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# *The Fact of Energy Prices Subsidies in MENA Region*

## *واقع دعم أسعار الطاقة في منطقة الشرق الأوسط وشمال إفريقيا*

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**Abstract:**
This study aims to highlight the fact of subsidizing energy prices in the MENA region, where it represents one of the main pillars of economic policies in the region's economies both oil importers and oil exporters. We find through data analysis that The region has the largest part of pre-tax subsidies with a value of 250 billion dollars in 2013 and a share of 47% of global pre-tax subsidies. The results also show that Iran has the big part of both pre-tax subsidies and post tax subsidies _as a share of GDP_ in the region by about 15% and 26% respectively.
**Keywords:** Energy, subsidy, MENA region, economic policy.

**الملخّص:**
تهدف هذه الدراسة بالأساس إلى إبراز واقع سياسة دعم أسعار الطاقة في دول منطقة الشرق الأوسط وشمال إفريقيا التي تعتبر من أهم محاور السياسات الإقتصادية فيها سواء كانت مستوردة أو مصدرة للنفط. من خلال تحليل البيانات توصلنا إلى أن المنطقة تحوز على الحصة الأكبر من الدعم قبل الضريبة بقيمة 250 مليار دولار سنة 2013 ونسبة 47% من إجمالي الدعم قبل الضريبة في العالم. كما أبرزت النتائج أن إيران تستحوذ على الحصة الأكبر من الدعم قبل الضريبة وبعد الضريبة بنسب من الناتج المحلي بلغت على التوالي 15% و 26%.
**الكلمات المفتاحية:** الطاقة، الدعم، منطقة المينا، السياسة الإقتصادية.

## INTRODUCTION

Many countries and governments are focusing on subsidizing energy prices to help low-income group to benefit from a significant consumption of energy that cover its needs, and then to maintain their weak purchasing power at stable level, which contributes to strengthen the efforts towards poverty alleviation, that has many negative effects whether on society or economic activity.

**Problematic and Objective of the study :** This study tries to answer the following main question: ***How MENA region economies are subsidising energy prices?***

We aim to analyse the fact of energy subsidy policy in the MENA region, that is one of the main pillars of economic policies in the region's economies both oil importers and oil exporters, where it seems to be as a major alternative for social security policies that aim to alleviate poverty, and it is used by policy makers as a tool to avoid the situation of public dissatisfaction that can be raised as a result of the non participation in the political process and thus the exclusion from decision making process.

**Previous studies:** There are some studies that take into consideration the subject of this study as follows :

_ Carlo Sdralevich et al : « subsidy reform in the middle East and north Africa ; Recent Progress and Challenges Ahead », Middle East and Central Asia Department, IMF, 2014.

_ David Coady et al : « How Large Are Global Energy Subsidies? », IMF Working Paper N° 105, 2015.

_ Benedict Clements et al : « Energy Subsidy Reform : Lessons and Implications », IMF, 2013.

**Methodology of the study:** We used in our study the different energy subsidies data that are available in the IMF database, and we followed the methodology of data analysis and the comparison between the region countries to obtain Comprehensive and accurate results.

**Sections of the study**: In this paper, we try in section 1 to give some definitions and concepts, in section 2 we present the different costs of energy prices subsidies, section 3 contains a global view of energy subsidies, in section 4 we try through data analysis to show the fact of subsidizing energy prices in MENA economies by products and components.

## 1. DEFINITIONS AND CONCEPTS

The policy of energy prices subsidy reflects that the energy products prices are not in their efficiency levels. This means that the efficient energy price is central to the definition of energy subsidies, and it should be taken into account carefully to understand the definition.

### 1.1. Efficient Energy Prices

There are two components of efficient energy prices : the efficient consumer price and the efficient producer price. We will focus on the

first because the subsidy policy aimes to subsidy the consumer not the producer. The efficient consumer price for an energy product (for example, gas or diesel) consists of three components [1]:

**_ Supply cost** : It is about the opportunity cost to a country that is necessary for supplying the energy product to consumers. For internationally tradable products like petroleum products, the supply cost is the international price of the product adjusted for transport and distribution costs. For goods that are not internationally traded like electricity, the supply cost is the domestic cost of production (cost-recovery price ), with costs evaluated always at efficient prices.

**_ Pigouvian tax**: Because of external cost to society that is generated from the consumption of energy products like fossil fuels by a firm or household, efficient pricing requires that consumers face a price that reflects this cost. The usefull way to internalize this cost in the consumer price is the imposition of a Pigouvian tax equal to the external cost generated by additional consumption.

