

General Budget 2015

The Impact of Declining Oil Prices

Jordan Independent Economy Watch



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Introduction

The international price of oil has plummeted drastically since mid-2014, shocking analysts and decisions makers alike. While one barrel of oil was priced at a monthly average of around \$110 in June, its price in international markets fell to less than \$50 in January. This large decline has pushed policymakers worldwide to alter and amend their plans and budgets for 2015, as prices are expected to remain subdued for at least the first half of this year. The new lower price of this strategic commodity is expected to spur economic activity in a large number of countries, since production costs are now considerably lower than their level in previous years.

One of the most important impacts of changing oil prices is on the general budgets of countries, since it effects both public expenditures and public revenues. The magnitude of impact and its direction depend on the characteristics of an economy. An oil-exporting economy, such as most GCC economies, will experience a negative effect due to declining public revenues while oil-importing economies, such as Jordan, will experience a positive effect due to lower public expenditures. The magnitude of impact also depends on the tax rates applied on petroleum products. In other words, if an oil-importing country obtains a large amount of tax revenues from petroleum products, then the magnitude of impact will be limited due to the expected change in these tax revenues.

For Jordan, the immediate fiscal effects of declining oil prices are positive. Since Jordan is an oil-importing economy, the decrease in oil prices is expected to significantly reduce the cost of oil imports which are considered to be a main input to the production of public goods and services. However, this positive impact is expected to be partly offset by a decrease in revenues accrued from taxes on petroleum products, which were levied in 2011 at varying rates reaching up to 40.6%.

Therefore, this paper attempts to quantify the effect of declining oil prices on Jordan's draft budget for 2015. The estimation process used was conservative, making sure not to over exaggerate the effects, but rather to accurately estimate them to most possible extent. It should be noted that this study investigates the short-term fiscal effects of oil prices and is not concerned with longer term dynamics. It should also be noted that without the efforts of the General Budget Department, and Jordan budget's high degree of transparency, this paper would not have been possible.

This paper is organized as follows: the first section provides an overview of the draft general budget for 2015 and an analysis of estimated revenues and expenditures, through comparing them with the re-estimated figures for 2014. The second section then discusses the effects of oil price on the Jordanian general budget. It first provides a historical glimpse of this effect, and then analysis the effects of the most recent dive in oil prices on the draft budget for 2015 and quantifying these effects. The third and final section provides an overview of NEPCO's losses and the implications involved. It also provides alternative scenarios to show that the savings that would have been made if certain energy projects were implemented in the proper time.

1. Overview of Draft Budget Law for 2015¹

The Jordanian draft law for the 2015 public budget was endorsed by cabinet and referred to Parliament on the 2nd of November, at the opening of Parliament's second ordinary session. The budget circular for the preparation of the draft General Budget Law for 2015 contained a list of assumptions and directions, to direct ministries and government entities to prepare their respective budgets based on dictated ceilings. Both instructions and assumptions highly stressed on austerity prescriptions, calling on all public institutions to halt new appointments and avoid new projects except for strategic projects and those financed by foreign grants and loans. Many of these assumption and instructions are maintained from last year's budget law including improving tax collection and combating evasion.

Main forecasts/assumptions behind 2015 budget estimates:

<i>GDP growth</i>	4%
<i>Inflation rate</i>	2.4%
<i>Export growth</i>	3.8%
<i>Import Growth</i>	-1.6%
<i>Current account deficit (%of GDP)</i>	7.6%
<i>International price of oil</i>	\$95-\$100

In preparing the estimates of the draft budget, authorities relied on a number of economic forecasts or assumptions for 2015. The economic growth rate was estimated at 4% along with a low inflation rate of 2.4%. The gap between exports and imports is expected to narrow down, with exports forecasted to grow by 3.8% and imports to fall by -1.6%, leading to a decline in the current account deficit to 7.6% of GDP. Most importantly, the international price of oil was estimated to be around \$95 to \$100, meaning that the estimation of expenditures was mainly based on \$100/barrel in 2015. Such an estimation is both rational and logical as international oil prices at the time of preparing the draft budget were around this estimate, and there was no clear expectation that the price of oil would plunge.

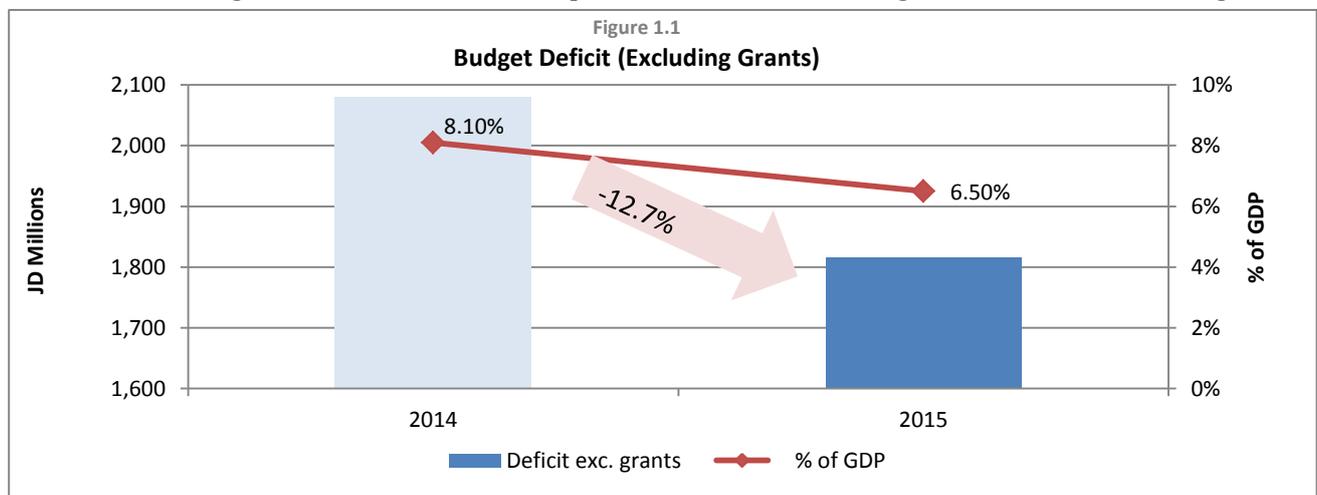
However, the estimated economic growth rate of 4% might be too ambitious, given that it was forecasted on the assumption of a high price of oil. Economic growth between 2011 and 2013 averaged 2.7%, and economic growth for 2014 is expected to reach around 3% to 3.1%. Therefore, the estimate of 4% economic growth (remaining from earlier years) is not realistic given the growth rates realised in the past couple of years, and given the austere nature of expenditures estimated for 2015. Furthermore, it seems that this estimate did not take into account the deterioration in export performance experienced in 2014, and the new income tax law, which are expected to limit the possible extent of economic growth. Nevertheless, the plunge in international oil prices since mid-2014 might help the economy achieve a positive growth rate, above those recorded for previous years. However, it remains unlikely that the real economic growth rate for 2015 will touch 4%. And since the estimation of public revenues

¹ All data and information contained in this chapter is from the Draft General Budget Law 2015

mainly relies on the forecasted economic growth rate, revenues are not expected to reach their ambitious targets.

Budget Deficit (in JD Millions)			
	2014*	2015	Change
Deficit exc. grants	2,080	1,816	-12.7%
% of GDP	8.1%	6.5%	-
Deficit inc. grants	911	688	-24.5%
% of GDP	3.5%	2.5%	-

Given the austere nature of the aforementioned assumptions and the authorities' commitment to the economic reform programme, expenditures are forecasted to grow by 3.2% against an estimated 6.9% growth in revenues, compared to re-estimated figures for 2014². These growth



rates would in turn lead to a reduction in the budget deficit (excluding grants) to JD1.8 billion (6.5% of GDP), 12.7% (JD264m) lower than the re-estimated deficit for 2014, which stands at 8.1% of GDP. When including grants, the budget deficit for 2015 is estimated to reach JD688 million (2.5% of GDP), falling sharply by 24.5% (JD223m) from its re-estimated level for 2014 (3.5%). Figure 1.1 below illustrates estimated change in the budget deficit excluding grants, both in absolute terms and as a share of GDP.

*All 2014 figures in this report relate to the re-estimated budget of 2014, unless otherwise stated

² Throughout this report, the re-estimated figures for 2014 are used and not the original estimates.

