international price.<sup>2</sup> For a net importer of fuel products, the supply cost is based on the international price. For a net exporter of fuel products, the supply cost is the overall cost of importing the fuel, whereas for a net exporter, the supply cost represents the forgone revenue, or opportunity cost, from not exporting the product.

[http://www.researchgate.net/publication/261287323\\_DEFINING\\_AND\\_MEASURING\\_ENERGY\\_SUBSIDIES](http://www.researchgate.net/publication/261287323_DEFINING_AND_MEASURING_ENERGY_SUBSIDIES)

**The Adverse Effects of Fossil-Fuel Subsidies in Indonesia**

Subsidizing consumers of petroleum products is a common phenomenon in many developing and emerging economies. The rationale differs, but in most cases the intention is to shield low-income households. Meanwhile, in contrast to its intentions, there is growing evidence that fossil-fuel subsidies fail to protect the poor. Typically, they are found to be ineffective in meeting social objectives and inequitable in that they only benefit high-income households. In addition, fuel subsidization often constitutes a large budgetary burden on government accounts, which in turn implies that resources are diverted away from potential pro-poor programs. Thus, it seems as if fuel subsidies not only fail to protect the poor, but even punish them.

<https://www.duo.uio.no/bitstream/handle/10852/40950/Jul-Roesjoe---Magnus.pdf?sequence=1&isAllowed=y>

**Energy subsidies - Scrap them**

There are moves around the world to get rid of energy subsidies. Here's the best way of going about it. FOR decades, governments from Egypt to Indonesia have subsidised the price of basic fuels. Such programmes often start with noble intentions—to keep down the cost of living for the poor or, in the case of oil-producing countries, to provide a visible example of the benefits of carbon wealth—but they have disastrous consequences, wrecking budgets, distorting economies, harming the environment and, on balance, hurting rather than helping the poor.

<http://www.economist.com/news/leaders/21604170-there-are-moves-around-world-get-rid-energy-subsidies-heres-best-way-going>

**Energy subsidies: Fuelling controversy**

OVER the past year energy subsidies have become a target for politicians on austerity drives. In June Indonesia increased petrol prices by 44% to cut its annual subsidy bill of USD20 billion. More recently Malaysia followed suit, in the hope of filling a budget hole which had reached 4.5% of GDP. It slashed petrol subsidies, and on January 1st household energy bills went up by 15%. Countries such as Egypt and India are considering similar measures to reduce their growing budget deficits; Egypt's is now at 14% of GDP.

[http://www.economist.com/news/finance-and-economics/21593484-economic-case-scraping-fossil-fuel-subsidies-getting-stronger-fuelling?frsc=dg%7Ca&fsrc=scn/tw\\_app\\_ipad](http://www.economist.com/news/finance-and-economics/21593484-economic-case-scraping-fossil-fuel-subsidies-getting-stronger-fuelling?frsc=dg%7Ca&fsrc=scn/tw_app_ipad)

2014

**Dirty little secrets: Inferring fossil-fuel subsidies from patterns in emission intensities**

No comprehensive database of directly measured fossil-fuel subsidies exists at the international or the sub-national level, yet subsidies may be crucial drivers of global carbon emissions. This column describes a novel method for inferring carbon subsidies by examining country-specific patterns in carbon emission-to-output ratios, known as emission intensities. Calculations for 155 nations from 1980-2005 reveal that fossil-fuel price distortions are enormous, increasing, and often hidden. These subsidies contributed importantly to increasing emissions and lower growth.

<http://www.voxeu.org/article/inferred-fossil-fuel-subsidies-new-database>

**Comparison of Fossil-Fuel Subsidy and Support Estimates**

For more information about estimating subsidies, see the GSI's subsidy accounting manual, Subsidy Estimation: A Survey of Current Practice, and the related policy brief, A How-To Guide: Measuring subsidies to fossil-fuel producers.

<http://www.iisd.org/gsi/comparison-fossil-fuel-subsidy-and-support-estimates>

**The Economic Cost of Global Fuel Subsidies**

By 2015, global oil consumption will reach 90 million barrels per day. In part, this high level of consumption reflects the fact that many countries provide subsidies for gasoline and diesel. This paper examines global fuel subsidies using the latest available data from the World Bank, finding that road-sector subsidies for gasoline and diesel totalled USD110 billion in 2012. Pricing fuels below cost is inefficient because it leads to overconsumption. Under baseline assumptions about supply and demand elasticities, the total annual deadweight loss worldwide is USD44 billion. Incorporating external costs increases the economic costs substantially

[http://www.uce3.berkeley.edu/WP\\_069.pdf](http://www.uce3.berkeley.edu/WP_069.pdf)

**Time to change the game - Fossil fuel subsidies and climate**

Fossil fuel subsidies undermine international efforts to avert dangerous climate change and represent a drain on national budgets. They also fail in one of their core objectives: to benefit the poorest. Phasing out fossil fuel subsidies would create a win-win scenario. It would eliminate the perverse incentives that drive up carbon emissions, create price signals for investment in a low-carbon transition and reduce pressure on public finances.

<http://www.odi.org.uk/sites/odi.org.uk/files/odi-assets/publications-opinion-files/8668.pdf>

**At cross-purposes: subsidies and climate compatible investment**

There is widespread consensus that the private sector must be mobilised to support climate-compatible development (CCD). There is also broad acknowledgment, however, that we have only limited information and data on how best to achieve this goal. To date, the discourse on climate finance in general, and on private climate finance (PCF) in particular, has barely acknowledged the use of subsidies as tools to mobilise the private sector.

<http://www.odi.org.uk/sites/odi.org.uk/files/odi-assets/publications-opinion-files/8335.pdf>

2013

**The Long-run Macroeconomic Impacts of Fuel Subsidies**

Many developing and emerging market countries have subsidies on fuel products. Using a small open economy model with a non-traded sector I show how these subsidies impact the steady state levels of macroeconomic aggregates such as consumption, labour supply, and aggregate welfare. These subsidies can lead to crowding out of non-oil consumption, inefficient inter-sectoral allocations of labour, and other distortions in macroeconomic variables.

<http://www.dallasfed.org/assets/documents/research/papers/2013/wp1303.pdf>

**The long-run macroeconomic impacts of fuel subsidies in an oil-importing developing country**

Analytical and numerical results show how the presence of a subsidy on household and firm purchases of oil products distorts long-run macroeconomic aggregates in an oil-importing developing country. Beyond leading to over-consumption of oil products these subsidies also lead to increased labour supply, a distorted emphasis on producing traded goods, and higher real wages. The subsidy also impacts the relative price of non-traded goods, causing it to fall when the non-traded sector is more oil-intensive than the traded sector and vice-versa.

<http://econpapers.repec.org/paper/pramprapa/33823.htm>

2013	<p><b>UNITED STATES: Effects of U.S. Tax Policy on Greenhouse Gas Emissions</b>                  Current federal tax provisions have minimal net effect on greenhouse gas emissions, according to a new report from the National Research Council. The report found that several existing tax subsidies have unexpected effects, and others yield little reduction in greenhouse gas emissions per dollar of revenue loss.  <a href="http://www.nap.edu/catalog.php?record_id=18299">http://www.nap.edu/catalog.php?record_id=18299</a></p>
2012	<p><b>Measuring Global Gasoline and Diesel Price and Income Elasticities</b>                  Price and income elasticities of transport fuel demand have numerous applications. They help forecast increases in fuel consumption as countries get richer, they help develop appropriate tax policies to curtail consumption, help determine how the transport fuel mix might evolve, and show the price response to a fuel disruption. Given their usefulness, it is understandable why hundreds of studies have focused on measuring such elasticities for gasoline and diesel fuel consumption. In this paper, I focus my attention on price and income elasticities in the existing studies to see what can be learned from them. I summarize the elasticities from these historical studies.  <a href="http://www.sciencedirect.com/science/article/pii/S0301421510008797">http://www.sciencedirect.com/science/article/pii/S0301421510008797</a></p>
2011	<p><b>Fuel Taxes vs Fuel Economy: Are Stricter Fuel Economy Standards a Good Idea?</b>                  According to news reports, the Obama administration is talking to automakers about raising the Corporate Average Fuel Economy standard for passenger cars to 56.2 miles per gallon by 2025, more than double the 27.5 MPG in force for the 20 years up to 2010. Economists, even those like myself who favour policies to reduce fuel use, have argued that CAFE standards are a bad idea. Has anything changed to make stricter fuel economy standards look better now than in the past?  <a href="http://oilprice.com/Energy/General/Fuel-Taxes-vs-Fuel-Economy-Are-Stricter-Fuel-Economy-Standards-a-Good-Idea.html">http://oilprice.com/Energy/General/Fuel-Taxes-vs-Fuel-Economy-Are-Stricter-Fuel-Economy-Standards-a-Good-Idea.html</a></p> <p><b>The Myths and Facts of Fossil Fuel Subsidies: A Critique of Existing Studies</b>                  Fossil fuel subsidies are of enormous import to policy-makers and public opinion, making it critical to properly define them. However, traditional methodologies tend to place subsidies in the realm of tax expenditure analysis, presenting a flawed picture. A recent report on government subsidies to the Canadian energy sector prepared for the International Institute for Sustainable Development exemplifies this flawed approach along several dimensions: it is not based on a robust underlying economic framework, it fails to account for complex interactions between tax and royalty systems in existing fiscal policy, and it uses a definition of subsidies that was created for a different purpose.  <a href="http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1940535">http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1940535</a></p>
2010	<p><b>Subsidy Estimation: A Survey of Current Practice</b>                  This technical manual draws together the different subsidy estimation methods that are used and have been published, mainly by intergovernmental organizations and governments.  <a href="http://www.iisd.org/gsi/subsidy-estimation-survey-current-practice">http://www.iisd.org/gsi/subsidy-estimation-survey-current-practice</a></p> <p><b>Measuring Subsidies Using The Price-Gap Approach</b>                  The price-gap approach is one of the most commonly employed methodologies for estimating fossil-fuel subsidies: calculating the difference between the observed price for a fuel against what that price would be without government intervention. This report explains how the price-gap method works, reviews its benefits and limitations, and explores the potential for bias in estimates.  <a href="http://www.iisd.org/gsi/measuring-subsidies-using-price-gap-approach">http://www.iisd.org/gsi/measuring-subsidies-using-price-gap-approach</a></p> <p><b>Corruption and Fraud in Agricultural and Energy Subsidies: Identifying the Key Issues</b>                  Governments appear willing to provide publically funded subsidy programs totalling billions of dollars, but they commit significantly fewer resources to monitor these programs effectively to prevent fraud and or corruption. This policy brief identifies some of the main areas of subsidy policy affected by fraud and corruption, providing examples of some high profile cases.  <a href="http://www.iisd.org/gsi/december-2010-corruption-and-fraud-agricultural-and-energy-subsidies-identifying-key-issue">http://www.iisd.org/gsi/december-2010-corruption-and-fraud-agricultural-and-energy-subsidies-identifying-key-issue</a></p> <p><b>Defining Fossil-Fuel Subsidies for The G-20: Which Approach Is Best?</b>                  The G-20's efforts to progress fossil-fuel subsidy reform have revived an old debate: what is a subsidy? In this policy brief, the GSI recommends a three-step process to define, measure and evaluate subsidies, beginning with a broad definition that covers preferential treatment in all its forms.  <a href="http://www.iisd.org/gsi/march-2010-defining-fossil-fuel-subsidies-g-20-which-approach-best">http://www.iisd.org/gsi/march-2010-defining-fossil-fuel-subsidies-g-20-which-approach-best</a></p>

**A How-to Guide: Measuring Subsidies to Fossil-Fuel Producers**

This policy brief identifies how different types of subsidy can be measured using different methodologies, particularly fossil-fuel producer subsidies. It is the second stage in the GSI's recommended 3-step process for planning subsidy reform: define, measure and evaluate. Where relevant, it refers readers to the GSI's in-depth technical manual, *Subsidy Estimation: A Survey of Current Practice*  
<http://www.iisd.org/gsi/july-2010-how-guide-measuring-subsidies-fossil-fuel-producers>

**Corruption and Fraud in Agricultural and Energy Subsidies: Identifying the Key Issues**

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<http://www.iisd.org/gsi/december-2010-corruption-and-fraud-agricultural-and-energy-subsidies-identifying-key-issue>

**Defining Fossil-Fuel Subsidies for The G-20: Which Approach Is Best?**

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<http://www.iisd.org/gsi/march-2010-defining-fossil-fuel-subsidies-g-20-which-approach-best>

**Petroleum Subsidies on the Rise**

According to a study from the IMF, petroleum subsidies are costly, inequitable and rising, and reducing them could have benefits for the environment.  
<http://www.imf.org/external/pubs/ft/spn/2010/spn1005.pdf>

**Fossil-Fuel Subsidy Phase Out: A review of current gaps and needed changes to achieve success**

The G20 commitment was a positive step in reforming policies that subsidize the oil, gas and coal industries at a time when the world is concurrently trying to scale back emissions that contribute to climate change. This brief highlights a variety of issues that illustrate immediate and future challenges with making the phase out work. The authors evaluated the reporting and reform efforts of the G20, using official documents that were submitted by the members. The purpose of this evaluation was to assess the coverage of existing reporting, identify patterns in arguments countries put forth to exclude policies from reform, and discuss options to increase the chance of the reform effort being successful.  
<http://www.earthtrack.net/documents/g20-fossil-fuel-subsidy-phase-out-review-current-gaps-and-needed-changes-achieve-success>

**The Unequal Benefits of Fuel Subsidies: A Review of Evidence for Developing Countries**

This paper reviews evidence on the impact of fuel subsidy reform on household welfare in developing countries. On average, the burden of subsidy reform is neutrally distributed across income groups; a \$0.25 decrease in the per liter subsidy results in a 6 percent decrease in income for all groups. More than half of this impact arises from the indirect impact on prices of other goods and services consumed by households. Fuel subsidies are a costly approach to protecting the poor due to substantial benefit leakage to higher income groups. In absolute terms, the top income quintile captures six times more in subsidies than the bottom. Issues that need to be addressed when undertaking subsidy reform are also discussed, including the need for a new approach to fuel pricing in many countries.  
<http://www.imf.org/external/pubs/cat/longres.cfm?sk=24184.0>