**_ consumption taxes :** Energy products should be subject to same level of consumption taxes ( like value-added tax (VAT) or general sales tax (GST)) like other consumer products without exemptions or cuts in order to provide revenues to cover the public spending.

**1.2. Energy prices subsidy**

A widely used definition is that of de Moor and Calamai, which defines a subsidy as "any measure that keeps prices for consumers below the market level or keeps prices for producers above the market level or that reduces costs for consumers and producers by giving direct or indirect support"[2]. In a similar way, the IEA defines energy subsidies as "any government action that concerns primarily the energy sector that lowers the cost of energy production, raises the price received by energy producers or lowers the price paid by energy consumers"[3].

These subsidies can be [4]:

_ explicit subsidies that constitute explicit transfers made by the government to either the producer or the consumer receiving the subsidy and registered on the state's budget ;

_ Implicit subsidies are less transparent and more difficult to calculate. They that typically occur in oil and gas producing countries, where mostly state-owned oil and gas companies produce, refine, and market petroleum products for the domestic market at below-international prices but above-production costs.

There are two components of energy subsidies : consumer subsidies arise when the prices paid by consumers, including both firms (intermediate consumption) and households (final consumption), are below a benchmark price, while producer subsidies arise when prices received by suppliers are above this benchmark.

Concerning the benchmark price, we have to differentiate between the products that are internationally traded and those which are not internationally traded. For the first kind, the benchmark price for calculating subsidies is based on the international price, as for the second the appropriate benchmark price is the cost recovery price for the domestic producer, including a normal return to capital and distribution costs. (Carlo Cottarelli et al, 2013)[5].

Consumer subsidies include two components [6]:

**_ Pre-tax subsidy :** arise when the price paid by firms and households is below supply and distribution costs. The calculation of pre-tax subsidies for internationally traded product we find :

$$\text{Pre-tax subsidy} = Pw - Pc$$

Where :

Pc is the price paid by consumers ;

Pw is the international price adjusted for transport and distribution costs.

When the product is not traded internationally, the calculation of pre-tax subsidies is as follow :

$$\text{Pre-tax subsidy} = Pw - Pc,$$

Where :

Pc is the price paid by consumers ;

Pw is the cost-recovery price.

**_ Tax subsidy** : arise when taxes on energy products are below their efficient level.

When there is a pre-tax subsidy the post-tax subsidy is equal to the efficient tax plus the pre-tax subsidy. When there is no pre-tax subsidy, the post-tax subsidy is equal to the difference between efficient and actual taxation (Carlo Cottarelli et al, 2013).

## 2. ECONOMIC, SOCIAL AND ENVIRONMENTAL COSTS

The policy of energy prices subsidy has some positive impacts on social safety for the poor class and industrialization through its impact on energy use as an intermediate factor in many industries. Nevertheless, subsidization of energy has many unintended negative

consequences that exceed the positive ones. These costs arise in three main areas [7]:

**_Economic costs :** Energy subsidy policy affects negatively economic efficiency, because it leads to high consumption of energy and a misallocation of it as a resource. It leads also to lower incentives for productivity improvements and investments in more energy-efficient technology, and distorts pricing signals to customers.

This policy also leads to a disparity in domestic petroleum prices between neighbouring countries and hence encouraging the smuggling of petroleum products, which means a squandering of public money wher we find that other economies benefits from a huge value of government spending that goes for subsidy policy.

**_ Social costs :** The non-exemption feature of subsidy policy means that all income groups in country benefit from the low price of energy products, especially the high income group which has the high ability to consume energy.

The benefit of all groups in society from subsidy policy is at the expense of poor group, because the finance of subsidizing prices comes from the deduction in budget part that is allocated to improve the poor group standard of living.