Expenditures

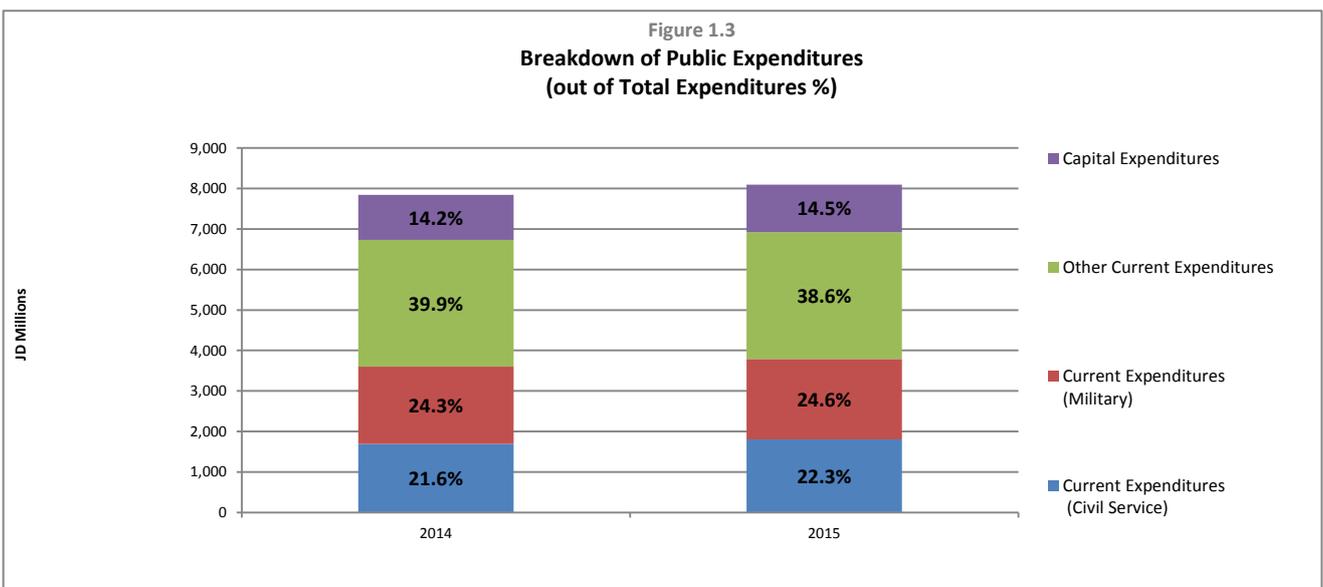
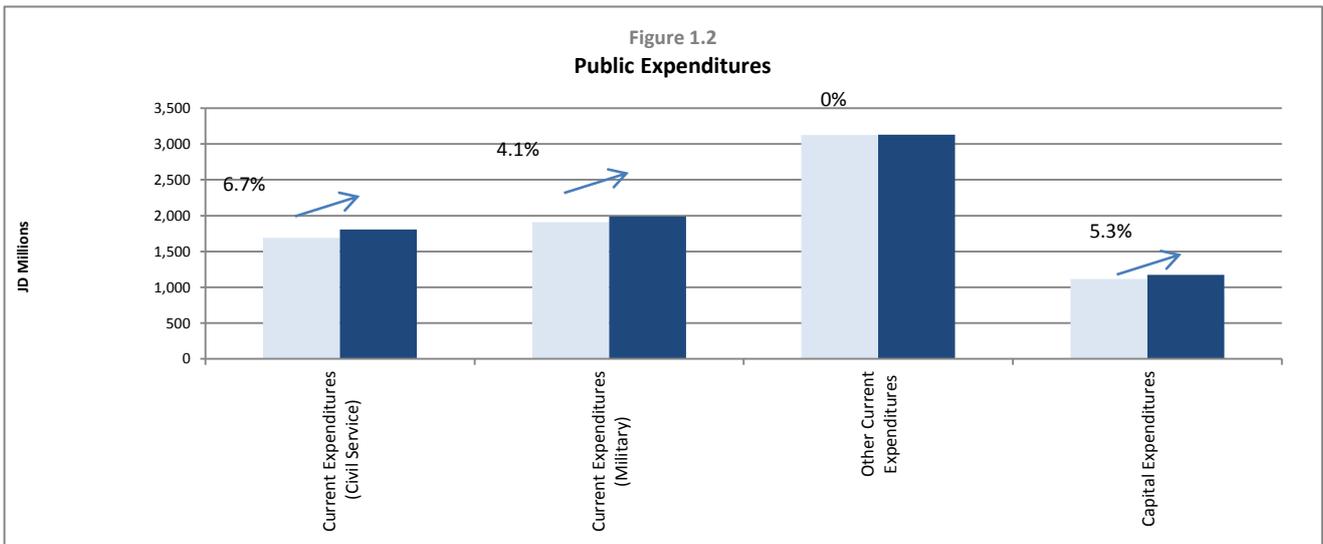
Expenditures (in JD Millions)				
		2014	2015	(%) Change
Civil Service	Compensation to Employees	1,327	1,393	4.9%
	Purchase of Goods & Services	269	293	9.0%
	Other	96	120	25.5%
Total Civil Service Current Expenditures		1,691	1,806	6.7%
Other Current Expenditures	Pensions & Compensations (Social Benefits)	1,110	1,165	5.0%
	Interest Payments	1,033	1,020	-1.2%
	Fuel Subsidy Cash Transfers	210	180	-14.3%
	Goods Subsidies	225	225	0.0%
	Grants	205	270	31.5%
	Medical Treatments	155	155	0.0%
	Grants to Public Universities	57	57	0.0%
	Other	134	57	-57.5%
Total Other Current Expenditures		3,128	3,129	0.0%
Total Military Current Expenditures		1,909	1,988	4.1%
Total Current Expenditures		6,728	6,922	2.9%
Capital Expenditures		1,116	1,175	5.3%
Total Public Expenditures		7,844	8,096	3.2%

Total expenditures in 2015 are estimated to grow by 3.2% (JD252m) from the re-estimated expenditures for 2014 while remaining almost unchanged from its originally estimate. The growth in current expenditures is estimated at only 2.9% (JD194m), while capital expenditures are predicted to grow by 5.3% (JD59m). This means that around 77% of the increase in total expenditures is attributed to higher current expenditures while 23% is attributed to higher capital expenditures. Current spending on civil service and on military is estimated to rise by 6.7% (JD115m) and 4.1% (JD79m) respectively. The effectiveness of this austere budget is apparent when noting the ratio of capital expenditures to total expenditures which increases from 14.2% of total spending to 14.5%.

The modest 2.3% growth in total current expenditures mostly represents the estimated annual salary increases for civil servants and military personnel as well as salaries for new employees in the ministries of education and health. It also includes the 9% growth in purchases of goods & services. Other current expenditures are estimated to be almost unchanged from their level in 2014. Interest payments are estimated to fall by 1.2% (JD12m) indicating successful efforts in debt restructuring and diversification carried out over the past two years. Other main spending reductions are anticipated to come from social assistance, where the value of fuel

cash transfers is estimated to fall by 14.3% (JD30m) while bread subsidies remain unchanged from their level in 2014.

Finally, the 5.3% growth in capital expenditures is expected to result mainly from the implementation of capital projects financed by the GCC grant, of which JD806 million is estimated to be spent in 2015, a surge of more than 60% of the amount spent from this grant in 2014. This means that 68.6% of capital expenditures will be financed through the GCC grant and 1.68% from foreign loans as indicated in the draft law. However, estimates on spending this grant over the past two years have been wide off the mark, which puts into question the capacity of governmental implementing bodies to implement such high value projects. Figures 1.2 and 1.3 below illustrate the changes in the value and composition of public revenues.