**Report of the Expert Group on a Viable and Sustainable System of Pricing of Petroleum Products**

India's growing dependence on imported oil products and the dramatic rise in the prices of crude oil to as high as \$148/bbl the international market in July 2008, followed by an equally dramatic fall, pose significant policy challenges. The Government's efforts to insulate domestic consumers, at least to some extent, resulted in huge fiscal burden for the Government and financial problems for the public sector oil marketing companies.  
<http://petroleum.nic.in/docs/reports/reportprice.pdf>

<p>2010</p>	<p><b>Mapping the Characteristics of Producer Subsidies: A review of pilot country studies</b>            This paper reviews data sources for fossil-fuel subsidies in a series of countries with a range of differing governance systems, energy markets and stages of economic growth. Using a detailed matrix setting out the main subsidy policies, the type of fuel and their main data sources, pilot studies have been completed for China, Germany, Indonesia and United States. The report begins to characterise the major subsidy types applied to fossil fuels and the current state of knowledge about each of these categories. The project team for each country evaluated commonly referenced data sources (e.g., databases collected by international bodies) and summarized how the information is gathered, with an important element of the research being an assessment of the data sources, including their strengths and limitations.  <a href="http://www.iisd.org/publications/pub.aspx?pno=1327">http://www.iisd.org/publications/pub.aspx?pno=1327</a></p> <p><b>The Effect of CO2 Pricing on Conventional and Non-Conventional Oil Supply and Demand</b>            What would be the effect of CO2 pricing on global oil supply and demand? This paper introduces a model describing the interaction between conventional and non-conventional oil supply in a Hotelling framework and under CO2 constraints. The model assumes that non-conventional crude oil enters the market when conventional oil supply alone is unable to meet demand, and the social cost of CO2 is included in the calculation of the oil rent at that time. The results reveal the effect of a CO2 tax set at the social cost of CO2 on oil price and demand and the uncertainty associated with the time when conventional oil production might become unable to meet demand.  <a href="http://www.economicsclimatechange.com/2010/12/effect-of-co2-pricing-on-conventional.html?utm_source=feedburner&amp;utm_medium=email&amp;utm_campaign=Feed%3A+ClimateChanges+%28Climate+Change%29">http://www.economicsclimatechange.com/2010/12/effect-of-co2-pricing-on-conventional.html?utm_source=feedburner&amp;utm_medium=email&amp;utm_campaign=Feed%3A+ClimateChanges+%28Climate+Change%29</a></p>
<p>2009</p>	<p><b>Macroeconomic Uncertainties, Oil Subsidies, and Fiscal Sustainability in Asia</b>            Global oil prices have subsided relative to the peak reached in mid-2008, but compared to historical levels they remain elevated and volatile as economic uncertainties continue to unfold. The likelihood of these prices rising again soon cannot be ruled out. High oil prices can adversely affect growth, employment, external accounts, and fiscal positions of governments. An overwhelming response across Asia as international oil prices spiked in 2008 was to shield domestic consumers more than before through oil subsidies, which are inequitable, economically inefficient, and environmentally unfriendly. These subsidies add directly to the fiscal deficit and public debt, but are generally hidden, making their measurement difficult. Additionally, in combination with lower growth rates, higher spending to rev up demand across Asia is also worsening the fiscal positions of governments. This paper computes the transmission of recent global oil price movements to domestic markets and estimates oil price subsidies in a diverse group of 32 Asian economies. Using data for 18 of these countries and applying a forward-looking methodology for debt dynamics, the paper then examines the potential impact of responses to macroeconomic shocks and a possible rise in oil prices on public debt and estimates the fiscal correction needed to sustain debt at a steady-state level. Based on the findings from the empirical analysis, the paper extracts some guiding principles for fiscal policy responses to the economic shocks depending on country-specific circumstances.  <a href="http://www.adb.org/publications/macroeconomic-uncertainties-oil-subsidies-and-fiscal-sustainability-asia">http://www.adb.org/publications/macroeconomic-uncertainties-oil-subsidies-and-fiscal-sustainability-asia</a></p> <p><b>Estimating the Effect of a Gasoline Tax on Carbon Emissions</b>            Several policymakers and economists have proposed the adoption of a carbon tax in the United States. It is widely recognized that such a tax in practice must take the form of a tax on the consumption of energy products such as gasoline. Although a large existing literature examines the sensitivity of gasoline consumption to changes in price, these estimates may not be appropriate for evaluating the effectiveness of such a tax.  <a href="http://www-personal.umich.edu/~lkilian/gasoline27.pdf">http://www-personal.umich.edu/~lkilian/gasoline27.pdf</a>  <b>Petroleum Prices, Taxation and Subsidies in India.</b> The current Indian system of effectively subsidised petroleum product prices has significant implications for the emergence of India as a major global energy consumer, for the integrity of India's Central Government budget and for investment in India's growing oil and petroleum sector. This paper is part one of a broader study that looks at the current system of petroleum pricing and the macroeconomic, microeconomic, regional and global effects of this system.  <a href="http://www.nber.org/papers/w14685.pdf">http://www.nber.org/papers/w14685.pdf</a></p>
<p>2008</p>	<p><b>A Subsidy Primer</b>            A plain-language guide on subsidies, defining their different types, purposes, roots and impacts.  <a href="http://www.iisd.org/gsi/sites/default/files/primer.pdf">http://www.iisd.org/gsi/sites/default/files/primer.pdf</a></p> <p><b>Fuel and Food Price Subsidies - Issues and Reform Options</b>            This paper discusses the key issues and policy options in the reform of subsidies for fossil fuels and selected food commodities, and their implications for the work of the Fund.  <a href="http://www.imf.org/external/pp/longres.aspx?id=4293">http://www.imf.org/external/pp/longres.aspx?id=4293</a></p>

2007

**Ecosystem Subsidies of Fossil Fuels**

Ecosystems provide the invaluable service of collecting and storing solar energy as fossil fuels (e.g., coal, petroleum, and natural gas). These concentrated forms of energy were gifted to us by the sun and collected and stored for our use by ancient ecosystem services. However, our legal and economic systems fail to recognize the value of this ecosystem service that is embedded in fossil fuels. As a result, society uses fossil fuels as though they were free and inexhaustible.

[http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1117564](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1117564)

**Domestic Petroleum Product Prices and Subsidies: Recent Developments and Reform Strategies**

The paper reviews recent developments in the pass-through of international to domestic petroleum product prices, in the different fuel pricing regimes, and in fuel subsidies in a range of emerging market and developing economies.

<http://www.imf.org/external/pubs/cat/longres.cfm?sk=20608>

**Fuel Price Subsidies in Gabon: Fiscal Costs and Distributional Impact**

This paper looks at the fiscal cost and distributional impact of implicit fuel price subsidies in Gabon, where fuel prices have remained largely unchanged since 2002.

<http://www.imf.org/external/pubs/cat/longres.cfm?sk=19906.0>

**The Magnitude and Distribution of Fuel Subsidies Evidence from Bolivia, Ghana, Jordan, Mali and Sri Lanka.**

This paper identifies the issues that need to be discussed when analysing the fiscal and social costs of fuel subsidies. Using examples from analyses recently undertaken for five countries, it also identifies the magnitude of consumer subsidies and their fiscal implications.

<http://www.imf.org/external/pubs/ft/wp/2006/wp06247.pdf>

**Household Energy Supply and Use in Yemen: Volume I, Main Report – Chapter 5: Petroleum Product Subsidies**

This chapter reviews the pricing system of petroleum products and the magnitude of the subsidies involved.

[https://www.esmap.org/sites/esmap.org/files/FR315-05\\_YEMEN\\_Household\\_Energy\\_Supply\\_Use\\_vol1.pdf](https://www.esmap.org/sites/esmap.org/files/FR315-05_YEMEN_Household_Energy_Supply_Use_vol1.pdf)

**Energy Subsidies: Their Magnitude, How they Affect Energy Investment and Greenhouse Gas Emissions, and Prospects for Reform**

This work represents a detailed analysis of energy subsidies with respect to size, impact and resulting political implications.

[http://unfccc.int/files/cooperation\\_and\\_support/financial\\_mechanism/application/pdf/morgan\\_pdf.pdf](http://unfccc.int/files/cooperation_and_support/financial_mechanism/application/pdf/morgan_pdf.pdf)

**Affordability and Subsidies in Public Urban Transport: What Do We Mean, What Can Be Done?**

This paper reviews the arguments used to justify subsidy policies in public urban transport and finally substantiates that more effort should be devoted to improve the targeting of public urban transport subsidies.

<http://econpapers.repec.org/paper/wbkwbrwps/4440.htm>

2006

**Impact of a Lower Oil Subsidy on Indonesian Macroeconomic Performance, Agricultural Sector and Poverty Incidences: a Recursive Dynamic Computable General Equilibrium Analysis**

The study objective is to analyse the impact of reducing fuel subsidy on macroeconomic variables, agricultural sector, and income distribution. The results show that the reduction in fuel price subsidy tends to increase prices of industrial outputs that highly depend on fuel, such as transportation and fishery sectors.

<http://ideas.repec.org/p/lvl/mpiacr/2007-28.html>

**Where Oil Markets Indeed are “Well Supplied”**

This paper briefly compares and analyses fuel price policies of OPEC members.

[http://www.jec.senate.gov/republicans/public/?a=Files.Serve&File\\_id=a993d5be-4544-4902-b3d4-509d61c47360](http://www.jec.senate.gov/republicans/public/?a=Files.Serve&File_id=a993d5be-4544-4902-b3d4-509d61c47360)

**Understanding the Factors That Influence the Retail Price of Gasoline**

A US-focused work which presents detailed information on the factors that influence the price of gasoline and, to the extent possible, why those factors have developed. Specifically, the work explains how gasoline is made and distributed in the US.

<http://www.gao.gov/new.items/d05525sp.pdf>

## Fuel Price Policies – Reading List 2001-2015

2002	<p><b>Issues in Domestic Petroleum Pricing in Oil-Producing Countries</b></p> <p>This paper discusses issues relating to the domestic pricing of petroleum in oil-producing countries. Moreover, the paper argues, petroleum subsidies are inefficient and inequitable. Nonetheless, the elimination of petroleum subsidies is often politically difficult, although countervailing measures and publicity campaigns can help engender support for reform.</p> <p><a href="http://www.imf.org/external/pubs/ft/wp/2002/wp02140.pdf">http://www.imf.org/external/pubs/ft/wp/2002/wp02140.pdf</a></p>
2001	<p><b>Petroleum taxes: trends in fuel taxes (and subsidies) and the implications</b></p> <p>This recent World Bank analysis shows that taxes on petroleum products are a critical source of government revenue for low-income countries. The rates of these taxes will have to rise sharply as low-income economies develop. But policymakers must be mindful of how taxes (and subsidies) affect the relative prices of fuels, since too large a difference in process between products can lead to fuel switching and adulteration, adversely affecting the government tax take and pollution levels.</p> <p><a href="http://siteresources.worldbank.org/EXTFINANCIALSECTOR/Resources/282884-1303327122200/240Bacon-831.pdf">http://siteresources.worldbank.org/EXTFINANCIALSECTOR/Resources/282884-1303327122200/240Bacon-831.pdf</a></p>



## 2 Policy Responses

2015

### Addressing the Energy-Efficiency Gap

Energy-efficient technologies offer considerable promise for reducing the financial costs and environmental damages associated with energy use, but these technologies appear not to be adopted by consumers and businesses to the degree that would apparently be justified, even on a purely financial basis. We present two complementary frameworks for understanding this so called “energy paradox” or “energy-efficiency gap.” First, we build on the previous literature by dividing potential explanations for the energy-efficiency gap into three categories: market failures, behavioural anomalies, and model and measurement errors. Second, we posit that it is useful to think in terms of the fundamental elements of cost-minimizing energy-efficiency decisions. This provides a decomposition that organizes thinking around four questions. First, are product offerings and pricing economically efficient? Second, are energy operating costs inefficiently priced and/or understood? Third, are product choices cost-minimizing in present value terms? Fourth, do other costs inhibit more energy-efficient decisions? We review empirical evidence on these questions, with an emphasis on recent advances, and offer suggestions for future research.

<http://www.nber.org/papers/w20904>

### Optimal monetary policy response to endogenous oil price fluctuations

Should the central bank seek to identify the underlying causes of oil price hikes in determining appropriate policy responses to them? Most likely not. Within a calibrated new-Keynesian model of Oil-Importing and Oil-Producing Countries, I derive the Ramsey policy and analyse optimal monetary policy responses to different sources of oil price fluctuations. I find that oil-specific demand and supply shocks call for similar policy responses, given the low substitutability of oil in production and the incompleteness of international asset markets.

<https://www.nbb.be/doc/ts/publications/wp/wp277en.pdf>

### Monetary Policy Responses to Oil Price Fluctuations

The paper provides the first quantitative analysis of how U.S. monetary policy responses should differ depending on the source of the observed oil price fluctuations. It presents three main sets of results. First, the paper proposes a novel decomposition of the marginal cost of production that highlights the role of each factor input for the evolution of inflation. Second, conditional on an estimated interest rate policy reaction function, the paper demonstrates that no two structural shocks induce the same monetary policy response, even after controlling for the impact response of the real price of oil, and quantifies these differences. Third, the paper shows that the policy responses implied by a policy rule, whose coefficients were chosen to maximize U.S. welfare, differ substantially from the policy response implied by the same rule estimated on historical data. Among a wide range of rules, a rule that is easily implementable and that nearly maximizes U.S. welfare involves the Federal Reserve putting zero weight on the price of oil and responding to wage inflation without interest rate smoothing.

<https://ideas.repec.org/p/cpr/ceprdp/8928.html>

### Monetary policy implications for an oil-exporting economy of lower long-run international oil prices

The sudden collapse of oil prices poses a challenge to inflation targeting central banks in oil exporting economies. This paper illustrates that challenge and conducts a quantitative assessment of the impact of permanent changes in oil prices in a small and open economy, in which oil represents an important fraction of its exports. We calibrate and estimate a variety of real and monetary dynamic stochastic general equilibrium models using Colombian historical data. We find that, in these artificial economies the macroeconomic effects can be large but vary depending on the structure of the economy. The main channels through which the shock passes to the economy come from the increased country risk premium, the real exchange rate depreciation, the sectoral reallocation of resources from nontradables to tradables and the sluggish adjustment of prices. Contrary to the conventional findings in the literature of the financial accelerator mechanism for single-good closed economies, in multiple-goods small open economies the financial accelerator does not play a significant role in magnifying macroeconomic fluctuations. The sectoral reallocation from nontradable to tradables diminishes the financial amplification mechanism.