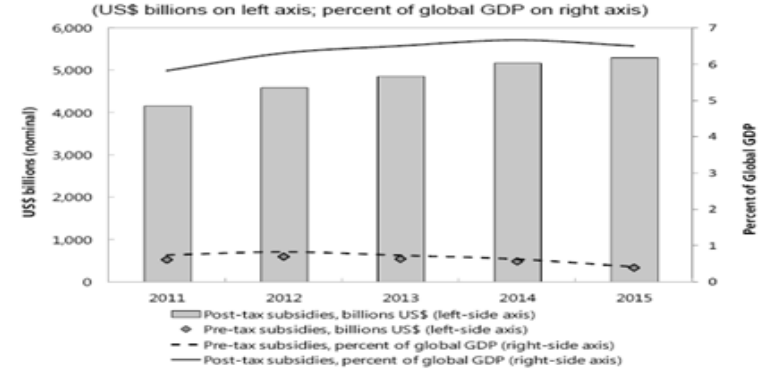
**_Environmental costs** : Low prices of fossil energy products as a result of subsidy policy lead to high consumption and cause high greenhouse emissions that rise concerns of wide pollution. Fuel subsidies can also hinder the development of renewable and clean energy technologies – such as solar and wind – which find it difficult to compete with subsidized fossil fuels.

## 3. A GLOBAL VIEW OF ENERGY PRICES SUBSIDIES

By tooking a look to the fact of energy prices subsidies in the world economy, we find that the gasoline prices range from $.09 per gallon in Venezuela as the lowest price to above $9.00 in Turkey and Norwayas the highst price, with an average of $5.26 per gallon. Diesel prices tend to be a bit lower, with a range from $.04 to above $7.00 and an average of $4.12 per gallon[8]. The only explanation of this variation is the differnce in each policy maker vision to the energy prices, that can be ranged between the extrem social background that prefer to maximize the benefits of society through lowering the price to the lowest possible level, and the extrem liberal background that prefer to suspend any kind of subsidy that can affect negativly the incentives in economic activity.

The total energy subsidies before tax in the global economy in 2013 was about 0.7% percent of global GDP with a value of $ 550 billion dollars, but it declined in 2015 as a result of the significant decline in the price of oil (which is the benchmark price to measure pre-tax subsidy) to 0.4% of global GDP with a value of $ 333 billion dollars.
In contrast, the value of post-tax subsidy is in a high level, with a rate of 6.5% of global GDP and a value of $ 5.3 trillion compared to the same percentage in 2013 but with low nominal value that was estimated at $ 4.9 trillion. The explanation of this rise is due to an increase in the efficient level of "Pegouvian tax" that must be applied to reflect the environmental damage created by the growing consumption of energy products day after day[9].

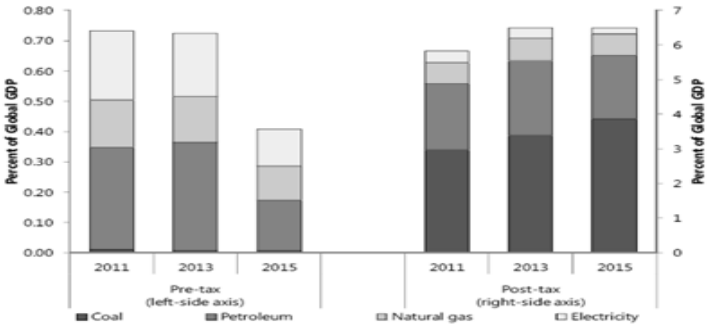
**Figure 01 : Global Energy Subsidies 2011–15**




**Source :** David Coady et al: « How large are global energy subsidies », IMF working paper N° 105, 2015, p 17.

Concerning energy products typs, figure 02 shows that the petroleum products between 2011 and 2013 had the largest part of pre-tax subsidies as a share of global GDP around of 0.33% and 0.34% respectively. But their share dropped by almost a half in 2015 as a result of a decline in oil price which is the reference price for measuring subsidies on petroleum products. From other side, coal had the biggest share of post tax subsidies in a comparaison to its pre-tax subsidy share, its post tax share raise from 3% in 2013 to 3.9% in 2015 as a result of high environmental damage of coal – as it is the most polluted energy product– that is not a subject of pigouvian tax as it should be [10].

**Figure 02 : Global Energy Subsidies by Energy Product 2011–15**
(Pre-tax in percent global GDP left axis; post-tax in percent global GDP right axis)




**Source :** David Coady et al: « How large are global energy subsidies », IMF working paper N° 105, 2015, p 19.

In regard to geografical distribution of global energy subsidies, the MENA region have the largest part of pre-tax subsidies with a value of 250 billion dollars in 2013 and a share of 47% of global pre-tax subsidies, followed by emerging Asia and developing economies with a share of 18% then the developed economies by a share of 4%.

For the post tax subsidies, emerging Asia and developing economies have the biggest parts in a comparaison with the other regions, because these two regions are characterized by high energy consumption which produces high greenhouse emissions that are not reflected by pegouvian tax level in the concerning economies. In contrast, developed economies has the smallest part of global post tax subsidies because of the high pegouvian tax rates in these economies _which is so close to the efficient level_ that lead to low greenhouse emissions [11].