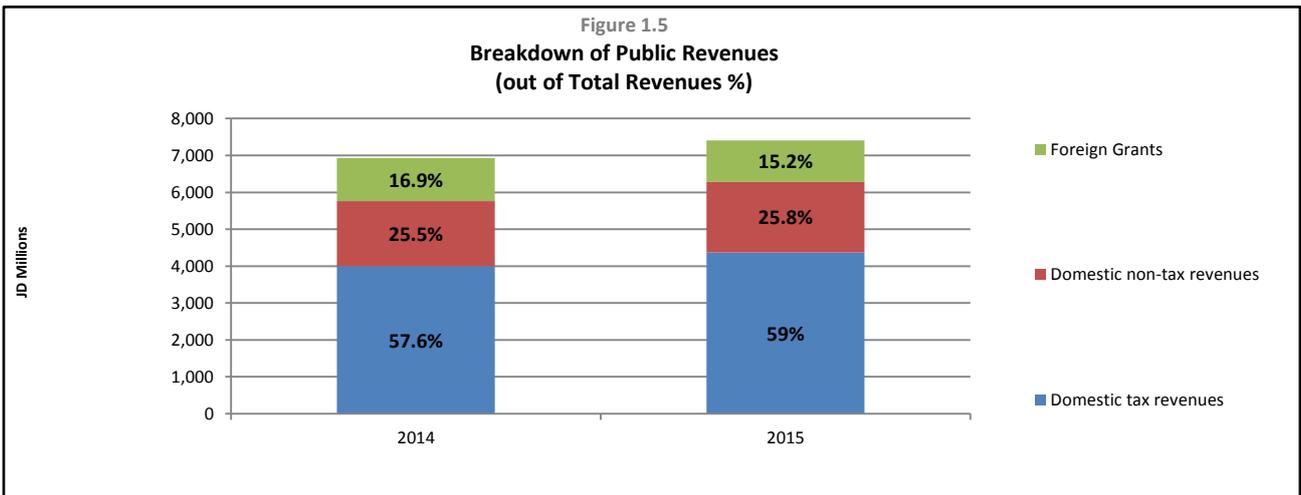
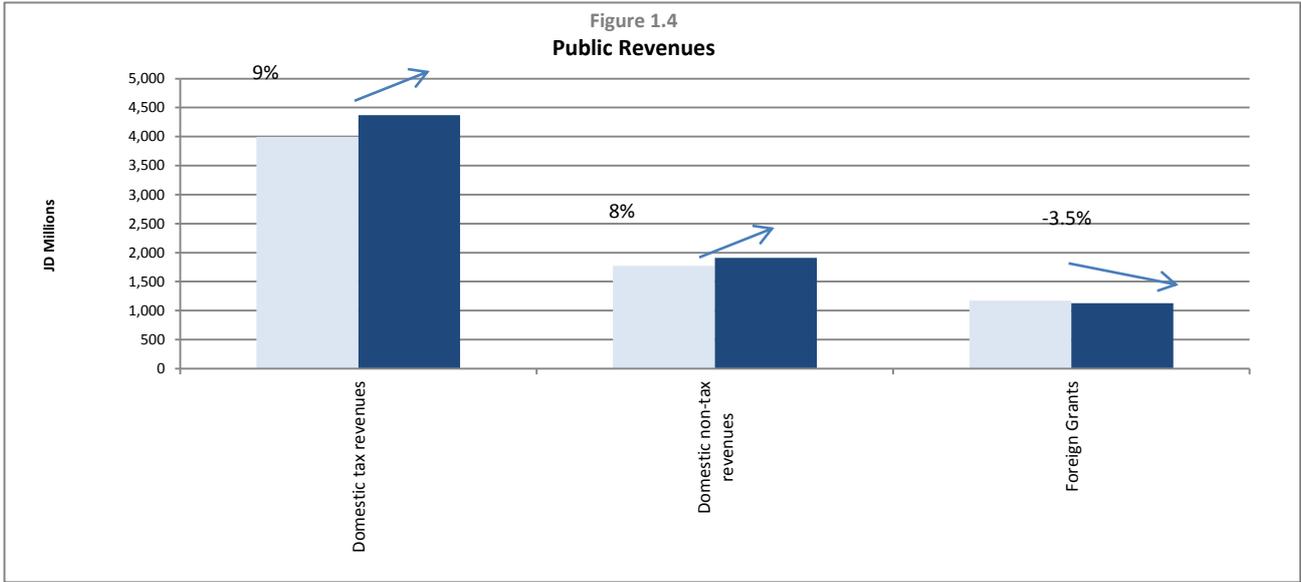
Revenues

Revenues (in JD Millions)				
		2014	2015	(%) Change
Revenues Tax	Taxes on Income & Profits	750	880	17.3%
	Taxes on Financial Transactions (Real estate tax)	130	140	7.7%
	Taxes on Goods & Services	2,790	3,000	7.5%
	Taxes on International Trade & Transactions	325	350	7.7%
Total Tax Revenues		3,995	4,370	9.4%
Revenues Non Tax	Pension Contributions	19.6	19	-3.1%
	Property Income	572.8	293.6	-48.7%
	Revenues from Selling Goods & Services	875.7	1,014	15.8%
	Other Revenues	248.5	529.1	112.9%
Total Domestic Non Tax Revenue		1,769	1,910	8.0%
Total Domestic Revenues		5,764	6,280	9.0%
Grants		1,169	1,128	-3.5%
Total Public Revenues		6,933	7,408	6.9%

Following the surge of 20.4% in public revenues from 2013 to 2014, authorities are expecting revenues to grow larger again in 2015, increasing by 6.9% (JD475m) from 2014. However, a marked difference in next year's estimated revenues is the fall of 3.5% (JD41m) in the value of grants from those received in 2014, breaking the government's legacy in overestimating grants, which was highly praised and appreciated by observers and analysts.

The growth in total revenues will stem completely from home, solely driven by a 9% (JD516m) estimated increase in domestic revenues. The growth in both tax revenues (9.4% or JD375m) and non-tax revenues (8% or JD141) make up 73% and 26% of the overall increase in domestic revenues for 2015. Estimates of tax revenues from incomes & profits stand out from other revenue items due to a considerable growth of 17.3% (JD130m), owing to the assumption that the income tax law will be in effect beginning of 2015.

Domestic revenues stemming from non-tax sources are also estimated to increase by 8% (JD141). This comes after the government had raised a number of fees and introduced others over the past two years to result in a rise of 20% in non tax revenues in 2014. However, the increase in non tax revenues for 2015 is expected to stem from a 15.8% (JD138) increase in revenues from selling goods & services, a 55% (JD25m) increase in mining royalties, and a 60% (JD26m) increase in customs service fees.



The high rate of growth in domestic revenues achieved in 2014 and estimated for 2015 are a result of implementing the economic reform programme designed and implanted in close coordination with the International Monetary Fund (IMF). Public finance data in 2013 and 2014 strongly reflected the numerous measures implemented under this program in terms of a surge in public revenues, but had showed less effect on expenditures. In other words, the reform program in its first two years has overly focused on the revenue side of the general budget, and little has been achieved on the expenditure side.

Foreign Grants (in JD Millions)			
Source	2014	2015	Change
European Union	59	46	-22.0%
United States	259	272	5.0%
GCC	501	806	60.9%
Others	350	4	-98.9%
Total	1,169	1,128	-3.5%

Foreign grants are expected to decline by 3.5% mostly due to the already high level of grants received in 2014 as well as tight fiscal situations currently experienced by many donors. No overestimation is made in this issue, with the exception of the large value of planned spending from the GCC grant. For 2014, the re-estimated value of GCC grants is almost half the original estimates. The absence of ready-to-implement projects was a major factor.

Budget Financing

Although the budget deficit is poised to drop in 2015, both including and excluding grants, the financing budget will nevertheless increase due to the need to repay and amortise older debt. Two issues in particular are worth noting from financing plan for the 2015 budget. First is the large drop of 59.2% (JD574) in budget support loans from international organisations and the corresponding increase of 75% (JD532m) in the value of Eurobonds to be issued in 2015. This indicates that authorities will be substituting borrowing from the IMF with borrowing from international markets via Eurobonds. This mostly due to the completion of IMF’s program with Jordan during 2015.

The second issue to note is that the government’s strategy in substituting its domestic debt with external debt, which it had already begun some time ago, has begun to show results. Domestic debt amortisations are estimated to decline by 7.3% (JD315m) in 2015 along with a corresponding increase of 33.7% (JD214m) in repayment of foreign debt instalments. Although domestic gross borrowing continues to grow, almost 89% of it will be used for debt amortisations.