<http://www.bis.org/events/ccaconf2015/colombia.pdf>

2015

**Long-term climate policy implications of phasing out fossil fuel subsidies**

It is often argued that fossil fuel subsidies hamper the transition towards a sustainable energy supply as they incentivize wasteful consumption. We assess implications of a subsidy phase-out for the mitigation of climate change and the low-carbon transformation of the energy system, using the global energy–economy model REMIND. We compare our results with those obtained by the International Energy Agency (based on the World Energy Model) and by the Organization for Economic Co-Operation and Development (OECD-Model ENV-Linkages), providing the long-term perspective of an intertemporal optimization model. The results are analysed in the two dimensions of subsidy phase-out and climate policy scenarios. We confirm short-term benefits of phasing-out fossil fuel subsidies as found in prior studies. However, these benefits are only sustained to a small extent in the long term, if dedicated climate policies are weak or non-existent. Most remarkably we find that a removal of fossil fuel subsidies, if not complemented by other policies, can slow down a global transition towards a renewable based energy system. The reason is that world market prices for fossil fuels may drop due to a removal of subsidies. Thus, low carbon alternatives would encounter comparative disadvantages.  
<http://www.sciencedirect.com/science/article/pii/S0301421513012597>

**Energy Sector in Bangladesh: An agenda for reforms**

This report addresses the key priority issues for reform in the energy sector along with an agenda for its progressive implementation. Section 2 provides an overview of energy subsidies in Bangladesh. Section 3 surveys the country’s energy sector development plans, with an emphasis on the electricity sector. It also discusses the important role that energy pricing policy will play in achieving the government’s objectives. Finally, Section 4 provides conclusions and recommendations.  
<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.433.4405&rep=rep1&type=pdf>

**Lowering Saudi Arabia's fuel consumption and energy system costs without increasing end consumer prices**

Using a multi-sector equilibrium model of the Saudi energy system that handles administered prices in a mixed-complementarity formulation, we present results from a set of policy scenarios that lower oil consumption in the country. Some of these scenarios are the solutions to Mathematical Programs subject to Equilibrium Constraints (MPECs) that maximize the net economic gain for the Saudi economy. The policies examined have the potential to generate economic gains exceeding 23 billion USD in 2011, or about 4% of Saudi Arabia's GDP. This economic gain comes mainly from inter-sectoral fuel pricing policies that incent shifting the mix in technologies that generate electricity and produce water from energy intensive technologies to more efficient ones. We show that when complemented by credits for investments in solar and nuclear power generation capacities, a modest increase in the transfer prices of fuels among sectors is sufficient to produce economic gains close to those achieved by deregulating transfer prices. The approach we develop here is an alternative to the classic recommendation of deregulating inter-sectoral fuel prices in situations where the conditions for successful liberalized markets do not exist. It is a template for introducing the notions of incentivizing behaviour using prices into countries that rely more on administrative procedures than markets, leading to a deeper understanding of how markets can lead to economic gain.  
<http://www.sciencedirect.com/science/article/pii/S0140988315001115>

**Do Policies for Phasing Out Fossil Fuel Subsidies Deliver What They Promise?**

Fossil fuel subsidies reform has been intensively debated and promoted as a concrete step towards sustainable development, with anticipated benefits of reduced carbon emissions, saved public spending, and improved social distribution. But does this “triple-win” policy deliver what it promises? This working paper focuses on the social “win”—the narrative of social and distributional gains of the energy subsidies reform. The research follows a comparative analysis approach. Three countries were selected as target for in-depth case studies based on their diverse political, economic and social contexts: Ghana, Indonesia and Iran. We examine in each case the distributional effects of subsidy removal, the design and implementation of social programmes and their impact on welfare, as well as the political economy around sustainability of the reform. Based on comparative studies across the three cases, a set of political, economic and social factors are identified to have key impact on the social outcome of reforms.  
[http://unrisd.org/80256B3C005BCCF9/\(httpAuxPages\)/170D2DA8A96A5352C1257DC40050C975/\\$file/Lindebjerg%20et%20al.pdf](http://unrisd.org/80256B3C005BCCF9/(httpAuxPages)/170D2DA8A96A5352C1257DC40050C975/$file/Lindebjerg%20et%20al.pdf)

2015

**Fuel Efficiency Improvements: Saving Money, Oil, Planet**

When President Obama entered the Oval Office, he set an aggressive agenda to combat global climate change and cut America's reliance on foreign sources of energy. Today, the National Highway Traffic Safety Administration and the U.S. Environmental Protection Agency took another positive step forward by proposing new standards for medium- and heavy-duty vehicles, the vehicles that work in our communities and transport goods all over our country.

<http://www.transportation.gov/fastlane/obama-administration-proposes-heavy-duty-vehicle-standards>

**Opportunity to act: Making smart decisions in a time of low oil prices**

What actions can we take, given the precipitous drop in oil prices that has occurred over the past months? What can be done today that would have been near impossible one year ago? What can be done that can have a real and positive impact on climate negotiations at COP21 later this year?

[http://www.iea.org/newsroomandevents/speeches/150127\\_OxfordEnergyColloquiumspeech.pdf](http://www.iea.org/newsroomandevents/speeches/150127_OxfordEnergyColloquiumspeech.pdf)

**GRFA: Biofuels Help Support Rural Africa**

The first African Sustainable Transport Forum is taking place this week in Nairobi, Kenya and the Global Renewable Fuels Alliance (GRFA) called on forum attendees to adopt biofuel friendly policies and regulations that would kick-start the increased use of sustainable biofuels in Africa's transport sector.

<http://domesticfuel.com/2014/10/29/grfa-biofuels-help-support-rural-africa/>

**IMF Calls for Further Energy Subsidy Reform in MENA Region**

A report by the International Monetary Fund (IMF) on subsidy reform in the Middle East and North Africa (MENA) region explores recent progress, challenges ahead, and outlines the characteristics of successful subsidy reform. The report recommends that countries in the region focus on enhanced social safety nets, automatic price-setting mechanisms, energy sector restructuring and awareness raising on the cost of subsidies.

<http://www.imf.org/external/pubs/ft/dp/2014/1403mcd.pdf>

**Fuel economy improvements**

According to the US Energy Information Administration (EIA), fuel costs, which depend on vehicle fuel economy, miles driven, and fuel price, are an important factor in vehicle purchasing decisions. However, fuel economy improvement exhibits diminishing returns in fuel savings.

[http://www.energyglobal.com/news/processing/articles/Fuel\\_economy\\_improvements\\_907.aspx#.U8YTf\\_l\\_s6w](http://www.energyglobal.com/news/processing/articles/Fuel_economy_improvements_907.aspx#.U8YTf_l_s6w)

2014

**Seven Questions About The Recent Oil Price Slump**

Oil prices have plunged recently, affecting everyone: producers, exporters, governments, and consumers. Overall, we see this as a shot in the arm for the global economy. Bearing in mind that our simulations do not represent a forecast of the state of the global economy, we find a gain for world GDP between 0.3 and 0.7 percent in 2015, compared to a scenario without the drop in oil prices. There is however much more to this complex and evolving story. In this blog we examine the mechanics of the oil market now and in the future, the implications for various groups of countries as well as for financial stability, and how policymakers should address the impact on their economies.

<http://blog-imfdirect.imf.org/2014/12/22/seven-questions-about-the-recent-oil-price-slump/>

**Angola Fuel Price Subsidy Reform: The Way Forward**

The Angolan authorities' plan to scale up priority spending will intensify fiscal pressures. The overall fiscal balance is projected to reach a deficit of about 4 percent of GDP in 2014, owing to a temporary decline in oil production. Despite the predicted recovery in production, the fiscal balance is expected to deteriorate further in the medium term, mirroring the forecast decline in oil prices. At the same time, in response to the mounting demand for infrastructure and poverty alleviation, the authorities aim at increasing priority spending, in particular investment.

<http://www.minfin.gv.ao/docs/subsidios/Angola%20TAR%20-%20English.pdf>

**Reform of Fossil-fuel Subsidies**

Fossil-fuel subsidies matter: for sustainable development; for government budgets; for the poor; for women; and for the environment. Subsidies amounted to USD544 billion (2012) and are largest in MENA and Southeast Asia. Reforming and redirecting subsidies will be an important piece of the jigsaw if we are to solve the climate change puzzle. Savings enable governments to manage deficits; could be redirected at building energy networks; or targeted at social spending.

<http://www.norden.org/en/publications/publikationer/2014-903/>

2014

**GSI Case studies: Lessons Learned From Attempts to Reform Fossil-Fuel Subsidies**

The GSI has developed a broad range of case studies of fossil-fuel subsidy reform. This includes a review of subsidies and reform attempts across APEC economies and case studies on Brazil, France, Ghana, North Sudan, Malaysia, India, Indonesia, Iran, Poland and Senegal.

<http://www.iisd.org/gsi/fossil-fuel-subsidies/case-studies-lessons-learned-attempts-reform-fossil-fuel-subsidies>

**Fuel-saving tyres Hysterectomy**

TYRES are remarkable pieces of engineering. At high speed in slippery bends they provide only a few square centimetres of contact with the road, yet they help a driver steer safely around the corner. Once, they were made entirely of natural rubber.

<http://www.economist.com/news/science-and-technology/21569013-silica-extracted-rice-husks-makes-greener-tyres-hysterectomy>

**International comparison of light-duty vehicle fuel economy: An update using 2010 and 2011 new registration data**

In the first edition of this report, the main finding highlighted that global fuel economy improved by an average of 1.7% per year between 2005 and 2008, far below the required 2.7% annual improvement rate to reach the GFEI target of halving new light duty vehicle fuel economy (in l/100km or gCO<sub>2</sub>/km) by 2030.

<http://www.fiafoundation.org/media/44069/wp5-iaea-fuel-economy-report.pdf>

**Reforming fuel pricing in an age of \$100 oil**

This study focuses on the evolving role of oil in national economies, particularly those of developing countries, and proposes a menu of options for drawing a roadmap for pricing policy reform for oil products. In light of events since 2009, it examines how recent price movements have affected countries' vulnerability to world oil price increases, how governments have adjusted domestic fuel prices in response, the consequences of the policy responses, other coping mechanisms to deal with high oil prices and price volatility, the roadblocks to reforming pricing policy, and how to deal with them. This report suggests a menu of options for moving away from sectoral subsidies to market-based pricing, accompanied by an integrated social protection program and complementary policies to reduce consumption through efficiency improvement and fuel diversification.

<http://documents.worldbank.org/curated/en/2013/01/18019602/reforming-fuel-pricing-age-100-oil>

2013

**Drawing a roadmap for oil pricing reform**

The path to market-based pricing depends on the starting conditions: the gap between current and market-based price levels, the level of public awareness about the extent of departure from market prices, the degree of market concentration and competition in downstream oil, the subsidy delivery mechanism where subsidies are provided, the robustness of social service delivery, and the perceived credibility of the government. The evidence presented in this paper suggests that pricing reform often does not have a clear end and should instead be viewed as a continuous process of adjustment and search for mechanisms that take into account the country's institutions and political system, and the oil sector's market structure, infrastructure, and history.

<http://elibrary.worldbank.org/doi/abs/10.1596/1813-9450-6450>

**Petroleum product pricing and complementary policies: experience of 65 developing countries since 2009**

Unable to cope fully with steadily climbing world oil prices since mid-2009, many of the 65 countries reviewed in this paper have progressed slowly or even reversed course in reforming pricing of petroleum products. End-user prices in July 2012 varied by two orders of magnitude across the countries. More than two-fifths, including some that had only recently adopted automatic pricing mechanisms, froze the prices of gasoline, diesel, or both for months or even years on end during the study period. When the prices were finally adjusted, the increases were sometimes substantial, leading to large-scale protests, partial or full reversals of price adjustments, or softening of pricing reform policy. Governments' attempts to keep domestic prices artificially low -- through price control, export or quantity restrictions, or political pressure put on oil companies -- have helped curb inflation in the short term, but frequently with serious negative consequences: flourishing black markets, smuggling, fuel adulteration, illegal diversion of subsidy funds, large financial losses suffered by fuel suppliers, deteriorating refining and other infrastructure, and acute fuel shortages causing economy-wide damage.

<https://ideas.repec.org/p/wbk/wbrwps/6396.html>

2013

**Case Studies on Energy Subsidy Reform—Lessons and Implications**

This supplement presents country case studies reviewing energy subsidy reform experiences, which are the basis for the reform lessons identified in the main paper. The selection of countries for the case studies reflects the availability of data and of previously documented evidence on country-specific reforms. The 22 country case studies were also chosen to provide cases from all regions and a mix of outcomes from reform. The studies cover 19 countries, including seven from sub-Saharan Africa, two in developing Asia, three in the Middle East and North Africa, four in Latin America and the Caribbean, and three in Central and Eastern Europe and the CIS. The case studies are organized by energy product, with 14 studies of the reform of petroleum product subsidies, seven studies of the reform of electricity subsidies, and a case study of subsidy reform for coal.

<http://www.imf.org/external/np/pp/eng/2013/012813a.pdf>

**The Fiscal and Welfare Impacts of Reforming Fuel Subsidies in India**

Rising fuel subsidies have contributed to fiscal pressures in India. A key policy concern regarding subsidy reform is the adverse welfare impact on households, in particular poor households. This paper evaluates the fiscal and welfare implications of fuel subsidy reform in India. Fuel subsidies are found to be badly targeted, with the richest ten percent of households receiving seven times more in benefits than the poorest ten percent.