## 4. THE FACT OF ENERGY PRICES SUBSIDIES ON THE MENA REGION

Because of the malfunction of social safety systems in the MENA region economies, subsidy policy especially for energy products is one of the main tools that policy makers use improve the social protection both in energy importing or exporting countries. In this regard, MENA region economies are the most subsidizing of energy prices in the global economy because of : the social background for their economic policies, the compenstation of a lack in the participation in decision-making and the abundance of energy in most countries of the region.

To more clarification of energy subsidies policy importance in MENA region, Table 01 shows that the elasticity of energy consumption to

growth was about 1 over the period 1980–2011, significantly higher than the world average that was about 0.7 in the same period. This suggests that energy subsidies in the region are positively correlated with real GDP growth[12]. Moreover, energy consumption elasticity is higher in MENA oil exporters, which can be explained by their lack of incentives to be energy-efficient as a result of resource abundance dillema.

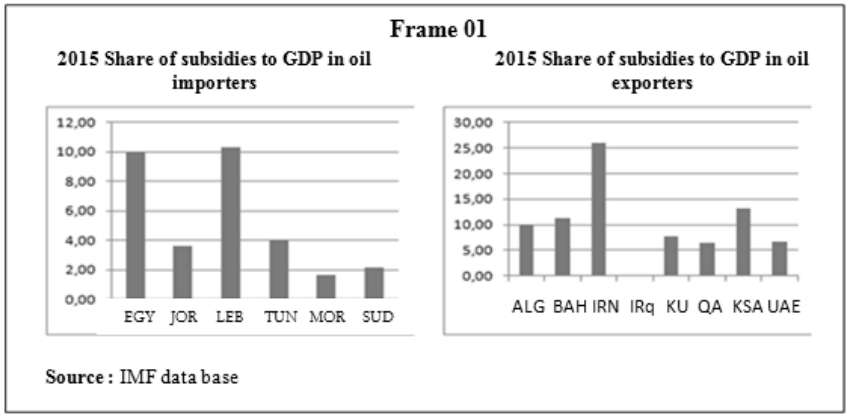
**Table 01 : Elasticity of energy consumption to growth**

| ALL (163 countries) | MENA region | | |
|---|---|---|---|
| | Total | Oil Exporters | Oil Importers |
| 0.764 | 1.080 | 1.293 | 0.924 |

**Source :** Carlo Sdralevich et al : « subsidy reform in the Middle East and North Africa ; Recent Progress and Challenges Ahead », Middle East and Central Asia Department, IMF, 2014, p 21.

Frame 01 shows that for oil exporters, Iran has the big part of post tax subsidies _as a share of GDP_ in the region by about 26% followed by Saudi Arabia by 13.2%, Bahrain by 11.2% and Algeria by 10%. But in nominal values, there is no big differences between Iran and Saudi Arabia in the post tax subsidies. For oil importers, Lebanon and Egypt have the big part of post tax subsidies by about 10.3% and 9.9% respectively, but in nominal values we find that the value of of subsidy in Egypte is 6 times bigger than in Lebanon as a result of the small GDP value in Lebanon in comparison to Egypt [13].

**Frame 01**



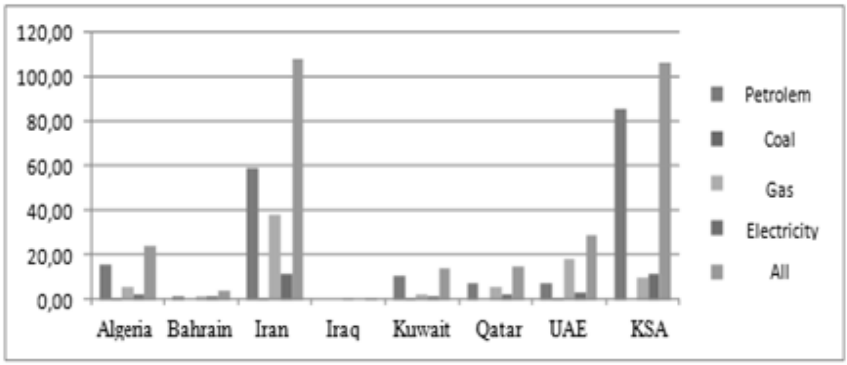

**Source :** IMF data base

## 4.1. Energy prices subsidies by products

Petroleum products are considered as the most important type of products that benefits from subsidies followed by natural gas with low

values. In this regard, Saudi Arabia focuses on subsidizing petroleum products prices, while Iran focuses on subsidizing both natural gas and petroleum products prices. As Figure 03 illustrates, coal has the smallest part of post-tax subsidies as a result of the significant decline in its consumption at the region because of the availability of other alternatives for it, especially natural gas.