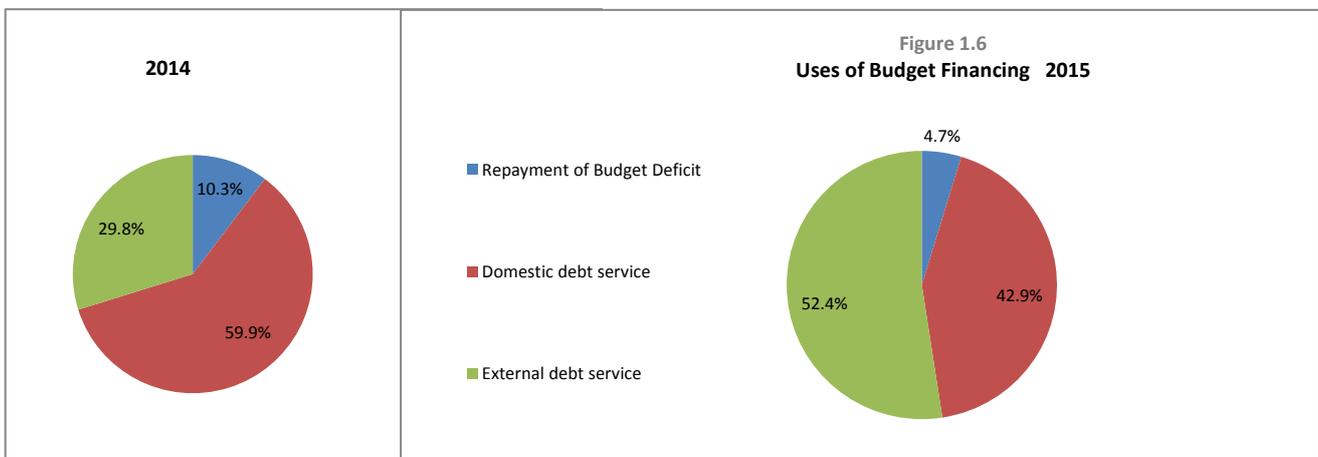
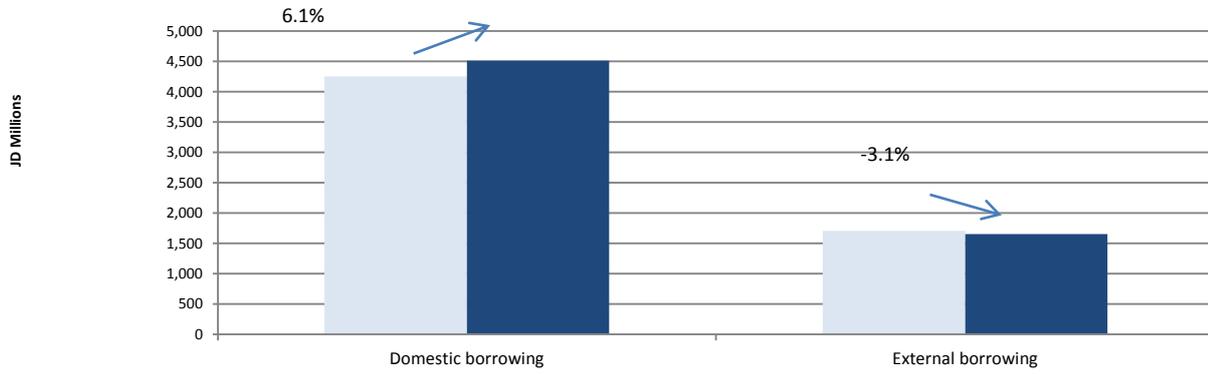
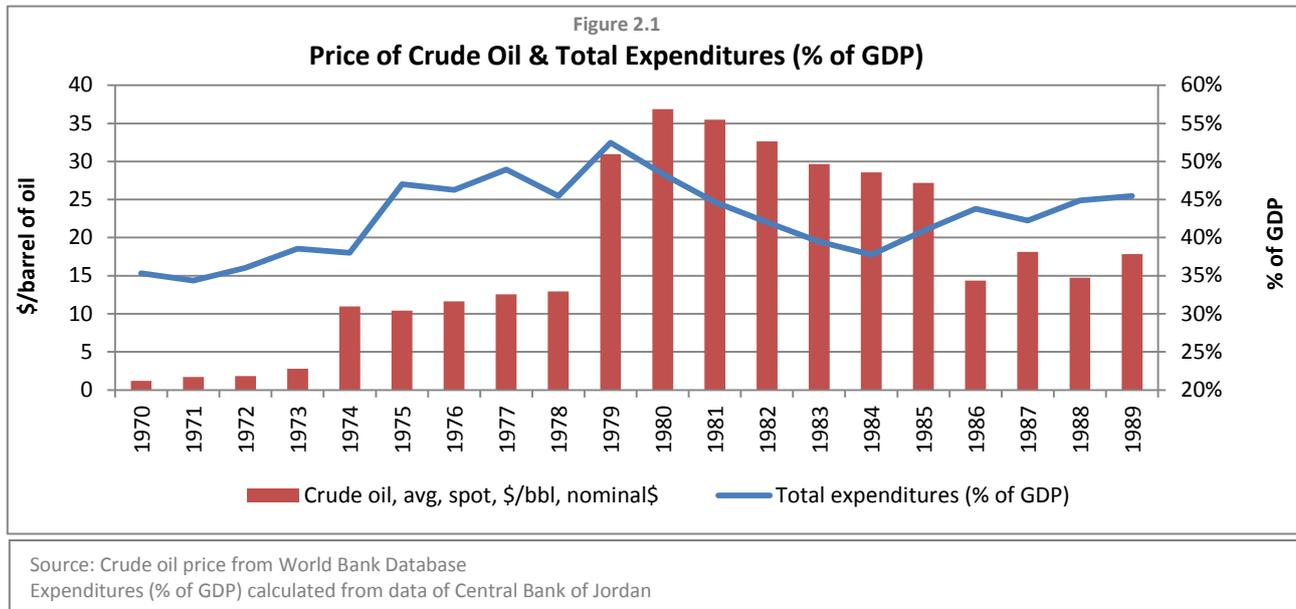


Figure 1.7
Sources of Budget Financing



2. Oil Price Effect on General Budget

This section will give a glimpse of how oil prices have affected Jordan’s public budget in the past. Afterwards, the effect of lower oil prices on the draft general budget for 2015 will be investigated through a systematic review and analysis of budget items. Relevant expenditure and revenue items will be conservatively re-estimated based on a lower oil price with the aim of quantifying the effect.



Historical Overview

The relationship between oil prices and Jordan’s general budget is complex involving a number of different factors with varying impact across time. However, for the purposes of this report, the analysis will be limited on the immediate and short term fiscal effects of higher oil prices on the public budget

Figure 2.1 above illustrates the level of public expenditure as a share of GDP³ along with the international price of crude oil⁴. As can be seen from the figure, the period between 1970 and 1989 was characterized by a positive relationship between the oil prices and the annual general budgets. In other words, an increase in oil prices translated into a higher general budget.

Two time periods can be distinguished in the above figure. The first is an era of increasing oil prices which gradually began in 1971, intensifying with the oil crisis of 1973 and lasting until 1980-1981. Total expenditure as a share of GDP increased from around 34.4% in 1971 to a peak of 52.5% in 1979. This strong increase coincided with a staggering surge of 1,732% in oil prices from \$1.7/barrel to \$31/barrel over this period, which meant that a larger budget was needed to maintain or increase public services. The additional revenue to accommodate higher

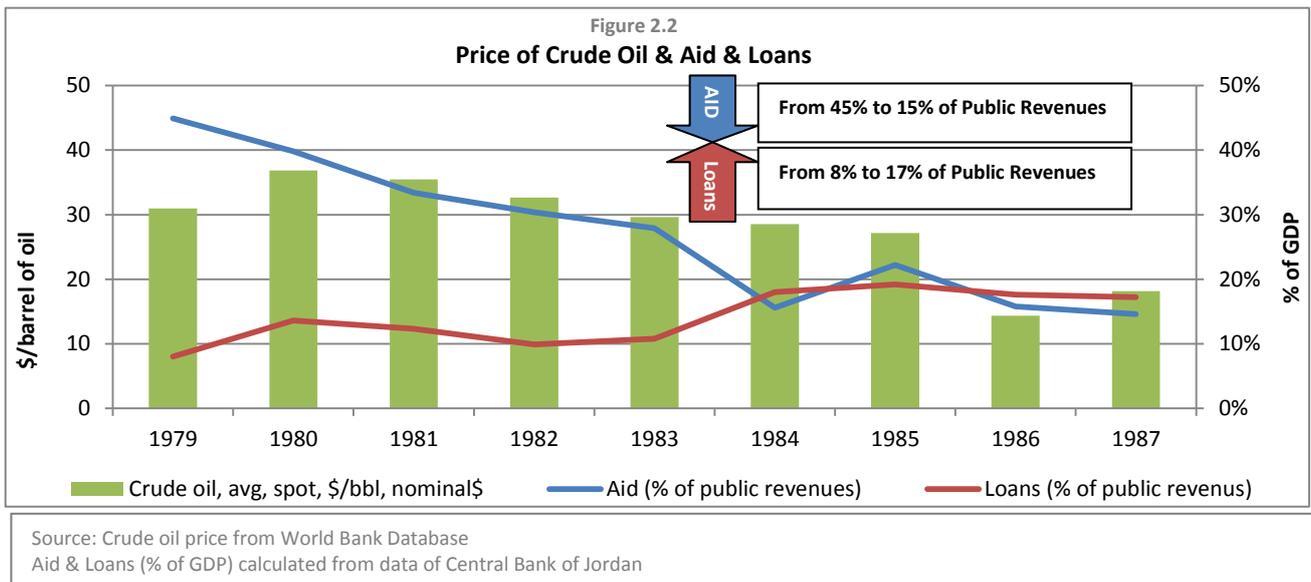
³ Public expenditures as a share of GDP was calculated based on public finance data of the Central Bank of Jordan

⁴ Data on the international price of oil was obtained from the World Bank database: ‘Global Economic Monitor’. It represents the average of different crude oil prices.

expenditures came from foreign aid which surged from an average of JD43.9 million per year between 1970-1974 to an average of JD116.2 million between 1975-1979, representing an increase of 165%. Most of this increase came from Arab Gulf countries.

The second period from 1980 onwards was characterized by falling oil prices, which fell by more than half from 1980 to 1987. This drop coincided with a fall in expenditures from 52.5% of GDP in 1979 to 42.2% of GDP in 1987. During this time, the government was unable to significantly reduce public expenditures because of the fact that oil prices in this period remained well above the first era (1970s) and also because of political factors.

However, the government faced financial shortfalls in the beginning of the 1980s as Arab aid began to dry up, falling from 45% of public revenues in 1979 to 15% of public revenues in 1987. This stimulated the government to adopt an aggressive borrowing campaign to substitute for falling aid and maintain the level of public services it had reached in the earlier decade. In effect, the value of loans surged over this period from 8% of public revenues in 1979 to 17% of public revenues in 1987, significantly expanding the level of public debt. In fact, public debt increased by nearly 88% from 1982 to 1986, mostly in the form of external debt. Figure 2.2 below illustrates how falling oil prices coincided with a decrease of aid inflows and a rise in borrowing to obtain the required financing for maintaining the level of public expenditures.