<http://www.imf.org/external/pubs/cat/longres.aspx?sk=40593.0>

**A Guidebook to Fossil-Fuel Subsidy Reform for Policy-Makers in Southeast Asia**

There is no one-size-fits-all strategy for fossil-fuel subsidy reform—but there are a set of planning stages that are generic, along with many common issues, challenges and potential solutions. The Global Subsidies Initiative (GSI) of the International Institute for Sustainable Development (IISD) has published a guidebook on how governments can formulate an effective reform strategy that will fit their individual objectives and circumstances. It is aimed at policy-makers in Southeast Asia, but much of its guidance could apply to any region.

<http://www.iisd.org/gsi/fossil-fuel-subsidies/guidebook>

**A Citizens' Guide to Energy Subsidies in Thailand**

Thailand has stabilized and subsidized energy prices for decades in an effort to shield consumers from volatile energy prices and improve access to energy. Despite significant reforms to deregulate parts of its fuels market, Thailand's subsidies for fuel and electricity totalled at least THB 195 billion (US\$6.8 billion) in 2012. Fuel and electricity subsidies are clearly benefiting some consumers, including the poor, who rely on subsidized liquefied petroleum gas (LPG) for cooking and free electricity.

<http://www.iisd.org/publications/pub.aspx?id=2778>

**Energy Subsidy Reform: Lessons and Implications**

Energy subsidies have wide-ranging economic consequences. While aimed at protecting consumers, subsidies aggravate fiscal imbalances, crowd-out priority public spending, and depress private investment, including in the energy sector. Subsidies also distort resource allocation by encouraging excessive energy consumption, artificially promoting capital-intensive industries, reducing incentives for investment in renewable energy, and accelerating the depletion of natural resources.

<http://www.imf.org/external/np/pp/eng/2013/012813.pdf>

2012

**Optimal Oil Production and the World Supply of Oil**

We study the optimal oil extraction strategy and the value of an oil field using a multiple real option approach. The numerical method is flexible enough to solve a model with several state variables, to discuss the effect of risk aversion, and to take into account uncertainty in the size of reserves. Optimal extraction in the baseline model is found to be volatile. If the oil producer is risk averse, production is more stable, but spare capacity is much higher than what is typically observed. We show that decisions are very sensitive to expectations on the equilibrium oil price using a mean reverting model of the oil price where the equilibrium price is also a random variable. Oil production was cut during the 2008–2009 crisis, and we find that the cut in production was larger for OPEC, for countries facing a lower discount rate, as predicted by the model, and for countries whose governments' finances are less dependent on oil revenues. However, the net present value of a country's oil reserves would be increased significantly (by 100 percent, in the most extreme case) if production was cut completely when prices fall below the country's threshold price. If several producers were to adopt such strategies, world oil prices would be higher but more stable.

<http://www.imf.org/external/pubs/cat/longres.aspx?sk=40169.0>

2012

**On the Sources and Consequences of Oil Price Shocks: the Role of Storage**

Building on recent work on the role of speculation and inventories in oil markets, we embed a competitive oil storage model within a DSGE model of the U.S. economy. This enables us to formally analyse the impact of a (speculative) storage demand shock and to assess how the effects of various demand and supply shocks change in the presence of oil storage facility. We find that business-cycle driven oil demand shocks are the most important drivers of U.S. oil price fluctuations during 1982-2007. Disregarding the storage facility in the model causes a considerable upward bias in the estimated role of oil supply shocks in driving oil price fluctuations. Our results also confirm that a change in the composition of shocks helps explain the resilience of the macroeconomic environment to the oil price surge after 2003. Finally, speculative storage is shown to have a mitigating or amplifying role depending on the nature of the shock.  
<http://www.imf.org/external/pubs/cat/longres.aspx?sk=40090.0>

**Technology Roadmap: Fuel Economy of Road Vehicles**

This roadmap explores the potential improvement of existing technologies to enhance the average fuel economy of motorised vehicles; the roadmap's vision is to achieve a 30% to 50% reduction in fuel use per kilometre from new road vehicles including 2-wheelers, LDV s and HDV s) around the world in 2030, and from the stock of all vehicles on the road by 2050. This achievement would contribute to significant reductions in GHG emissions and oil use, compared to a baseline projection  
[http://www.iea.org/publications/fueleconomy\\_2012\\_final\\_web.pdf](http://www.iea.org/publications/fueleconomy_2012_final_web.pdf)

**Policy Pathways: Improving the Fuel Economy of Road Vehicles - A policy package**

Improving the Fuel Economy of Road Vehicles highlights lessons learned and examples of good practices from countries with experience in implementing fuel economy policies for vehicles. The report, part of the IEA's Policy Pathway series, outlines key steps in planning, implementation, monitoring and evaluation. It complements the IEA Technology Roadmap: Fuel Economy for Road Vehicles, which outlines technical options, potentials, and costs towards improvement in the near, medium and long term.  
<https://www.iea.org/publications/freepublications/publication/policy-pathways-improving-the-fuel-economy-of-road-vehicles---a-policy-package.html>

**Implementing energy subsidy reforms : an overview of the key issues**

Poorly implemented energy subsidies are economically costly to taxpayers and damage the environment. This report describes the emerging lessons that could help policy makers to address implementation challenges, including overcoming political economy and affordability constraints. The analysis provides strong evidence of the success of reforms in reducing the associated fiscal burden. For the selected sample of 20 developing countries, the average energy subsidy recorded in the budget was reduced from 1.8 percent in 2004 to 1.3 percent of gross domestic product in 2010.  
<http://elibrary.worldbank.org/doi/abs/10.1596/1813-9450-6122>

**Environmental Tax Reform: Principles from Theory and Practice to Date**

This paper recommends a system of upstream taxes on fossil fuels, combined with refunds for downstream emissions capture, to reduce carbon and local pollution emissions. Motor fuel taxes should also account for congestion and other externalities associated with vehicle use, at least until mileage-based taxes are widely introduced. An examination of existing energy/environmental tax systems in Germany, Sweden, Turkey, and Vietnam suggests that there is substantial scope for policy reform. This includes harmonizing taxes for pollution content across different fuels and end-users, better aligning tax rates with values for externalities, and scaling back taxes on vehicle ownership and electricity use that are redundant (on environmental grounds) in the presence of more targeted taxes.  
<http://www.imf.org/external/pubs/cat/longres.aspx?sk=26049.0>

**Carbon taxation and fiscal consolidation: the potential of carbon pricing to reduce Europe's fiscal deficits**

The report highlights the advantages of carbon-energy tax and pricing measures in comparison to indirect and direct taxation for employment and GDP growth. It shows that, Euro for Euro, energy and carbon taxes have a lower negative impact on the economy, consumption and jobs than income tax or VAT. Carbon and energy taxes can raise revenue while leaving the economy a stronger state to sustain the recovery. Conventional taxes raise revenue, but pose a much greater risk of depressing growth in the process.  
[http://www.foes.de/pdf/2012-05\\_CETRiE\\_Carbon\\_Pricing\\_Report\\_web.pdf](http://www.foes.de/pdf/2012-05_CETRiE_Carbon_Pricing_Report_web.pdf)

### **Managing Oil Price Volatility 1 - Lessons from Latin America and the Caribbean**

A recent ESMAP-supported study analyses the economic effects of higher and volatile prices on oil-importing countries, with emphasis on the power sector, using examples from Latin America and the Caribbean. The study, which comes in response to the needs of policy makers and energy planners in oil-importing countries to better manage exposure to oil price risk, proposes structural measures designed to reduce oil consumption, while a range of financial instruments are suggested for managing price risk in the short term.

<http://www.esmap.org/esmap/node/1953>

### **Optimal Oil Production and the World Supply of Oil**

We study the optimal oil extraction strategy and the value of an oil field using a multiple real option approach. The numerical method is flexible enough to solve a model with several state variables, to discuss the effect of risk aversion, and to take into account uncertainty in the size of reserves. Optimal extraction in the baseline model is found to be volatile. If the oil producer is risk averse, production is more stable, but spare capacity is much higher than what is typically observed. We show that decisions are very sensitive to expectations on the equilibrium oil price using a mean reverting model of the oil price where the equilibrium price is also a random variable. Oil production was cut during the 2008–2009 crisis, and we find that the cut in production was larger for OPEC, for countries facing a lower discount rate, as predicted by the model, and for countries whose governments' finances are less dependent on oil revenues. However, the net present value of a country's oil reserves would be increased significantly (by 100 percent, in the most extreme case) if production was cut completely when prices fall below the country's threshold price. If several producers were to adopt such strategies, world oil prices would be higher but more stable.

<http://www.imf.org/external/pubs/cat/longres.aspx?sk=40169.0>

### **On the Sources and Consequences of Oil Price Shocks: the Role of Storage**

Building on recent work on the role of speculation and inventories in oil markets, we embed a competitive oil storage model within a DSGE model of the U.S. economy. This enables us to formally analyse the impact of a (speculative) storage demand shock and to assess how the effects of various demand and supply shocks change in the presence of oil storage facility. We find that business-cycle driven oil demand shocks are the most important drivers of U.S. oil price fluctuations during 1982–2007. Disregarding the storage facility in the model causes a considerable upward bias in the estimated role of oil supply shocks in driving oil price fluctuations. Our results also confirm that a change in the composition of shocks helps explain the resilience of the macroeconomic environment to the oil price surge after 2003. Finally, speculative storage is shown to have a mitigating or amplifying role depending on the nature of the shock.

<http://www.imf.org/external/pubs/cat/longres.aspx?sk=40090.0>

### **Managing Oil Price Volatility 2 - Bringing Latin America's Lessons to the Pacific**

Pacific island states are some of the most vulnerable countries in the world to oil price shocks. One of the authors of a recent ESMAP-supported report on managing oil price volatility travelled to the Pacific to share the findings and recommendations of the study with officials from island states. He outlined three of the primary options that countries can take to limit their exposure: exploring available renewable power generation options, increasing investments in energy efficiency both on the supply and demand sides, and using financial hedging instruments to mitigate risk.

<http://www.esmap.org/esmap/node/1958>

### **A Citizens' Guide to Energy Subsidies in India**

The paper provides the latest data on the size of fossil fuel subsidies in India. It also gives an accessible introduction to the impact of these subsidies on economic growth, livelihoods and the environment. India has historically subsidized energy with the objective of protecting its consumers from international price volatility and providing energy access for its citizens, especially the poor. However, energy subsidies place a heavy burden on government budgets, while often failing to reach their targeted beneficiaries.

<http://www.iisd.org/gsi/introductions-non-experts/citizens-guide-energy-subsidies-india>

### **Studies Chart a Path to Reduce India's Fossil-Fuel Subsidies**

New research charts a path to reduce India's fossil-fuel subsidies while managing the economic and social impacts of higher fuel prices. High levels of subsidies to fossil-fuels (INR 1.4 trillion or US\$ 27.7 billion in 2011–2012) are placing a heavy burden on public finances, compromising investment in much-needed social and physical infrastructure. Yet reform has been hampered by legitimate concerns over how higher fuel prices will affect the broader economy—potentially disrupting key sectors like transport, industry and agriculture—and the ability of poor citizens to cope with higher prices.

<http://www.aninews.in/newsdetail3/story69146/studies-chart-path-to-reduce-india-039-s-fossil-fuel-subsidies-with-minimal-economic-impact.html>

2012

**Indonesia’s Fuel Subsidies: An Action Plan for Reform**

The report outlines a detailed plan for reducing Indonesia’s fuel subsidies. Indonesia spent IDR164.7 trillion (US\$18.1 billion) subsidizing fuel products in 2011, of which IDR76.5 trillion (US\$8.4 billion) was spent subsidizing gasoline. This is more than the country spent on defence, education, health and social security combined. The report identifies the positions of major civil society organisations and the private sector, based on consultations and surveys. It also provides new analysis of the practical challenges facing the government’s plans to develop alternative, gas-based transport fuels in the Java-Bali region. Finally, the report suggests a set of recommended actions for progressing fuel subsidy reform.

<http://www.iisd.org/gsi/news/report-provides-action-plan-reforming-fuel-subsidies-indonesia>

**A Citizens' Guide to Energy Subsidies in Bangladesh**

The work is intended to help citizens understand energy subsidies. The guide discusses the size of subsidies to different energy types, the segments of society that benefit the most, and how they affect the country’s economy and environment. It also highlights the process of reforming energy subsidies, drawing on the experience of Bangladesh and other developing countries.

<https://www.iisd.org/gsi/resources/introductions-non-experts/citizens-guide-energy-subsidies-bangladesh>

**A Citizens' Guide to Energy Subsidies in Malaysia**

This guide discusses the costs and benefits of energy subsidies in Malaysia. The guide discusses the size of subsidies to different energy types, the segments of society that benefit the most, and how subsidies affect the country’s economy and environment. It also highlights the process of reforming energy subsidies, drawing on the experience of Malaysia and other countries.

<http://www.iisd.org/gsi/resources/citizens-guide-energy-subsidies-malaysia>

**A Citizens' Guide to Energy Subsidies in Nigeria**

This guide provides an accessible introduction to the best available information on the costs and benefits of energy subsidies in Nigeria. It provides an overview of how various types of energy are subsidized; the implications of these subsidies on various aspects of sustainable development; and how they might be or are being reformed, including a summary of lessons learned from international experience.

<http://www.iisd.org/gsi/resources/introductions-non-experts/citizens-guide-energy-subsidies-nigeria>

**Cultivating Governance: Cautionary Tales for Biofuel Policy Reformers**

The policy brief analyses the current developments around the emerging U-turns on government support to biofuels internationally. Based on desk research as well as interviews with stakeholders, it seeks to provide guidance for biofuel policy reformers on good governance principles in view of pressures from different interest groups.

<http://www.iisd.org/gsi/cultivating-governance-lessons-learned-biofuel-subsidies>

**Recent Developments in Iran's Energy Subsidy Reforms**

In 2010, Iran undertook bold economic reforms to phase out energy subsidies. This policy brief outlines recent developments since the reforms were implemented and sheds some light on how the reforms – once referred to as the country’s “grand economic surgery” – have affected Iran.

<http://www.iisd.org/gsi/recent-developments-irans-energy-subsidy-reforms>

**Appropriate Response to Rising Fuel Prices**

This report investigates the best public policy response to rising fuel prices. This analysis indicates that efforts to reduce fuel price increases may harm consumers and the economy overall by encouraging long-term inefficiencies.