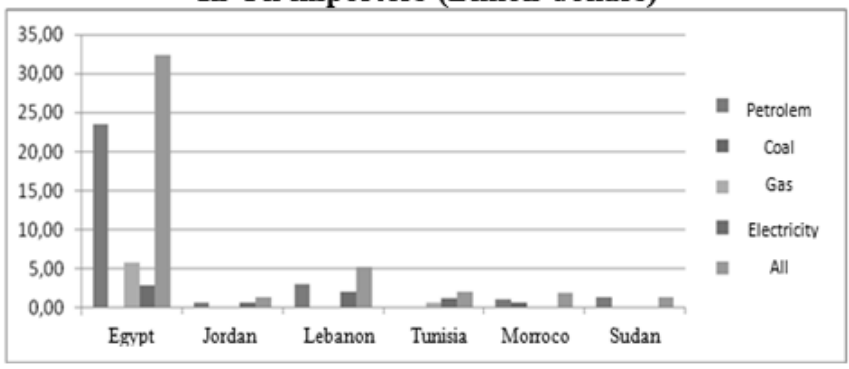
**Figure 03 : 2015 Post-tax subsidies by products in Oil exporters (Billion dollars)**




**Source :** IMF data base

For oil importers, figure 04 shows that Egypt has the big part of post tax subsidies concerning : petroleum products, which accounts for the largest share of subsidy, natural gas and electricity, while coal is almost without a significant part of post tax subsidy as the case in all MENA countries for the same reasons previously mentioned.

**Figur 04 : 2015 Post-tax subsidies by products In Oil importers (Billion dollars)**

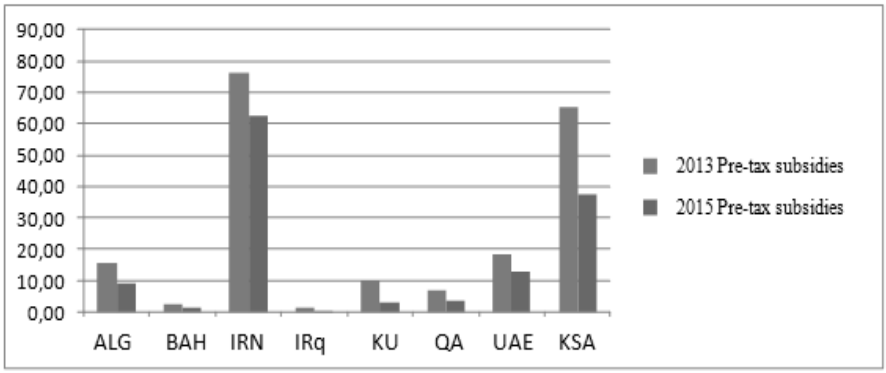



**Source :** IMF data base

### 4.2. Energy prices subsidies by components

Iran has the largest share of pre-tax subsidies in nominal value in 2015 by about 15% of GDP, followed by Saudi Arabia with less nominal value and weak share by about 4.6%, then comes Algeria and UAE with a big difference in nominal value and share value estimated at 3.7% and 2.8% respectively [14]. The pre-tax subsidies declined in 2015 in all region countries in a comparison to 2013 levels as a result of the continuous decline in oil price _as a benchmark price_ from the half of 2014.

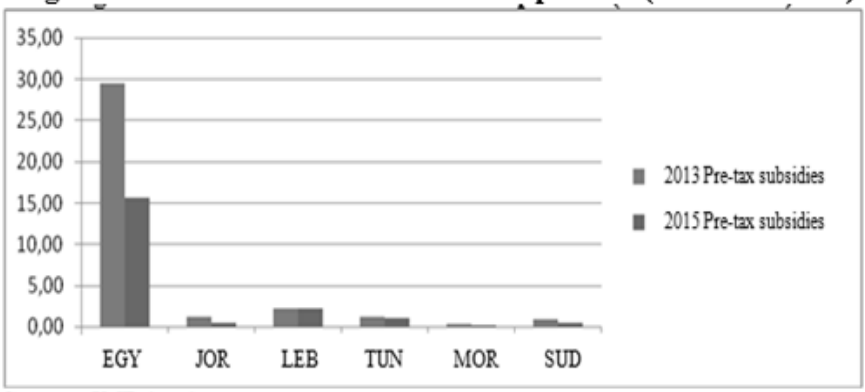
**Figure 05 : Pre-tax subsidies in Oil exporters (Billion dollars)**