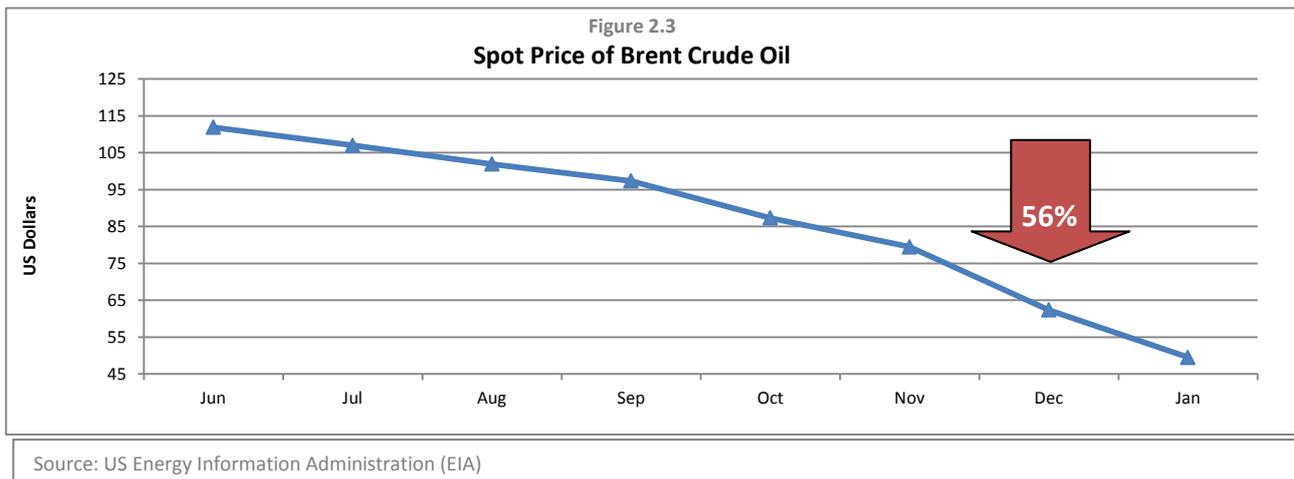


Another period of oil price fluctuations was observed starting in 2003, after the US invasion of Iraq. Oil prices began moving on an upward trend lasting for over a decade. Interestingly, the relationship between government expenditures and oil prices observed before 1990 did not take place in this period. This is largely because Jordan substituted petroleum products for less expensive natural gas in its electricity generation, signing a deal in 2004 to import Egyptian gas. This, coupled with a gradual liberalization of energy prices starting in 2005, helped Jordan limit the growth in expenditures over this period. Nonetheless, the capacity of the Egyptian gas industry could not meet the growing demand of Jordan and other importers towards the end of 2000s, which subsequently caused the National Electric Power Company (NEPCO) to

experience severe losses from substituting back again to more expensive petroleum products for its electricity generation. But unlike the period before 2003, no preferential prices were given to Jordan for the purchase of petroleum products. This induced large and expanding losses by NEPCO beginning in 2010 and lasting until today.

Effect of Lower Oil Prices on Draft Budget for 2015.

This section will aim at quantifying the impact of falling oil prices on the draft budget for 2015. As mentioned earlier, oil prices have plunged drastically since the time of preparing the draft budget which had rationally assumed a price of \$100/barrel. The spot price of Brent crude oil fell by 51.4% from August, 2014 to January, 2015 and by almost 56% from its peak in June. Given this deep fall, it is difficult to confidently estimate the average price of oil for 2015. However, there is a consensus among observers and analysts that the average price of Brent crude oil will average around \$58-\$60 in 2015. This forecast is supported by the International Energy Association, the world's top energy watchdog, which predicted that prices will remain low for the first half of the year, but will pick in the second half, to reach an average of around \$58-\$60/barrel.



Therefore, the re-estimation of the draft budget for 2015 will be based on the assumption of \$60/barrel, 40% lower than the original assumption of \$100/barrel. This means that the re-estimation process will depend on a 40% change on all budget items directly affected by oil prices (i.e. petroleum expenditures), and will depend on a lesser extent on budget items indirectly affected by oil prices. It is worth noting here that the re-estimation process assumes that the government had not locked itself in a high price through a future contract, and that it will be paying market prices for crude oil and other petroleum products.

The re-estimation process involves a systematic review of all expenditure groups with the aim of identifying the relevant expenditure items. The review will include all budget items under (i) current civil service expenditures, (ii) current military expenditures, (iii) other current expenditures, (iv) capital expenditures, and finally (v) revenues, where only revenues accrued from taxes on petroleum products will be considered.

(i) Civil Service Expenditures

The following table shows civil service expenditures as they are in the draft budget for 2015:

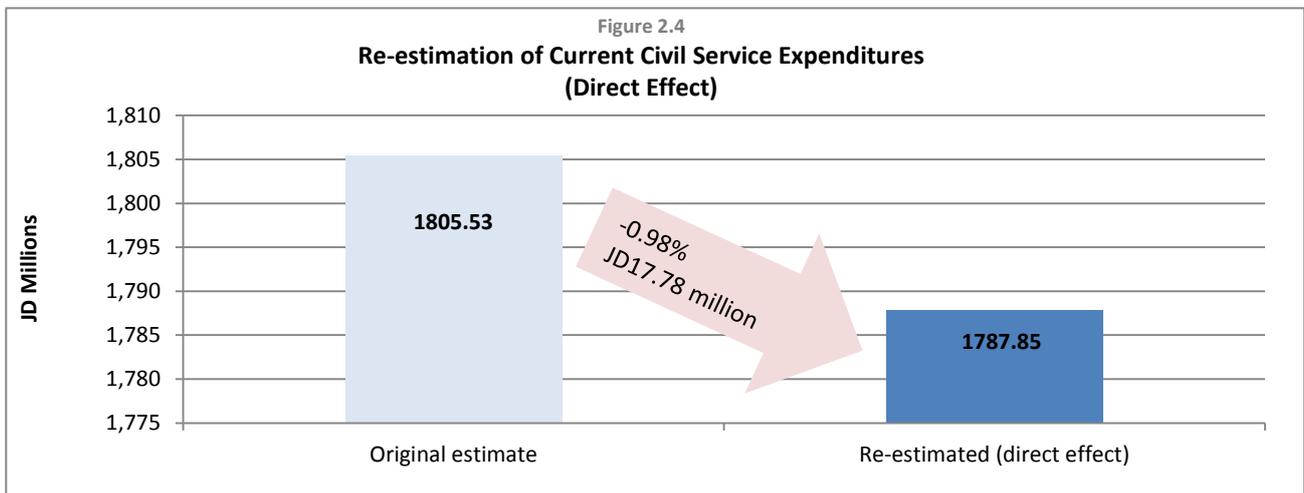
Civil Service Expenditures – Draft Budget 2015 (JD Thousands)	
21. Compensation to Employees	
2111. Salaries, wages, and allowances	
101 Classified employees	101,576
102 Permanent unclassified employees	335,192
103 Comprehensive Contract employees	18,546
105 Personal cost of living allowance	302,417
106 Family allowances	22,374
107 Basic allowance	330
110 Overtime allowance	21,935
111 Additional allowance	376,134
112 Other allowances	34,688
113 Transportation allowances	11,259
114 Transport allowance	7,493
115 field visit allowances	1,376
116 Employees’ bonuses	48,101
120 Contract employees	16,457
Total	1,297,8801
2121. Social security contributions	
301 Social security	94,664
Total	94,664
Total	1,392,545
22 Use of Goods & Services	
201 Rents	19,601
202 Telecommunications services	5,731
203 Water	5,659
204 Electricity	30,453
205 Fuels	25,435
206 Maintenance of machines, furniture and accessories	8,032
207 Maintenance of vehicles, heavy duty machines, and accessories	4,485
208 Repair and maintenance of buildings and accessories	1,046
209 Office supplies	13,993
210 Raw materials (medicine, clothes, food, films... etc)	95,525.6
211 Cleaning services and supplies (including cleaning contracts)	5,588.5
212 Insurance	3,449.6
213 Official travel missions	3,332.1
214 Other goods and services expenses	70,438.9
Total	292,769
28. Other expenditures (current)	

302 Contributions	28,414
303 Scientific scholarships & training	24,870
305 Non-employee bonuses	4,805
306 Refunds on Previous Years Collections	25,300
Total	83,389
31 Non-financial assets & other fixed assets	
402 Machinery & equipment	272
401 Furniture	173
Total	445
Other appropriations	36,378
Gross total	1,805,525

The budget items that will be directly affected from a decline in oil prices include spending on fuels and transportation and transport allowances for employees. **Fuels expenditures** refer to expenditures made on a range of petroleum products, all of which closely follow the price of crude oil. Therefore, it is safe to **re-estimate fuel expenditure down by 40%, such that it becomes JD15,261,120 instead of 25,435,200, indicating a reduction of JD10,174,080.**

The other direct effect is on **transportation and transport expenses**. These are financial allocations provided for public sector employees specifically to cover transportation expenses. In other words, these allocations compensate for the cost of fuel an employee uses to travel to and from the workplace. Therefore, it is also safe to **re-estimate the combined value of transportation and transport expenses down by 40%, such that it becomes JD11,252,220 instead of JD18,753,700, indicating a reduction of JD7,501,480.**

Figure 2.4 below illustrates the total direct effect on current civil service expenditures



A number of other budget items are estimated to be indirectly affected by the decrease in oil prices, and include effects on repair and maintenance costs, office supplies, cleaning services and supplies, official travel missions, machinery & equipment, and other goods and services. **Energy is a main production input of these goods and services, which are expected to fall by around 1-5% minimum due to the drop in oil prices, representing a reduction of around JD1.1 to JD5.4 million.** This is a conservative estimate, and this reduction may be

larger in reality. A further breakdown of some of the expenditure items, which is currently not publicly available, can help better estimate these indirect effects.