<http://www.vtqi.org/fuelprice.pdf>

2011

**Is Fiscal Policy Pro-cyclical in Developing Oil-Producing Countries?**

This paper examines the cyclicity of fiscal behaviour in 28 developing oil-producing countries (OPCs) during 1990-2009. After testing five fiscal measures - government expenditure, consumption, investment, non-oil revenue, and non-oil primary balance - and correcting for reverse causality between non-oil output and fiscal variables, the results suggest that all of the five fiscal variables are strongly procyclical in the full sample. Also, the results are not uniform across income groups: expenditure is procyclical in the low and middle-income countries, while it is countercyclical in the high-income countries. Fiscal policy tends to be affected by the external financing constraints in the middle- and high-income groups. However, the quality of institutions and political structure appear to be more significant for the low-income group.

<http://www.imf.org/external/pubs/cat/longres.aspx?sk=25063.0>



### **External Sustainability of Oil-Producing Sub-Saharan African Countries**

In the extensive empirical work carried out across the IMF on oil-producing sub-Saharan African (SSA) countries, the notion of "sustainability" is often directed toward fiscal policies, and, in particular, views on the "optimal" non-oil primary fiscal deficit. The bulk of this work does not, however, address external sustainability, which is a concern especially for those SSA oil producers operating under a fixed exchange rate regime. A couple of recent papers have extended the existing methodologies to assess external sustainability for some oil-producing countries but they do not focus on those in sub-Saharan Africa. In this paper, we bolster this empirical work by providing a range of estimates for the long-run external current external account balance for each of the SSA oil-producing countries, based on three widely used methodologies in the IMF. Our research strategy is to apply these models to the eight countries in the subregion - Angola, Cameroon, Chad, Côte d'Ivoire, Equatorial Guinea, Gabon, Nigeria, and the Republic of Congo - using similar simplifying assumptions so that we are using the same lens to view how they do and do not differ.

<http://www.imf.org/external/pubs/cat/longres.aspx?sk=25197.0>

### **The Chronicles of the Subsidy Reform in Iran**

On December 18, 2010, Iran increased domestic energy and agricultural prices by up to 20 times, making it the first major oil-exporting country to reduce substantially implicit energy subsidies. This paper reviews the economic and technical issues involved in the planning and early implementation of the reform, including the transfers to households and the public relations campaign that were critical to the success of the reform. It also looks at the reform from a chronological standpoint, in particular in the final phases of the preparation. The paper concludes by an overview of the main challenges for the second phase of the reform.

<http://www.imf.org/external/pubs/cat/longres.aspx?sk=25044.0>

### **International Fuel Tax Assessment: An Application to Chile**

Gasoline and diesel fuel are heavily taxed in many developed and some emerging and developing countries. Outside of the United States and Europe, however, there has been little attempt to quantify the external costs of vehicle use, so policymakers lack guidance on whether prevailing tax rates are economically efficient. This paper develops a general approach for estimating motor vehicle externalities, and hence corrective taxes on gasoline and diesel, based on pooling local data with extrapolations from U.S. evidence. The analysis is illustrated for the case of Chile, though it could be applied to other countries.

<http://www.imf.org/external/pubs/cat/longres.aspx?sk=25045.0>

### **Burkina Faso: Policies to Protect the Poor from the Impact of Food and Energy Price Increases**

This paper assesses the effectiveness of policies taken by the Burkinabè authorities to protect the poor from the adverse impact of a combined food and oil price shock in 2008. Estimates of the impact based on household survey data and a price pass-through model suggest that these policies were not well-targeted, benefiting the wealthier groups of the population rather than the poor. More effective policy measures, such as a conditional cash transfer system, which is already being implemented on a pilot basis in urban areas, are discussed as an alternative policy option.

<http://www.imf.org/external/pubs/cat/longres.aspx?sk=25182.0>

### **Energy Security and Sub-Saharan Africa**

Over the last decade the topic of energy security has reappeared on global policy agendas. Most analyses of international energy geopolitics examine the interests and behaviour of powerful energy-importing countries like the US and China. This article begins by examining foreign powers' expanded exploitation of oil and uranium resources in Sub-Saharan Africa.

<http://poldev.revues.org/744>

### **Petroleum subsidies in Yemen**

Petroleum subsidy reform is increasingly seen as an opportunity for consolidating public finances and fostering sustainable economic development. Yemen, as the country with the lowest per capita income in the group of countries with a high level of energy subsidies, started to reduce subsidies in 2010 and is discussing further options for reform. The results of this paper support a comprehensive petroleum subsidy reform in Yemen. Economic growth is projected to accelerate between 0.1 and 0.8 percentage points annually as a result of reform. Yet, the design of the reform is critically important, especially for the poor. Outcomes of alternative reform scenarios range from an increase in poverty of 2 to 6 percentage points. A promising strategy combines subsidy reduction with direct transfers of 13,800 to 19,700 Yemeni rials annually to the poorest 30 percent of households and enhanced public investments. Investments should focus on the utilities, transport, trade, and construction sectors to integrate economic spaces and create the platform for a restructuring of agricultural, industrial, and service value chains, which should encourage private sector led and job creating growth in the medium term.

<http://www.ifpri.org/publication/petroleum-subsidies-yemen>

<p>2011</p>	<p><b>Mitigation potential of removing fossil fuel subsidies: a general equilibrium</b>                  This paper discusses the assumptions, data and both environmental and economic implications of removing these subsidies. It shows that, though removing these subsidies would amount to roughly a seventh of the effort needed to stabilize GHG concentration at a level of 450ppm or below 2°C, the full environmental benefit of this policy option can only be achieved if, in parallel, emissions are also capped in OECD countries. Finally, though removing these subsidies qualifies as being a win-win option at the global level in terms of environmental and economic benefits, this is not true for all countries/regions. The paper also provides some discussion about the robustness of these results.  <a href="http://cleanairinitiative.org/portal/sites/default/files/slocat/MITIGATION_POTENTIAL_OF_REMOVING_FOSSIL_FUEL_SUBSIDIES-A_GENERAL.pdf">http://cleanairinitiative.org/portal/sites/default/files/slocat/MITIGATION_POTENTIAL_OF_REMOVING_FOSSIL_FUEL_SUBSIDIES-A_GENERAL.pdf</a></p>
<p>2010</p>	<p><b>Delivering on G-20 Commitments: The Path to Fossil-Fuel Subsidy Reform</b>                  This brief summarizes what the G-20 has done to reform fossil-fuel subsidies, up to and including the G-20 Toronto Summit in June 2010. It also outlines a roadmap for the phase out of fossil-fuel subsidies into the future.  <a href="http://www.iisd.org/gsi/october-2010-delivering-g-20-commitments-path-fossil-fuel-subsidy-reform">http://www.iisd.org/gsi/october-2010-delivering-g-20-commitments-path-fossil-fuel-subsidy-reform</a></p> <p><b>Delivering on The G-20 Commitment to Reform Fossil-Fuel Subsidies: Essential Outcomes From Toronto</b>                  This policy brief summarizes G-20 country activity since the Pittsburgh Summit and what needs to be done next. It focuses in particular on the outcomes that need to result from the Toronto Summit on 26-27 June 2010.  <a href="http://www.iisd.org/gsi/june-2010-delivering-g-20-commitment-reform-fossil-fuel-subsidies-essential-outcomes-toron">http://www.iisd.org/gsi/june-2010-delivering-g-20-commitment-reform-fossil-fuel-subsidies-essential-outcomes-toron</a></p> <p><b>Iran to Cut Oil Subsidies in Energy Reform</b>                  In the past three months, the Islamic Republic of Iran has begun eliminating energy subsidies, a move that could transform the way the country's economy works and influence reform in other energy-producing countries, IMF economists say. With the removal of subsidies on oil and gas, domestic demand for energy in Iran is expected to decline, leaving more energy resources available for export. If all goes according to plan, the strategy should serve the dual purpose of generating more revenue for the country and curbing the wasteful use of energy, IMF mission chief Dominique Guillaume and Senior Economist Roman Zyttek told the IMF Survey online.  <a href="http://www.imf.org/external/pubs/ft/survey/so/2010/int092810a.htm">http://www.imf.org/external/pubs/ft/survey/so/2010/int092810a.htm</a></p> <p><b>Reducing the impact of price shocks in energy-intensive economies</b>                  This paper argues that countries which have higher energy intensity – those that require more energy per unit of economic output – tend to suffer from deeper recessions and are more susceptible to price shocks. In addition, price rises, which cause demand to decrease in the short run and induce investments in efficiency in the longer run, are the major channel for causing reductions in energy intensity. Moreover, energy price subsidization dampens price signals and the pressure that they put on energy intensity, and is therefore associated with higher energy intensity. Price subsidization also involves significant fiscal costs, which have effects on the business cycle, amplifying the magnitude of downturns.  <a href="http://www.hks.harvard.edu/m-rcbg/heap/papers/HEEP%20DP%2016%20Matheny.pdf">http://www.hks.harvard.edu/m-rcbg/heap/papers/HEEP%20DP%2016%20Matheny.pdf</a></p>
<p>2009</p>	<p><b>Building Fossil-Fuel Subsidy Reform: Have We Got All The Blocks?</b>                  This policy brief outlines the building blocks needed to implement a multilateral program to reform fossil-fuel subsidies on a global scale.  <a href="http://www.iisd.org/gsi/december-2009-cop-15-special-edition-building-fossil-fuel-subsidy-reform-have-we-got-all-b">http://www.iisd.org/gsi/december-2009-cop-15-special-edition-building-fossil-fuel-subsidy-reform-have-we-got-all-b</a></p> <p><b>Car-Scrapping Schemes: An Effective Economic Rescue Policy?</b>                  This policy brief assesses the performance of car-scrapping schemes in Germany, Spain, France, the U.K. and the U.S. against their stated policy objectives.  <a href="http://www.iisd.org/gsi/december-2009-car-scrapping-schemes-effective-economic-rescue-policy">http://www.iisd.org/gsi/december-2009-car-scrapping-schemes-effective-economic-rescue-policy</a></p> <p><b>Achieving The G-20 Call to Phase Out Subsidies to Fossil Fuels</b>                  Following the September 2009 Pittsburgh Summit, this policy brief explores what G-20 countries need to do to follow through on their commitment to phase out fossil-fuel subsidies.  <a href="http://www.iisd.org/gsi/october-2009-achieving-g-20-call-phase-out-subsidies-fossil-fuels">http://www.iisd.org/gsi/october-2009-achieving-g-20-call-phase-out-subsidies-fossil-fuels</a></p>

2009	<p><b>What Should Inflation Targeting Countries Do When Oil Prices Rise and Drop Fast?</b>          After a long period of global price stability, in 2008 inflation increased sharply following unprecedented increases in the price of oil and other commodities, notably food. Although inflation remained lower and growth higher in inflation targeting countries than elsewhere, almost everywhere price stability seemed in jeopardy as consumer prices kept surging and central banks struggled to maintain expectations anchored.  <a href="http://www.imf.org/external/pubs/cat/longres.cfm?sk=22580.0">http://www.imf.org/external/pubs/cat/longres.cfm?sk=22580.0</a></p>
2008	<p><b>Coping with Oil Price Volatility</b>          Oil prices have been variable since the large price increases of the 1970s and 1980s. The wide price fluctuations in 2007, when daily spot prices for marker crudes nearly doubled between January and November, and fluctuations by more than US\$20 a barrel in early 2008 reinforce the idea that oil prices are volatile. Oil is important in every economy; when its prices are high and volatile, governments feel compelled to intervene.  <a href="http://www.esmap.org/sites/esmap.org/files/8142008101202_coping_oil_price.pdf">http://www.esmap.org/sites/esmap.org/files/8142008101202_coping_oil_price.pdf</a></p>
2006	<p><b>Coping with Higher Oil Prices</b>          The report covers policy alternatives adopted by developing country governments in response to the increases in world oil prices since the end of 2003. It further analyses what factors have affected the responses and what policy prices have been used by governments to mitigate the effects of higher oil prices on consumers, the government budget, and the total demand for oil.  <a href="http://siteresources.worldbank.org/INTOGMC/Resources/higheroilpricesuneditedjune2006.pdf">http://siteresources.worldbank.org/INTOGMC/Resources/higheroilpricesuneditedjune2006.pdf</a></p> <p><b>Overcoming Vulnerability to Rising Oil Prices: Options for Asia and the Pacific - Fuel to Change Livelihoods, Equity, Empowerment</b>          This report examines the impact of rising oil prices since 2003 on developing countries of the Asia-Pacific region. It represents a set of policy options and priorities that can help reduce national vulnerability to future price rises and protect the interests of the poor.  <a href="https://www.econbiz.de/Record/overcoming-vulnerability-to-rising-oil-prices-options-for-asia-and-the-pacific-fuel-to-change-livelihoods-equity-empowerment-stalker-peter/10003596284">https://www.econbiz.de/Record/overcoming-vulnerability-to-rising-oil-prices-options-for-asia-and-the-pacific-fuel-to-change-livelihoods-equity-empowerment-stalker-peter/10003596284</a></p>
2005	<p><b>Saving Oil in a Hurry</b>          This book provides an assessment of the potential oil savings and implementation costs of rapid oil demand restraint measures for transport. This tool box of measures includes new approaches towards telecommuting, car-pooling, transit use and “ecodriving” (fuel efficient driving styles), among other measures.  <a href="http://www.iea.org/publications/freepublications/publication/savingoil.pdf">http://www.iea.org/publications/freepublications/publication/savingoil.pdf</a></p>
2004	<p><b>Reducing Oil Consumption in Transport - Combining Three Approaches</b>          This paper provides an analysis of three promising vehicle technology and fuel-related areas for saving oil and reducing CO2 emissions from transport, and how strong policy measures in these areas could turn transport around by 2030.  <a href="http://s3.amazonaws.com/zanran_storage/www.iea.org/ContentPages/26165528.pdf">http://s3.amazonaws.com/zanran_storage/www.iea.org/ContentPages/26165528.pdf</a></p>

## 3 General Discussion

2015

### **The Great Plunge in Oil Prices: Causes, Consequences, and Policy Responses**

Following four years of relative stability at around \$105 per barrel (bbl), oil prices have declined sharply since June 2014 and are expected to remain low for a considerable period of time. The drop in prices likely marks the end of the commodity supercycle that began in the early 2000s. Since the past episodes of such sharp declines coincided with substantial fluctuations in activity and inflation, the causes and consequences of and policy responses to the recent plunge in oil prices have led to intensive debates. This paper addresses four questions at the centre of these debates, with particular emphasis on emerging market and developing economies.