**Source** : IMF data base

For oil importers, pre-tax subsidies value declined in all countries in the region unless Egypt, where the subsidy increased in nominal value and GDP share more than it value in the most of oil exporters unless Iran and Saudi Arabia. The reason is due to the high number of population in Egypt that lead to high consumption of energy, but the continuous decline in oil price from the half of 2014 led to a significant impact in pre-tax subsidy value especially in Egypte where it decreased by about a half.

**Figure 06 : Pre-tax subsidies in Oil importers (Billion dollars)**

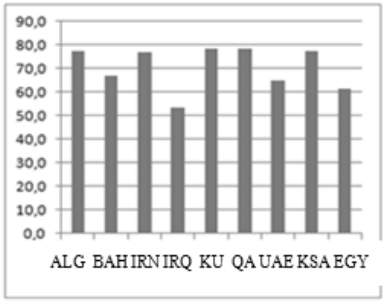



**Source** : IMF data base

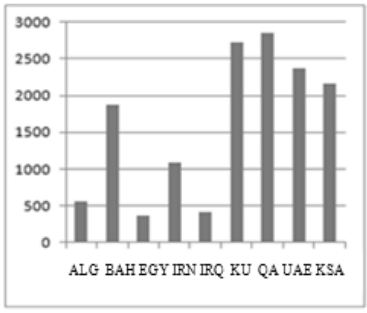
In regard to per capita energy subsidies, it is clear through the right side of the frame 02 that the Gulf countries have the highest values compared to other countries as a result of the small population in these countries and the high nominal value of subsidies. While other countries especially oil exporters have so close values of the average subsidy rate that reflects the percentage of subsidy to the overall cost of production and supply, where it was estimated on average as shown on the left of the frame 02 by about 70%, which is a high rate that reflects the excessive focus of MENA countries on subsidizing the prices of energy products.

**Frame 02**

**2013 subsidies rate average in MENA region**




**2013 per capita energy subsidies in MENA region**




**Source :** IMF data base

Given that post tax subsidies as previously explained is the sum of pre-tax subsidies and tax subsidies that containe the consumption tax and the Pegouvian tax, the International Energy Agency makes

corrections on the Pegouvian tax to include some other components which are: the impacts on global warming and the pollution of the air, the extent of causing traffic congestion and amortization of roads.

For MENA countries, Saudi Arabia have the highest value of pigouvian tax by about 57.4 billion dollars and a share of 7% of GDP as a result of high consumption of energy products that are traded there with low prices. It is followed by Iran by about 45.2 billion dollars and a share of 10.7% of GDP, Egypt by 14.5 billion dollars and a share of 5% then Algeria by 13 billion dollars and a share of 6.2% [15].

Previous data Confirm the place occupied by low Pegouvian tax in energy subsidies in the MENA countries especially in the oil exporters, and then suggest the necessity of many corrections that should be taken in this regard by policy makers.

## CONCLUSION AND RECOMMENDATIONS

This study shows that the MENA region have the largest part of pre-tax subsidies with a value of 250 billion dollars in 2013 and a share of 47% of global pre-tax subsidies. The region economies subsidising especially petroleum products that are considered as the most important type of products that benefits from subsidies followed by natural gas with low values. Subsidising energy in the region isn't just on prices but also includes the Pegouvian tax that is in a low levels in a comparison to what it should be as a result of the pollution of the air and the extent of causing traffic congestion in the MENA region.

The previous study results of subsidies data analysis in the MENA region show that the continuation of energy prices subsidy will creat significant burdens on the budget in the region economies. These burdens can affect negatively the ability of financing other public expenditures like education and health that are more effective for growth and development in the region economies.

The rise of different costs as a result of energy prices subsidy leads to a necessity of such reforms of this kind of subsidy policy. Subsidy reform can boost growth and reduce poverty and inequality. Reallocating the resources freed up by subsidies to more productive public spending could help boost growth over the long run. Moreover, the removal of subsidies, accompanied by a well-designed social safety net and an increase in pro-poor spending, could yield significant improvements in the well-being of low-income groups over the longer term.

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