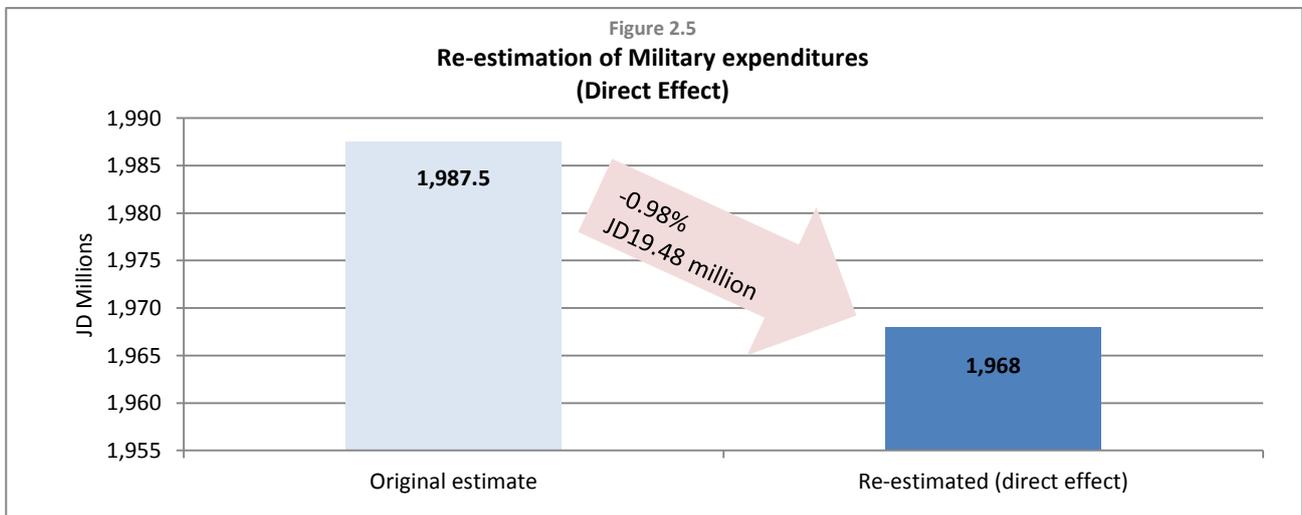
(ii) Military expenditures

Military Expenditures - Draft Budget 2015 (JD Thousands)	
Military Expenditures	1,987,500

Total military expenditures were estimated to reach JD1.99 billion in 2015, almost 10.1% over estimated civil service expenditure. Unfortunately, military expenditures is the only budget item that does not provide any meaningful breakdown of expenditures, making the process of re-estimation very difficult. However, a conservative re-estimation can still be made. From the above re-estimation of civil expenditure, it was found that 0.98% of all civil service expenditures will be eliminated as a direct result of lower oil prices, while the indirect effect has been conservatively estimated to be around 0.06% to 0.3% of total civil expenditures.

Although the share of fuel expenses in the military establishment is considered to be considerably larger than that of the civil establishment, the re-estimation process will be conservative and apply the same share to quantify the effect of lower oil prices. Therefore, military expenditures are **re-estimated down by 0.98%, or JD19,477,500 as a direct result of lower oil prices, to amount to JD1,968,022,500 instead of JD1,987,500,000. The indirect effect, as mentioned earlier, is conservatively estimated to be a reduction of 0.06% to 0.3% or JD1,192,500 to JD5,962,500.**

Figure 2.5 below illustrates the total direct effect on military expenditures.



(iii) Other current Expenditures

Other Current Expenditures – Draft Budget 2015 (JD Thousands)	
Pensions & compensations	1,165,000
Interest payments on debt	1,020,000
Food subsidy	225,000
Fuel subsidy compensation (cash transfers)	180,000
Government units subsidies	117,960
Medical treatments	155,000
Universities subsidies	57,000
Recurring cash assistance (previously part of government unit subsidies)	89,500
Other	119,048
Total	3,128,508

'Other current expenditures' are not classified under civil service expenditures nor under military expenditures, and are general public expenditures affecting the treasury as a whole. Other current expenditures were estimated at around JD3.13 billion for 2015.

Fuel Subsidy Compensation

The most affected component under this expenditure group is the **fuel subsidy compensation** (fuel cash transfer). The third phase of disbursements of this transfer for 2014 did not take place, because oil had been under \$100/barrel for more than three consecutive months before the disbursement date. Since the price of oil will most likely remain under \$100/barrel in 2015, it is safe to **re-estimate 'fuel subsidy compensation' from JD180 million down to zero, indicating a reduction of JD180,000,000.**

Food Subsidies

The other direct impact is on **food subsidies**. This is because the government, through the Ministry of Industry & Trade, sets the price of subsidized flour based on the price of oil, such that if oil prices decrease, the price of subsidized flour is raised, and the actual subsidy on flour falls. This process ensures that the profit margins of bakeries are within a contained range. In September of 2014, the price of subsidized flour was officially set by the government at JD39.2/tonne, the level on which the value of food subsidies for 2015 is believed to have been estimated..

In the beginning of January 2015, the price of subsidized flour was set at JD62.6/tonne after consecutive increases made in correspondence with the drop in oil prices throughout the preceding period. Although the price of subsidized flour was further raised to JD69.4 in February, the re-estimation will be based on January's price of JD62.6/tonne, since it was set based on the average of crude oil price in December, which was around \$62/barrel.

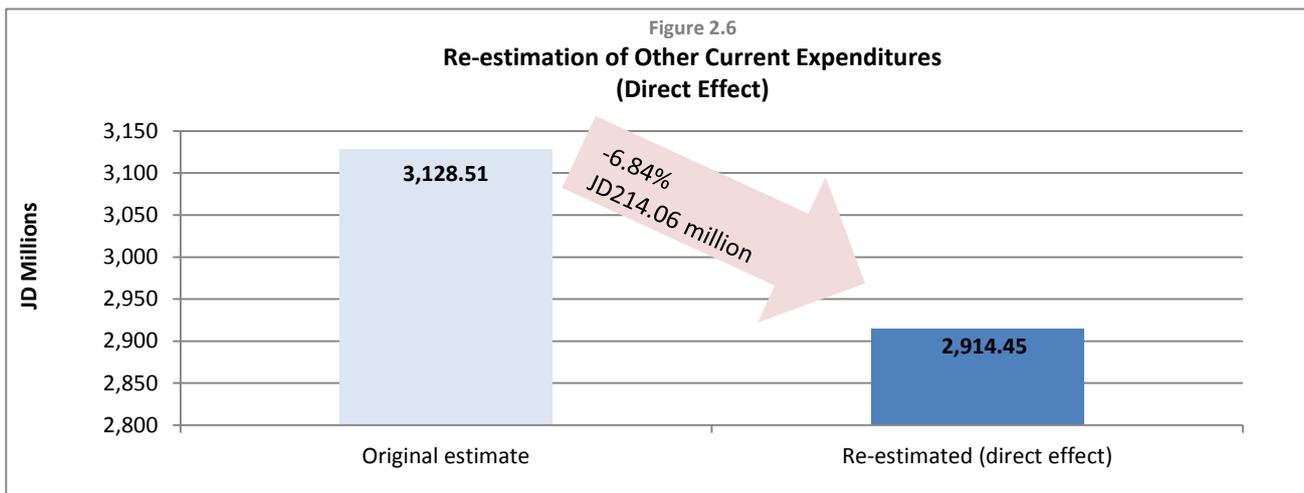
The increase in the price of subsidized flour from the time of preparing the budget for 2015 (JD39.2/tonne) until January (JD62.9/tonne) is around 60%, or JD23.4. This means that the government's estimated subsidies will decrease by JD23.4/tonne. And since the needs of bakeries amount to an estimated 650,000 tonnes of subsidised flour annually, **flour subsidies are re-estimated down by JD15,210,000 to JD209,790,000 instead of JD225,000,000.**

Government Units Subsidies

Finally, ‘government units subsidies’ is expected to fall on account of lower fuel prices. The government units subsidies budget for 2015 has earmarked a total of JD14.2 million for ‘fuels’. This figure would therefore be **re-estimated down by 40%, or by JD5.7 million**, in accordance with the drop in oil prices. Moreover, **transportation and transport expenses** by government units is earmarked at around JD6.3 million. As fuel prices are anticipated to also fall by around 40%, transportation and transport cost are **re-estimated down by JD2.5 million**.

The other main direct effect is on the fuels component under capital expenditures. While there is no separate budget items for ‘fuels’, spending on petroleum products falls under operating & maintenance expenses, which is originally estimated at JD236.7 million for **capital expenditures of government units**. After an investigation of estimated fuel figures stated in the final accounts of 2013 under ‘operating & maintenance expenses’⁵, it was found that an average of 4.5% of these expenses is spent on fuels. This means that **‘operating & maintenance expenses’ can be safely re-estimated down by 4.5% or by JD10.65million**.