[http://www.worldbank.org/content/dam/Worldbank/Research/PRN01\\_Mar2015\\_Oil\\_Prices.pdf](http://www.worldbank.org/content/dam/Worldbank/Research/PRN01_Mar2015_Oil_Prices.pdf)

### **Global Implications of Lower Oil Prices**

While lower oil prices can mean significant losses in revenue for some oil exporting countries, consumers should be paying less for fuel and have more money to spend. IMF's Aasim Husain says the higher spending will be good for global growth.

<http://www.imf.org/external/pubs/ft/sdn/2015/sdn1515.pdf>

### **Price at the Pump Comparison**

Do you think that filling up your tank is draining your wallet? Check out the infographic below to see where your country ranks.

<http://www.arabiangazette.com/price-at-the-pump-comparison-infographic-20150629/>

### **Declining Oil Prices Present Opportunities for Change**

This is the second instalment of a three-part series exploring the economic challenges faced by the Gulf Cooperation Council states: Saudi Arabia, Kuwait, the United Arab Emirates, Bahrain, Qatar and Oman. The first instalment explored the Gulf states' accumulation of wealth. The final instalment will examine each of the six Gulf nations in turn and details their key constraints.

<https://www.stratfor.com/analysis/declining-oil-prices-present-opportunities-change-0>

### **3 Steps to Decarbonizing Development for a Zero-Carbon Future**

To keep temperatures from rising more than 2 degrees Celsius, as governments have agreed, will require transforming how the world uses energy. Electricity from clean energy sources plays an important role. A new World Bank report lays out three steps for a smooth transition to a zero-carbon future and provides data, examples and policy advice to help countries make the shift.

<http://www.worldbank.org/en/news/feature/2015/05/11/decarbonizing-development-zero-carbon-future>

### **Global energy-related emissions of carbon dioxide stalled in 2014**

Data from the International Energy Agency (IEA) indicate that global emissions of carbon dioxide from the energy sector stalled in 2014, marking the first time in 40 years in which there was a halt or reduction in emissions of the greenhouse gas that was not tied to an economic downturn.

<http://www.iea.org/newsroomandevents/news/2015/march/global-energy-related-emissions-of-carbon-dioxide-stalled-in-2014.html>

### **Looking for cheap fuel in Africa or want to smuggle it? Here is where you'll find it**

A curious phenomenon exists in Africa, where countries with very high prices border those where fuel is cheap - making oil smuggling very lucrative

<http://mgafrica.com/article/2015-01-08-looking-for-cheap-fuel-heres-where-you-need-to-live>

2014

### **Developing countries subsidise fossil fuel use**

The International Energy Agency (IEA) annually estimates global fossil fuel consumption subsidies that measure what many developing countries spend to provide below market cost fuel to their citizens. In 2013, IEA found that fossil fuel consumption subsidies totalled US\$548 billion, 4% lower than 2012.

<http://www.energyglobal.com/news/processing/articles/Fossil-fuel-consumption-subsidies-1752.aspx#.VI1Ovyvz08A>

**Cheaper oil - Many winners, a few bad losers**

A lower price will boost the world economy and harm some unpleasant regimes—but there are risks

<http://www.economist.com/news/leaders/21627619-lower-price-will-boost-world-economy-and-harm-some-unpleasant-regimesbut-there-are>

**Soaring of the Gulf Falcons: Diversification in the GCC Oil Exporters in Seven Propositions**

A key priority for the Gulf Cooperation Council (GCC) countries is to create a dynamic non-oil tradable sector to support sustainable growth. Since export diversification takes a long time, it has to start now. We argue that the failure to diversify away from oil stems mainly from market failures rather than government failures. To tackle market failures, the government needs to change the incentive structure for workers and firms. Experiences of oil exporters that managed to diversify suggest that a focus on competing in international markets and an emphasis on technological upgrade and climbing the “quality ladder” are crucial.

<http://www.imf.org/external/pubs/cat/longres.aspx?sk=42365.0>

**How Much Carbon Pricing is in Countries' Own Interests? The Critical Role of Co-Benefits**

This paper calculates, for the top twenty emitting countries, how much pricing of carbon dioxide (CO<sub>2</sub>) emissions is in their own national interests due to domestic co-benefits (leaving aside the global climate benefits). On average, nationally efficient prices are substantial, USD57.5 per ton of CO<sub>2</sub> (for year 2010), reflecting primarily health co-benefits from reduced air pollution at coal plants and, in some cases, reductions in automobile externalities (net of fuel taxes/subsidies). Pricing co-benefits reduces CO<sub>2</sub> emissions from the top twenty emitters by 13.5 percent (a 10.8 percent reduction in global emissions). However, co-benefits vary dramatically across countries (e.g., with population exposure to pollution) and differentiated pricing of CO<sub>2</sub> emissions therefore yields higher net benefits (by 23 percent) than uniform pricing. Importantly, the efficiency case for pricing carbon's co-benefits hinges critically on (i) weak prospects for internalizing other externalities through other pricing instruments and (ii) productive use of carbon pricing revenues.

<http://www.imf.org/external/pubs/cat/longres.aspx?sk=41924.0>

**Climate Change: Major Global Shift to Public Transport Can Cut Emissions by 40%**

A shift from car-centric transport to one based on public transport, walking and cycling can reduce carbon dioxide emissions by as much as 1542 megatons (1700 megatons) by 2050. This amounts to a 40% reduction in emissions from the business-as-usual scenario, which can go up to 55% reductions when fuel economy contributions are added. Besides 61 trillion pounds savings in spendings on cars and fuels, this would also deliver sizeable health benefits, says a new report from the Institute for Transportation and Development Policy (ITDP) and University of California, Davis.

<https://www.itdp.org/wp-content/uploads/2014/09/ITDP-High-Shift-release-FINAL-14-Sept.pdf>

**Understanding the Plunge in Oil Prices: Sources and Implications**

Oil prices fell sharply in the second half of 2014, bringing to an end a four-year period of stability around \$105 per barrel.<sup>2</sup> The decline, which is much larger than that of the non-oil commodity price indices compared to early-2011 peaks, may signal an end to a price “supercycle”.<sup>3</sup> Oil prices are expected to remain low in 2015 and rise only marginally in 2016 (Chapter 1). The sources and implications of the sharp decline in oil prices have led to intensive debate.

[http://www.worldbank.org/content/dam/Worldbank/GEP/GEP2015a/pdfs/GEP2015a\\_chapter4\\_report\\_oil.pdf](http://www.worldbank.org/content/dam/Worldbank/GEP/GEP2015a/pdfs/GEP2015a_chapter4_report_oil.pdf)

**The relationship between fuel prices and traffic pollution levels**

A QUT health statistician is urging Australian policy makers to provide more incentives for motorists to use alternative transport. In a paper published in the journal Environment International, Associate Professor Adrian Barnett examined the relationship between petrol and diesel prices in Brisbane and traffic pollution levels in the 16 days after changes in fuel prices. He found higher petrol prices had no effect on pollution levels but higher diesel prices led to significant short-term reductions in carbon monoxide and nitrogen oxides in Brisbane's air.

<http://phys.org/news/2014-02-relationship-fuel-prices-traffic-pollution.html>

**The future of oil - Yesterday's fuel**

THE dawn of the oil age was fairly recent. Although the stuff was used to waterproof boats in the Middle East 6,000 years ago, extracting it in earnest began only in 1859 after an oil strike in Pennsylvania. The first barrels of crude fetched USD18 (around USD450 at today's prices). It was used to make kerosene, the main fuel for artificial lighting after overfishing led to a shortage of whale blubber.

<http://www.economist.com/news/leaders/21582516-worlds-thirst-oil-could-be-nearing-peak-bad-news-producers-excellent>

2014

2013

2013

#### **The global oil industry – Supermajordämmerung**

ON THE surface, things look pretty good for the big, listed oil companies. The world wants more of what they produce than ever before. The price it sells for is high and the profits are rolling in. Exxon Mobil, with a market capitalisation of USD417 billion, vies with Apple as the world's most valuable listed company.

<http://www.economist.com/news/briefing/21582522-day-huge-integrated-international-oil-company-drawing>

#### **Global Oil Demand Growth – The End Is Nigh**

After decades of robust growth in oil demand, the broad consensus in the oil industry and the analytic community is that oil demand will continue its inexorable rise through to 2030.

<https://ir.citi.com/GvM5rfJy51UU65Qdd%2Fd3Bqv0xQsLGi1ITOs%2B020IG3aCM6B8O75sA%3D%3D>

#### **Effects of Fossil Fuel Developments on Meeting 2°C Scenarios**

Recent years have seen an increasing activity in developing new fossil fuel production capacity. This includes unconventional fossil fuels, such as tar sands and shale gas, fossil fuels from remote locations, and fossil fuels with a very large increase in production in the near future. In this Ecofys report by order of Greenpeace International, the impact of such developments on our ability to mitigate climate change is investigated.

<http://www.ecofys.com/files/ecofys-2013-effects-fossil-fuel-developments-two-degrees.pdf>

#### **Fuel to Burn: Now What?**

The reversal of fortune in America's energy supplies in recent years holds the promise of abundant and cheaper fuel, and it could have profound effects on what people drive, domestic manufacturing and America's foreign policy.

[http://www.nytimes.com/2012/04/11/business/energy-environment/energy-boom-in-us-upends-expectations.html?\\_r=1](http://www.nytimes.com/2012/04/11/business/energy-environment/energy-boom-in-us-upends-expectations.html?_r=1)

#### **Keeping it to themselves - Gulf states not only pump oil; they burn it, too**

Saudi Arabia, the only OPEC member with enough spare capacity to make up supply shortfalls, is the best hope of keeping the market stable. The Saudis recently reiterated their pledge to keep the market well supplied as American and European Union sanctions hit Iran. Over time, other producers in the Persian Gulf may be able to pump more. Iraq—and Iran itself—have vast oilfields that could eventually provide markets with millions more barrels a day (b/d). All this is conventional wisdom.

<http://www.economist.com/node/21551484>

#### **The Differential Effects of Oil Demand and Supply Shocks on the Global Economy**

We employ a set of sign restrictions on the generalized impulse responses of a Global VAR model, estimated for 38 countries/regions over the period 1979Q2–2011Q2, to discriminate between supply-driven and demand-driven oil-price shocks and to study the time profile of their macroeconomic effects for different countries. The results indicate that the economic consequences of a supply-driven oil-price shock are very different from those of an oil-demand shock driven by global economic activity, and vary for oil-importing countries compared to energy exporters. While oil importers typically face a long-lived fall in economic activity in response to a supply-driven surge in oil prices, the impact is positive for energy-exporting countries that possess large proven oil/gas reserves. However, in response to an oil-demand disturbance, almost all countries in our sample experience long-run inflationary pressures and a short-run increase in real output.

<http://www.imf.org/external/pubs/cat/longres.aspx?sk=40062.0>

#### **The Future of Oil: Geology versus Technology**

We discuss and reconcile two diametrically opposed views concerning the future of world oil production and prices. The geological view expects that physical constraints will dominate the future evolution of oil output and prices. It is supported by the fact that world oil production has plateaued since 2005 despite historically high prices, and that spare capacity has been near historic lows. The technological view of oil expects that higher oil prices must eventually have a decisive effect on oil output, by encouraging technological solutions. It is supported by the fact that high prices have, since 2003, led to upward revisions in production forecasts based on a purely geological view.

<http://www.imf.org/external/pubs/cat/longres.aspx?sk=25884.0>

#### **Should We be Concerned About Competition Between Food and Fuel?**

This policy brief discusses the impact of European Union and United States consumption targets on food commodity prices and provides a number of recommendations to help reduce competition between already constrained agricultural markets and increasing biofuel production.

<http://www.iisd.org/gsi/should-we-be-concerned-about-competition-between-food-and-fuel>

2012

2012

**Oil price risks and pump price adjustments**

Between 1999 and 2008, world oil prices more than quadrupled in real terms. For oil importers, vulnerability to oil price increases, defined as the share of gross domestic product spent on net oil imports, rose considerably. Considering medians, low-income countries had the highest vulnerability in 2008 and the highest increase in vulnerability between 1999 and 2008. When changes in vulnerability were decomposed into several contributing factors, more than two-thirds of 170 countries studied were found to have offset the increase in the value of oil consumption by reducing the oil intensity of gross domestic product. Oil intensity fell in more than half the countries in every income group and in every region of the world, driven by falling energy intensity and, to a lesser extent, the oil share of energy. This study also examines the degree of pass-through to consumers of increases in world prices of gasoline, diesel, kerosene, and liquefied petroleum gas between January 2009 and January 2012, when oil prices in nominal U.S. dollars more than doubled.

<http://elibrary.worldbank.org/doi/abs/10.1596/1813-9450-6227>

**Oil Exporters' Dilemma: How Much to Save and How Much to Invest**

Policymakers in oil-exporting countries confront the question of how to allocate oil revenues among consumption, saving, and investment in the face of high income volatility. We study this allocation problem in a precautionary saving and investment model under uncertainty. Consistent with data in the 2000s, precautionary saving is sizable and the marginal propensity to consume out of permanent shocks is below one, in stark contrast to the predictions of the perfect foresight model. The optimal investment rate is high if productivity in the tradable sector is high enough.

<http://www.imf.org/external/pubs/cat/longres.aspx?sk=25518.0>

**Automobile use, fuel economy and CO2 emissions in industrialized countries: Encouraging trends through 2008?**

Car use and fuel economy are factors that determine oil demand and carbon dioxide (CO<sub>2</sub>) emissions. Recent data on automobile utilization and fuel economy reveal surprising trends that point to changes in oil demand and CO<sub>2</sub> emissions. New vehicle and on-road fleet fuel economy have risen in Europe and Japan since the mid-1990s, and in the US since 2003. Combined with a plateau in per capita vehicle use in all countries analysed, these trends indicate that per capita fuel use and resultant tail-pipe CO<sub>2</sub> emissions have stagnated or even declined.