Figure 2.6 below illustrates the total direct effect on other current expenditures.



A number of other budget items under current expenditures of government units are expected to be indirectly affected by the decrease in oil prices. These include repair and maintenance costs, office supplies, cleaning services and supplies, official travel missions, machinery & equipment, and other goods and services. Energy is a main production input of these goods and services, which are expected to fall by around 1-5% due to the drop in oil prices, representing a reduction of around JD3.5 to JD17.3 million in terms of indirect effect. A further breakdown of some of the expenditure items, which is currently not publicly available, can help better estimate these indirect effects.

⁵ The final accounts document shows the detailed breakdown of ‘operating & maintenance expenses’ that is not found in the draft budget.

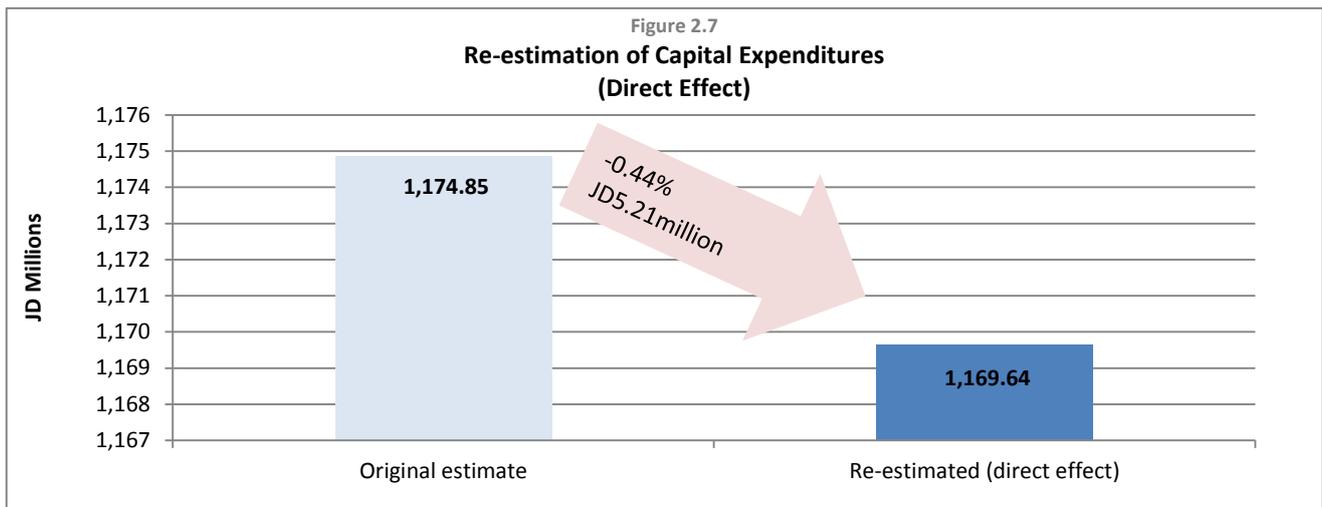
(iv) Capital expenditures

After concluding the re-estimation process for current expenditures, the final step is to re-estimate capital expenditure due to falling oil prices. Capital expenditures were estimated at JD1,174,853,000 in the draft budget for 2015, according to the below:

Civil Service Expenditures – Draft Budget 2015 (JD Thousands)	
21. Compensation to Employees	
2111. Salaries, wages, and allowances	
501 Salaries	5,201.5
502 Wages	4,235.5
22 Use of Goods & Services	
510 Buildings & facilities repair & maintenance	31,283
512 Operating & maintenance expenses	115,861.5
Total	147,144.5
26. Subsidy/grants	
509 Subsidy to other public gov. units/capital	262,576.5
28. Other expenditures	
504 Studies, researches, & consultations	28,653
31 Non-financial assets	
508 Works & constructions	505,815
513 Buildings	2,000
505 Equipments, machines & apparatus	121,446.5
506 Vehicles & heavy duty machines	23,733
511 Equipping & fundraising	8,596
503 Materials & supplies	22,861
507 Lands	42,134
Total	726,585.5
Gross total	1,174,853

The budget component that will be directly affected by the drop in oil prices is ‘operating & maintenance expenses’. The share of spending on fuel out of these expenses was previously estimated to be around 4.5%. Therefore, **operating & maintenance expenses are re-estimated down by 4.5% or by JD5,213,768 to reach JD110,647,732 instead of JD115,861,500**. Although there are some indirect effects concerned with capital expenditures, they will not be taken into account, since many of the affected budget items might be already locked in project contracts. The aim is not to exaggerate the effect of declining oil prices, but to conservatively and as much as possible, accurately, quantify the effect.

Figure 2.6 below illustrates the total direct effect on capital expenditures.



(v) Revenues

Other than having an impact on expenditures, the drop in oil prices will also affect public revenues, albeit to a lesser extent. The main channel through which the effect will take place is **tax revenues from petroleum products**. Unfortunately, sales tax revenues are not broken down into individual constituents, again making the process of re-estimation difficult, but not impossible.

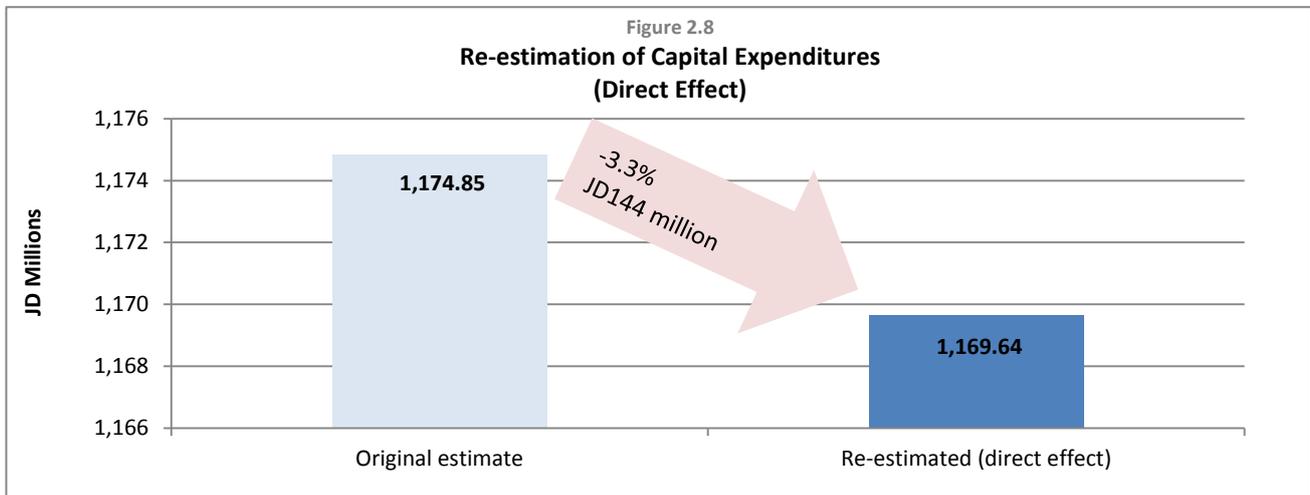
According to the data from the Jordan Petroleum Refinery Company, the total revenues accrued from the sales tax, special tax, and stamps on petroleum products amounted to JD258 million in the first 9 months of 2014, just before the deep slide in oil prices. Annualizing these tax revenues for 2014 as a whole would yield a total of JD344 million $(= (258/9) * 12)$. Following the estimation methodology of the government for sales tax, tax revenues from petroleum products would grow by around the same rate as the nominal GDP growth rate, which was estimated at 6.9% for 2015. Therefore, applying the 6.9% increase on the calculated estimate of total revenues from taxes on petroleum products in 2014 would result in an estimate of JD367.7 million for 2015.

Based on the 40% decline in oil prices, these tax revenues from petroleum products estimated for 2015 are re-estimated down to JD220.6 million, indicating a decline of JD147.1 million in tax revenues. However, it would count as an economic fallacy to stop there, because the oil price elasticity of demand needs to be taken into account. In other words, demand for petroleum products is expected to rise given the drop in prices. However, such demand is considered to be relatively inelastic in the short run which means that the response on demand will be minimal in the short term.

A recent study on the oil price elasticity of demand studied data from a sample of 65 oil-importing countries including Jordan. It revealed that the short-term oil price elasticity of demand is around -0.035. This means that for every 1% drop (rise) in the price of oil, increases (decreases) demand by 0.035%. Therefore, given the 40% drop in the price of oil, the demand

for oil is expected to increase by around %1.4. This translates into an additional JD3.1 million in revenues from taxes on petroleum, which indicates that the **final effect on tax revenues will be a decrease of JD144 million, from JD4,370 million to JD4,226 million.**

Figure 2.8 below illustrates the total direct effect on tax revenues:



Total effect

The above systematic review and re-estimation process revealed the expected changes on both expenditures and revenues, as a result of a 40% decline in oil prices. Aggregating the re-estimations made above provides a comprehensive view of the effect of lower oil prices on the general budget.