<http://ideas.repec.org/a/eee/trapol/v18y2011i2p358-372.html>

**Oil-Price Boom and Real Exchange Rate Appreciation: Is There Dutch Disease in the CEMAC?**

The paper employs a heuristic comparative approach suggested by Ismail (2009) to search for evidence of Dutch disease in oil-rich countries of the Central African Economic and Monetary Community (CEMAC).

<http://www.imf.org/external/pubs/cat/longres.aspx?sk=25362.0>

2011

**Determinants of Non-oil Growth in the CFA-Zone Oil Producing Countries: How do they Differ?**

Non-oil growth in the CFA oil exporting countries has been lacklustre despite their great natural resource wealth. In this paper we study the key determinants of non-oil growth and explore to what extent these countries differ from countries with comparable levels of development that do not depend on non-renewable resources. Using a panel of 38 countries comprising LICs and CFA zone oil exporters, we find that while real exchange rate appreciation negatively impacted growth in all countries over the period 1985-2008, what distinguishes the oil producers of the CFA zone is the failure of public and private investment to spur non-oil growth.

<http://www.imf.org/external/pubs/cat/longres.aspx?sk=25285.0>

**Will Natural Gas Prices Decouple from Oil Prices across the Pond?**

We show that US natural gas prices have decoupled from oil prices following substantial institutional and technological changes. We then examine how this interrelationship has evolved in Europe using data for Algeria, one of Europe's key gas suppliers. Taking into account total gas exports and cyclical conditions in partner countries, we find that gas prices remain linked to oil prices, though the nexus has loosened. Both high oil prices and a modest industrial recovery in partner countries have kept gas exports at low levels in recent years, suggesting changing market forces. The paper then shows how such shifts can have important macroeconomic implications for a big gas exporter such as Algeria.

<http://www.imf.org/external/pubs/cat/longres.aspx?sk=24980.0>

2011

**Petroleum Markets in Sub-Saharan Africa**

This regional study takes 12 oil-importing countries in Sub-Saharan Africa and asks the following two questions: Does each stage in the supply chain, from import of crude oil or refined products to retail, seem to be efficiently run and are the efficiency gains passed on to end-users? If not, what are the potential causes and possible means of remedying the problems?

[http://siteresources.worldbank.org/INTOGMC/Resources/336099-1158588096604/eifd15\\_ssa\\_oil\\_markets.pdf](http://siteresources.worldbank.org/INTOGMC/Resources/336099-1158588096604/eifd15_ssa_oil_markets.pdf)

**Transport Fuel Prices in Sub-Saharan Africa: Explanation, impact and policies**

Why look at SSA transport fuel prices now? How do SSA transport fuel prices compare with those in other regions? Variation in transport fuel prices between SSA counties. The structure of transport fuel prices in SSA countries. What can be done to reduce high prices or their impact?

<http://siteresources.worldbank.org/INTTRANSPORT/Resources/336291-1297096897336/7715763-1297096955872/Presentation-Carruthers.pdf>

**Burning Oil to Keep Cool: The Hidden Energy Crisis in Saudi Arabia**

Saudi Arabia's place in the world oil market is threatened by unrestrained domestic fuel consumption. In an economy dominated by fossil fuels and dependent on the export of oil, current patterns of energy demand are not only wasting valuable resources and causing excessive pollution, but also rendering the country vulnerable to economic and social crises. This report explains why the need for change is urgent, and what options and challenges the Saudi government faces in trying to address the politically sensitive issue of domestic energy prices.

<http://www.chathamhouse.org/publications/papers/view/180825>

**Oil Prices, External Income, and Growth: Lessons from Jordan**

This paper extends the long-run growth model of Esfahani et al. (2009) to a labour exporting country that receives large inflows of external income—the sum of remittances, FDI and general government transfers—from major oil-exporting economies. The theoretical model predicts real oil prices to be one of the main long-run drivers of real output. The empirical analysis of the paper confirms the hypothesis that a large share of Jordan's output volatility can be associated with fluctuations in net income received from abroad. External factors, however, cannot be relied upon to provide similar growth stimuli in the future, and therefore it will be important to diversify the sources of growth in order to achieve a high and sustained level of income.

<http://www.imf.org/external/pubs/cat/longres.aspx?sk=25428.0>

**Oil Spill(over)s: Linkages in Petroleum Product Pricing Policies in West African Countries**

This paper addresses a number of issues regarding petroleum product pricing in Western Africa emphasizing international spill overs. We use panel unit root tests and long-run modelling based on vector error correction models to assess links and convergence in petroleum product prices across countries. Our results indicate that in general over the long-run there is convergence in prices across the countries.

<http://www.imf.org/external/pubs/cat/longres.aspx?sk=24826.0>

2010

**The Distributional Effects of Oil Price Changes on Household Income: Evidence from Mali**

Many net oil-importing developing countries, particularly African economies, have faced economic difficulties with high oil price increases. As a case study, this paper assesses the distributional effects of a rise in various petroleum product prices in Mali using a standard computable general equilibrium model. The results suggest that rising diesel prices primarily affect richer households, while the poorest ones tend to suffer more from higher kerosene and gasoline prices. Overall, the impact of fuel prices on household budgets shows a U-shaped relationship with expenditure per capita. Regardless of the oil product considered, high-income households benefit disproportionately from oil price subsidies. This suggests that petroleum price subsidies are ineffective in protecting the income of poor households compared with a targeted subsidy.

[http://econpapers.repec.org/article/oupjafrec/v\\_3a19\\_3ay\\_3a2010\\_3ai\\_3a2\\_3ap\\_3a205-236.htm](http://econpapers.repec.org/article/oupjafrec/v_3a19_3ay_3a2010_3ai_3a2_3ap_3a205-236.htm)

**Retail Fuel Price Response to Oil Price Shocks in EU Countries**

There is a widely held belief that retail fuel prices rise very quickly following an increase in international oil prices but fall slowly when oil prices decrease. This study uses data from European Union countries to investigate the response of retail gasoline prices to changes in the world oil price. The findings indicate significant variation in the adjustment mechanism across countries. Fluctuations in the international price of oil are transported to local prices with some delay but evidence of asymmetric adjustment is fairly weak.

[http://www.uce.ac.cy/erc/documents/Clerides\\_Full\\_Text.010.pdf](http://www.uce.ac.cy/erc/documents/Clerides_Full_Text.010.pdf)



2009	<p><b>Do speculators drive crude oil prices? Dispersion in beliefs as a price determinant</b> Do speculators drive crude oil prices? Dispersion in beliefs as a price determinant Before Gary Gensler became its chairman, the US Commodity Futures Trading Commission (CFTC) held the view that speculators had little influence on the price of crude oil, but since then a reassessment has been taking place. This article measures speculator activity on the basis of variables contained in the weekly CFTC market reports and analyses speculator influence on crude oil prices and crude oil price volatility using econometric procedures. <a href="http://www.dbresearch.com/MAIL/DBR_INTERNET_EN-PROD/PROD000000000251256.pdf">http://www.dbresearch.com/MAIL/DBR_INTERNET_EN-PROD/PROD000000000251256.pdf</a></p>
2008	<p><b>Understanding Crude Oil Prices</b> This paper examines the factors responsible for changes in crude oil prices. The paper reviews the statistical behaviour of oil prices, relates these to the predictions of theory, and looks in detail at key features of petroleum demand and supply. Topics discussed include the role of commodity speculation, OPEC, and resource depletion. The paper concludes that although scarcity rent made a negligible contribution to the price of oil in 1997, it could now begin to play a role. <a href="http://www.economicclimatechange.com/2008/11/understanding-crude-oil-prices.html">http://www.economicclimatechange.com/2008/11/understanding-crude-oil-prices.html</a></p> <p><b>Food and Fuel Prices-Recent Developments, Macroeconomic Impact, and Policy Responses -An Update</b> These findings reinforce the importance of adopting appropriate policies to maintain macroeconomic stability while protecting the poor. <a href="http://www.nber.org/papers/w14492">http://www.nber.org/papers/w14492</a></p> <p><b>The Balance of Payments Impact of the Food and Fuel Price Shocks on Low-Income African Countries: A Country-by-Country Assessment</b> This note discusses the implications of the price shocks for the balance of payments of low-income countries in sub-Saharan Africa. To this end, the note identifies a list of 18 countries in the region that are especially hard-hit and that consequently face a pressing need for additional balance of payments and budget support. <a href="http://www.imf.org/external/np/pp/eng/2008/063008a.pdf">http://www.imf.org/external/np/pp/eng/2008/063008a.pdf</a></p> <p><b>High Oil Prices Matter? - Evidence on the Mobility Behaviour of German Households</b> Focusing on travel survey data from Germany, this paper investigates the determinants of automobile travel, with the specific aim of quantifying the effects of fuel prices and fuel economy. <a href="http://www.rwi-essen.de/publikationen/ruhr-economic-papers/20/">http://www.rwi-essen.de/publikationen/ruhr-economic-papers/20/</a></p> <p><b>How Do Gasoline Prices Affect Fleet Fuel Economy?</b> Exploiting a rich data set of passenger vehicle registrations in twenty U.S. metropolitan statistical areas from 1997 to 2005, the authors examine the effects of gasoline prices on the automotive fleet's composition. They find that high gasoline prices affect fleet fuel economy through two channels: (1) shifting new auto purchases towards more fuel-efficient vehicles, and (2) speeding the scrappage of older, less fuel-efficient used vehicles. <a href="http://www.nber.org/papers/w14450">http://www.nber.org/papers/w14450</a></p>
2005	<p><b>The Challenge of Higher Oil Prices</b> The research paper gives helpful advice which way to choose in adjusting to higher oil prices in Asia. It further elaborates on the question why oil prices are so high and it proposes policy recommendations. <a href="https://www.oxfordeconomics.com/publication/open/222575">https://www.oxfordeconomics.com/publication/open/222575</a></p> <p><b>The Impact of Higher Oil Prices on Low Income Countries and the Poor</b> This note is designed to provide a brief overview on the impact of current oil price increases on low income countries and poorer households. <a href="https://www.esmap.org/sites/esmap.org/files/KES01_The%20Impact%20of%20Higher%20Oil%20Prices%20on%20Low%20Income%20Countries%20and%20the%20Poor.pdf">https://www.esmap.org/sites/esmap.org/files/KES01_The%20Impact%20of%20Higher%20Oil%20Prices%20on%20Low%20Income%20Countries%20and%20the%20Poor.pdf</a></p> <p><b>Ghana: Evaluating the Fiscal and Social Costs of Increases in Domestic Fuel Prices</b> This paper reflects the analysis of the fiscal and social implications of domestic fuel price increases in Ghana with specific focus on resulting impacts and distributions issues. The work further identifies alternative approaches to mitigate the adverse effects of price increases on poor households and actual government policy response. <a href="http://siteresources.worldbank.org/INTPSIA/Resources/490023-1120841262639/ch11_ghana.pdf">http://siteresources.worldbank.org/INTPSIA/Resources/490023-1120841262639/ch11_ghana.pdf</a></p> <p><b>The Structure of the Oil Market and Causes of High Prices</b> This note examines how crude oil, futures, and petroleum product markets interact to determine market outcomes. <a href="https://www.imf.org/external/np/pp/eng/2005/092105o.htm">https://www.imf.org/external/np/pp/eng/2005/092105o.htm</a></p>

2004

**Analysis of the Impact of High Oil Prices on the Global Economy**

This paper reviews how oil prices affect the macro-economy and assesses the extent to which the economies of OECD and developing countries remain vulnerable to a sustained period of higher oil prices. It summarises the findings of a quantitative exercise carried out by the IEA in collaboration with the OECD Economics Department and with the assistance of the International Monetary Fund (IMF) Research Department.

[http://www.iea.org/textbase/npsum/high\\_oil04sum.pdf](http://www.iea.org/textbase/npsum/high_oil04sum.pdf)

## 4 Statistical Data

### World Energy Outlook 2015

The World Energy Outlook is recognised as the most authoritative source of strategic analysis of global energy markets. It is regularly used as input to the development of government policies and business strategies and raises public awareness of the key energy and environmental challenges the world is facing.  
<http://worldenergyoutlook.org/publications/weo-2015/>

### 2015 Global oil and gas tax guide

This guide summarizes the oil and gas corporate tax regimes in 74 countries.  
<http://www.ey.com/GL/en/Services/Tax/Global-oil-and-gas-tax-guide---Country-list>

### Pacific Fuel Price Monitor 2014

The latest edition of the Pacific Fuel Price Monitor  
<http://www.spc.int/edd/en/document-download/viewcategory/77-pacific-fuel-price-monitor>

### Key World Energy Statistics 2014

The IEA produced its first handy, pocket-sized summary of key energy data in 1997 and every year since then it has been more and more successful.  
<https://www.iea.org/publications/freepublications/publication/key-world-energy-statistics-2014.html>

### Energy Outlook 2030

The outlook highlights the growing role of developing economies in global energy consumption, and the increasing share of non-fossil fuels in global energy supply. It emphasizes the central role markets and well-designed policy can play to meet the dual challenge of solving the energy needs of billions of people who aspire to better lifestyles, and doing so in a way that is sustainable and secure. It also notes the uncertainties attached to any long term projection. The discipline of building a numerical projection sharpens our thinking, but the precise numbers are less important than the underlying story of the challenges we all face and the choices we make in producing and consuming energy.  
[http://www.bp.com/content/dam/bp/pdf/statistical-review/BP\\_World\\_Energy\\_Outlook\\_booklet\\_2013.pdf](http://www.bp.com/content/dam/bp/pdf/statistical-review/BP_World_Energy_Outlook_booklet_2013.pdf)

### European Commission; Energy Prices and Costs

'Energy Prices and Costs Report,' seeks to inform policy makers on recent energy price increases in Europe and their impact on energy consumers. The report describes the drivers for rising retail energy prices, with a focus on electricity and gas, and analyses how their prices have evolved in recent years in different EU member States.  
<http://ec.europa.eu/energy/en/publications/energy-prices-and-costs-europe>

### OECD: Budgetary support and tax expenditures

The importance of reforming policies supporting fossil fuels was explicitly recognised in the OECD's June 2009 Declaration on Green Growth, in which 34 countries vowed to "encourage domestic policy reform, with the aim of avoiding or removing environmentally harmful policies that might thwart green growth, such as subsidies: to fossil fuel consumption or production that increase greenhouse gas emissions...". To further support those initiatives, the OECD and the IEA have been compiling estimates of subsidies and other support measures for a large number of countries. This site brings together the OECD inventory of estimated budgetary support and tax expenditures relating to the production or use of fossil fuels in its member economies, and IEA data on consumption subsidies, primarily in developing and emerging economies.  
[http://www.oecd.org/site/0,3407,en\\_21571361\\_48776931\\_1\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/site/0,3407,en_21571361_48776931_1_1_1_1_1,00.html)

### Gasoline and Diesel Prices and Taxes in industrialized countries

This study looks at price and tax levels for automobile fuels in industrialized countries, the members of the Organisation for Economic Co-operation and Development (OECD). These issues will be examined in a comparative perspective. Gasoline and diesel will be analysed, also known as diesel fuel. The primary source of statistics used is the International Energy Agency's Energy Prices and Taxes publication from the second quarter 2008, from where most figures cited in the tables and graphs come.  
[http://s3.amazonaws.com/zanran\\_storage/www.ifri.org/ContentPages/17154247.pdf](http://s3.amazonaws.com/zanran_storage/www.ifri.org/ContentPages/17154247.pdf)

### Excise Duty Tables Part II – Energy products and Electricity

In collaboration with the Member States, the European Commission has established the "EXCISE DUTY TABLES" showing rates in force in the Member States of the European Union. This publication aims to provide up-to-date information on Member States main excise duty rates as they apply to typical products. The information is supplied by the respective Member States. The Commission cannot be held responsible for its accuracy or completeness, neither does its publication imply an endorsement by the Commission of those Member States' legal provisions. It is intended that Member States will regularly communicate to the Commission all modifications of the rates covered by this publication and that revised editions of the tables will be published twice a year.  
[http://ec.europa.eu/taxation\\_customs/resources/documents/taxation/excise\\_duties/energy\\_products/rates/excise\\_duties-part\\_ii\\_energy\\_products\\_en.pdf](http://ec.europa.eu/taxation_customs/resources/documents/taxation/excise_duties/energy_products/rates/excise_duties-part_ii_energy_products_en.pdf)

## Fuel Price Policies – Reading List 2001-2015

### **Motor Vehicle Taxation: EU Summary, 2012**

Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Sweden, United Kingdom

<http://www.cesifo-group.de/de/ifoHome/facts/DICE/Infrastructure/Transportation/Road-Transport/Mot-veh-tax-rev-EU15-.html>

### **Overview of CO<sub>2</sub>-based motor vehicle taxes in the EU**

CO<sub>2</sub> taxation is now well established across the European Union. 20 EU member states currently apply some form of

CO<sub>2</sub> tax to the registration and/or ownership of passenger cars, up from 17 in 2010.

[http://www.acea.be/uploads/publications/CO\\_2\\_Tax\\_overview\\_2014.pdf](http://www.acea.be/uploads/publications/CO_2_Tax_overview_2014.pdf)

### **Clean Cities Alternative Fuel Price Report**

Clean Cities Alternative Fuel Price Report is a quarterly report designed to keep you up to date on the prices of alternative fuels and conventional fuels in the U.S.

[http://www.afdc.energy.gov/uploads/publication/alternative\\_fuel\\_price\\_report\\_january\\_2014.pdf](http://www.afdc.energy.gov/uploads/publication/alternative_fuel_price_report_january_2014.pdf)

# 5 About Us

## Our Contributions

2015	<p><b>International Fuel Price Survey 2014</b> Data preview <a href="http://www.giz.de/expertise/downloads/giz-2015-en-ifp2014.pdf">http://www.giz.de/expertise/downloads/giz-2015-en-ifp2014.pdf</a></p>
2014	<p><b>International fuel prices 2012/2013 published</b> The 2012/2013 International Fuel Prices report provides an overview of the retail prices of Gasoline and Diesel in over 170 countries based on our survey in November 2012. <a href="http://www.giz.de/expertise/downloads/giz2014-en-international-fuel-prices-2013.pdf">http://www.giz.de/expertise/downloads/giz2014-en-international-fuel-prices-2013.pdf</a></p> <p><b>Sector-Specific Reforms: Petroleum and Electricity</b> Presentation for Reforming Fossil Fuel Subsidies for an Inclusive Green Economy Conference – 28-29/04/ 2014 in Nairobi, Kenya <a href="http://www.unep.org/greeneconomy/Portals/88/Research%20Products/Session%203b_Armin%20Wagner_GIZ%20-%20Copy.pdf">http://www.unep.org/greeneconomy/Portals/88/Research%20Products/Session%203b_Armin%20Wagner_GIZ%20-%20Copy.pdf</a></p>
2013	<p><b>International Fuel Prices 2012/2013</b> Data preview <a href="http://www.giz.de/expertise/downloads/Fachexpertise/giz2013-en-ifp2013.pdf">http://www.giz.de/expertise/downloads/Fachexpertise/giz2013-en-ifp2013.pdf</a></p>
2012	<p><b>International Fuel Prices 2010/2011</b> This edition is based on our survey in mid-November 2010 and provides a snapshot based on the crude oil price level of USD 81 per barrel. <a href="http://www.giz.de/expertise/downloads/giz2012-en-ifp2010.pdf">http://www.giz.de/expertise/downloads/giz2012-en-ifp2010.pdf</a></p>
2011	<p><b>Fuel Price Reform in Bolivia</b> The failure to increase prices for fossil fuels in Bolivia is an important case study of reform strategies for countries with low prices and ad-hoc pricing measures. Everything that could go wrong, went wrong in the implementation of the price hike in Bolivia in December 2010. This is a classic example for the consequences of ad hoc price setting mechanisms. Our paper provides a brief evaluation of the failed reform attempt from our perspective. <a href="http://www.giz.de/expertise/downloads/Fachexpertise/giz2011-en-fuel-price-reform-bolivia-december-2010.pdf">www.giz.de/expertise/downloads/Fachexpertise/giz2011-en-fuel-price-reform-bolivia-december-2010.pdf</a></p>
2010	<p><b>Fossil Fuel Prices in the Arab World</b> In light of the G-20's commitments to phase out inefficient fossil-fuel subsidies that encourage wasteful consumption, reform of fossil-fuel subsidies has come into the spotlight. No subsidy reform, however, can take place without a reform of the pricing mechanism. In this context, Arab countries can be noted for their heavy subsidization of fossil fuels. Also ad hoc pricing of petroleum products is dominant there. With the exception of a few countries, it is also a region, where the least action has been made in recent years to tackle the subject. Reforms are small and subject to fall backs. This working paper contributes to the ongoing discussion by sketching the Arab countries' current pricing mechanisms, the rationale behind this system of consumer subsidies and ad hoc pricing, the inevitable need for reform, and eventual attempts to draw pathways for reform. <a href="http://www.giz.de/expertise/downloads/Fachexpertise/giz2010-en-fuel-prices-in-the-arab-world.pdf">http://www.giz.de/expertise/downloads/Fachexpertise/giz2010-en-fuel-prices-in-the-arab-world.pdf</a></p>
2009	<p><b>Discussion Paper: Energy Subsidies: Why, When and How?</b> This report discusses the rationale and performance of energy subsidies, proposes a new tool for subsidy evaluation and design, applies this tool to the analysis of prominent subsidy schemes, and draws conclusions. Energy subsidies typically reduce welfare by creating massive market distortions and significant GDP losses. However, subsidies can make economic sense in specific cases, which we discuss and quantify by applying basic economic theory in illustrative examples. <a href="http://www.giz.de/expertise/downloads/gtz2009-en-energy-subsidies-a-think-piece.pdf">http://www.giz.de/expertise/downloads/gtz2009-en-energy-subsidies-a-think-piece.pdf</a></p>
2008	<p><b>Exploit falling markets - Fuel Pricing Mechanisms</b> The current phase of sharply declining crude oil and petroleum product prices offers an opportunity for a critical investigation of the absolute level of pump prices for fuel and the nature and manner of adjustment of the price level. This includes the opportunity to move from ad hoc pricing towards formula-based automatic pricing at relatively low political cost. The same applies to the elimination of direct and indirect subsidies which should continue in parallel, and to the imposition of (possibly earmarked) tax on fuel. The discussion paper provides an overview of forms of fuel pricing in the transport sector. <a href="http://www.giz.de/expertise/downloads/gtz2008-en-exploit-falling-markets.pdf">http://www.giz.de/expertise/downloads/gtz2008-en-exploit-falling-markets.pdf</a></p>

## More Information

- International Fuel Prices: [www.giz.de/fuelprices](http://www.giz.de/fuelprices)
- Sustainable Urban Transport including “Sustainable Transport: Sourcebook for Policy-makers in Developing Cities”: [www.sutp.org](http://www.sutp.org)
- GIZ Transport and Mobility: [www.giz.de/transport](http://www.giz.de/transport)
- Transport and Climate Change: [www.transport2020.org](http://www.transport2020.org)

## Our Resources

### GIZ FUEL PRICE NEWS

- Monthly collection of global fuel price news
- Recommended reading on related publications

Subscribe here: [armin.wagner@giz.de](mailto:armin.wagner@giz.de)

## Factsheets

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- Pricing policy
- Transparency evaluation

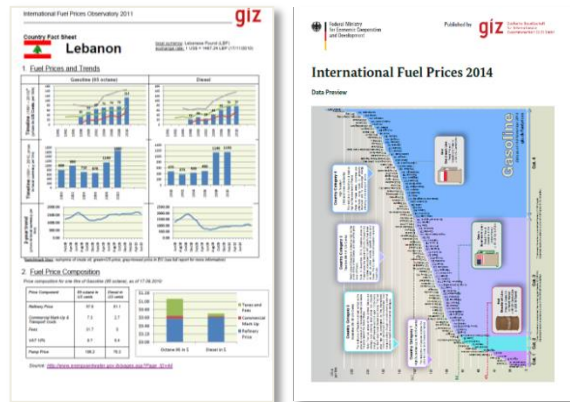
Learn more here:

[www.energypedia.info-International\\_Fuel\\_Prices](http://www.energypedia.info-International_Fuel_Prices)

## Report “International Fuel Prices”

- Overview and data on retail prices of gasoline and diesel in more than 170 countries
- Detailed information on price levels, pricing dimension, subsidies, taxation, regulation and transparency
- Published every two years

Download here: [www.giz.de/fuelprices](http://www.giz.de/fuelprices).



### GIZ Fuel Price News JULY 2015

Brent Crude as of 20 July 2015: 56.54 USD (52.20 EUR) per Barrel

Please enjoy our overview on current fuel price trends and developments worldwide.

Your Editorial Team

#### 1) New Publications and Events

##### Global Implications of Lower Oil Prices

While lower oil prices can mean significant losses in revenue for some oil exporting countries, consumers should be paying less for fuel and spending will be good for global growth. [http://www.enf.org/system/uploads/attachment\\_data/file/151515.pdf](http://www.enf.org/system/uploads/attachment_data/file/151515.pdf)

##### 3 QUESTIONS - Northern Hemisphere summer driving season

Ah, summer! Time for the beach, maybe, or the mountains? Wherever people take their summer break, they often get there by auto. So what oil demand and supply? Matthew Parry, one of the IEA analysts who produce the monthly Oil Market Report and annual Medium-Term Oil Market Outlook. <http://www.iea.org/newsroomandevents/pressreleases/news/3-questions-to-northern-hemisphere-summer-driving-season.html>

##### Price at the Pump Comparison

Do you think that filling up your tank is draining your wallet? Check out the infographic below to see where your country ranks. <http://www.arabiangazette.com/price-at-the-pump-comparison-infographic-20150620/>

##### Declining Oil Prices Present Opportunities for Change

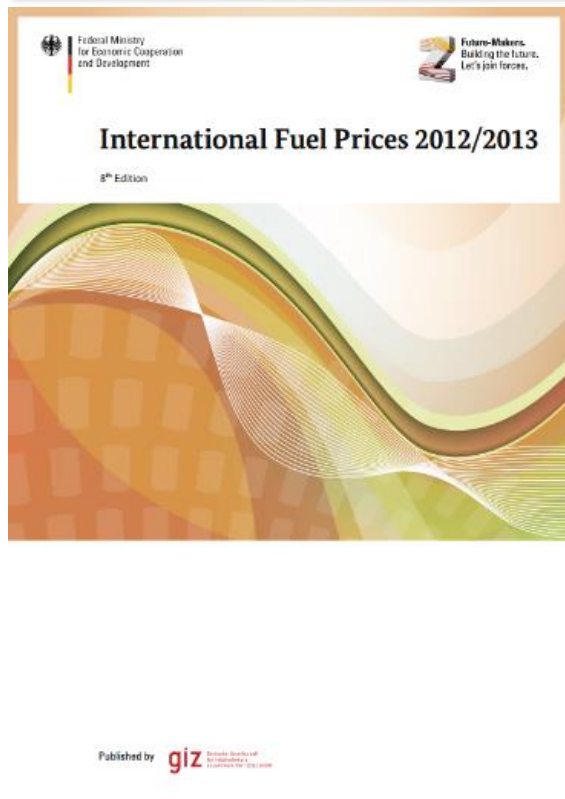
This is the second installment of a three-part series exploring the economic challenges faced by the Gulf Cooperation Council states: Saudi Arabia, Oman. The first installment explored the Gulf states' accumulation of wealth. The final installment will examine each of the six Gulf nations in detail. <http://www.stratfor.com/analysis/declining-oil-prices-present-opportunities-change-2>

#### 2) News from the regions

##### Middle East and Africa

##### OMAN: Oman cuts subsidy spending by 48% in 2015

Oman reduced subsidies on various food items such as rice, flour and sugar as well as fuel and other products by 173 million rials (Dh1,650 million). [http://www.enf.org/system/uploads/attachment\\_data/file/151515.pdf](http://www.enf.org/system/uploads/attachment_data/file/151515.pdf)



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