In order not to exaggerate the effect of the drop in oil prices on the general budget, the below conclusions are based on the direct effects, and excludes indirect effects. In other words, the direct effect means that only spending on fuels were taken into account and adjusted, despite the well-known fact that oil prices, or fuels, are an input to a wide range of public goods and services. The reason for excluding these indirect effects is to ensure an accurate re-estimation of the minimum effects, taking into account only the budgetary changes that are guaranteed to result from a 40% drop in oil prices.

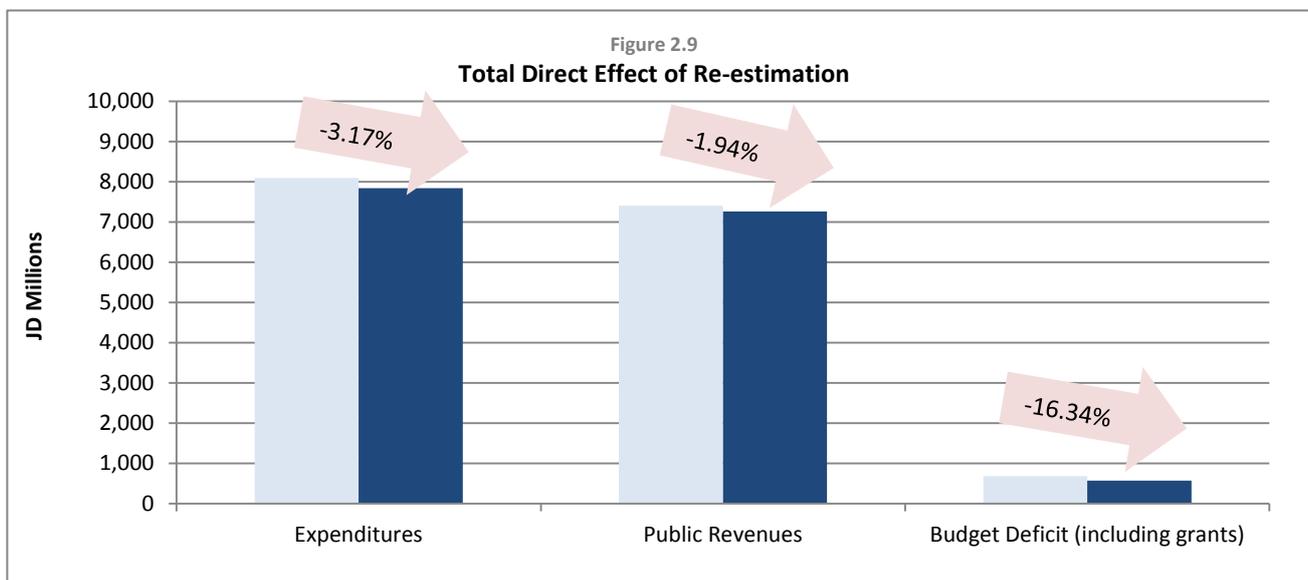
Total Expenditures are re-estimated down by a total JD256.4 million (-3.17%) to reach JD7,840 million instead of the original estimate of JD8,096.4 million.

Revenues are re-estimated down by a total of JD144 million (-1.94%) to reach JD7,264 million instead of the original estimate of JD7,408 million.

Combining the direct effects on both expenditures and revenues yields a net saving of JD112.4 million, which reduces the budget deficit estimate (including grants) by %16.3 and reduces the budget deficit estimate (excluding grants) by 6.2%.

If we add the indirect effects estimated in the above re-estimation process of expenditure items, the total effect on expenditures is substantial. The total indirect effects were estimated on the assumption that the costs of many public goods and services (e.g. maintenance costs, supplies, travel, 'other goods & services... etc) will be reduced from 1% to 5%, since fuels are a main input in the production of such goods and services. However, such an assumption is general and may be considered weak, as the available budget breakdown is insufficient to make an accurate re-estimation.

Having said that, the total indirect effects leads to a re-estimation of total expenditures down by an additional JD6.5 million to JD28.7 million. A more accurate estimation can be conducted by relevant institutions such as the General Budget Department or the Ministry of Finance, which possess the required details of all expenditures.



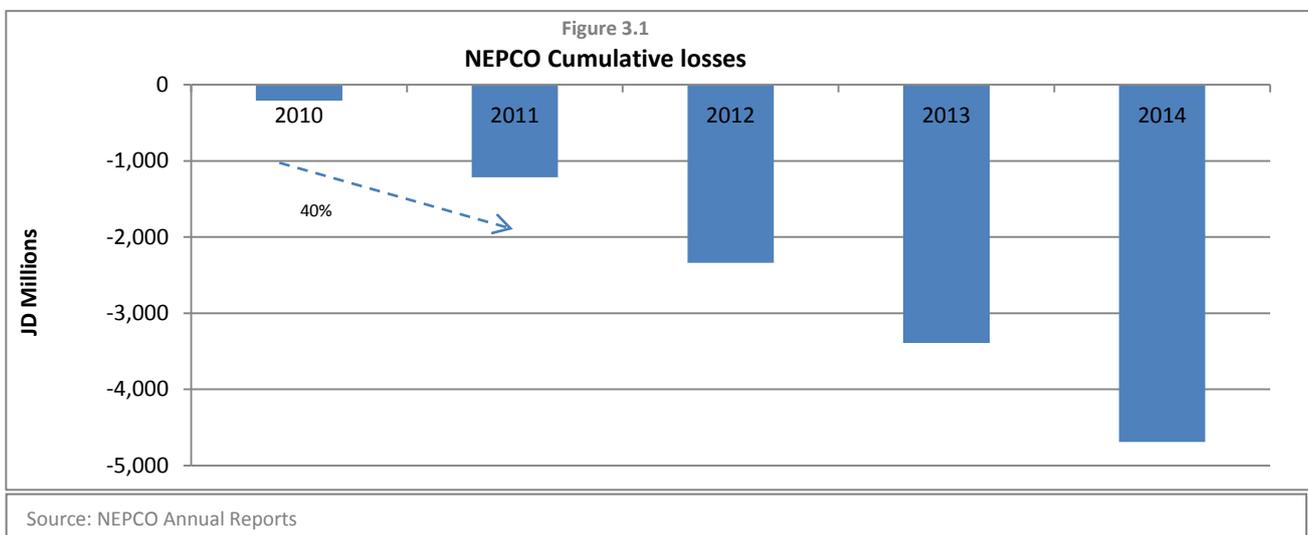
3. NEPCO Losses

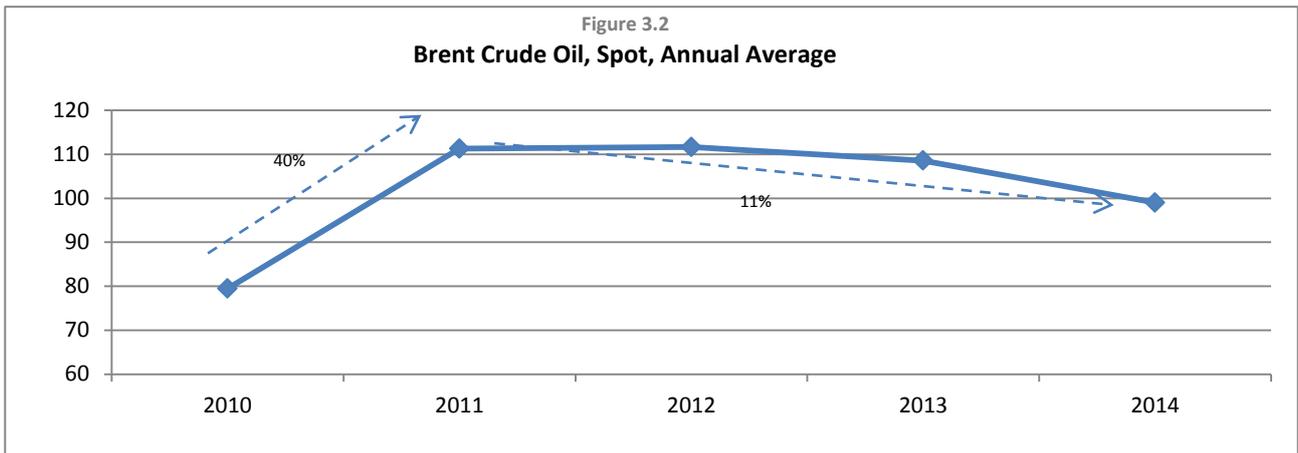
NEPCO's losses are widely considered to be the major factor behind the accumulation of large amounts of debt during the past 5 years. And given this study's focus on the impact of declining oil prices, it is worthwhile to provide a concise analysis on the matter.

However, the effect of lower oil prices on electricity costs has already been analyzed and calculated by a joint parliamentary committee, which discussed it with the government over a number of sessions. It was eventually agreed by both sides that the planned 15% rise in electricity tariffs will be cut by half, such that tariffs will be raised by only 7.5% for 2015.

The rationale of such an estimate is relatively straightforward: since the amount of natural gas being imported from Egypt has gone down drastically over the past few years, NEPCO is currently relying on petroleum products (diesel and heavy fuel oil) for the majority of its electricity production. And since the price of these petroleum products is strongly correlated with the price of crude oil, NEPCO's losses were re-estimated down to half the original estimate since the cost of generating electricity in 2015 is assumed to fall by around 50%, in tandem with oil prices.

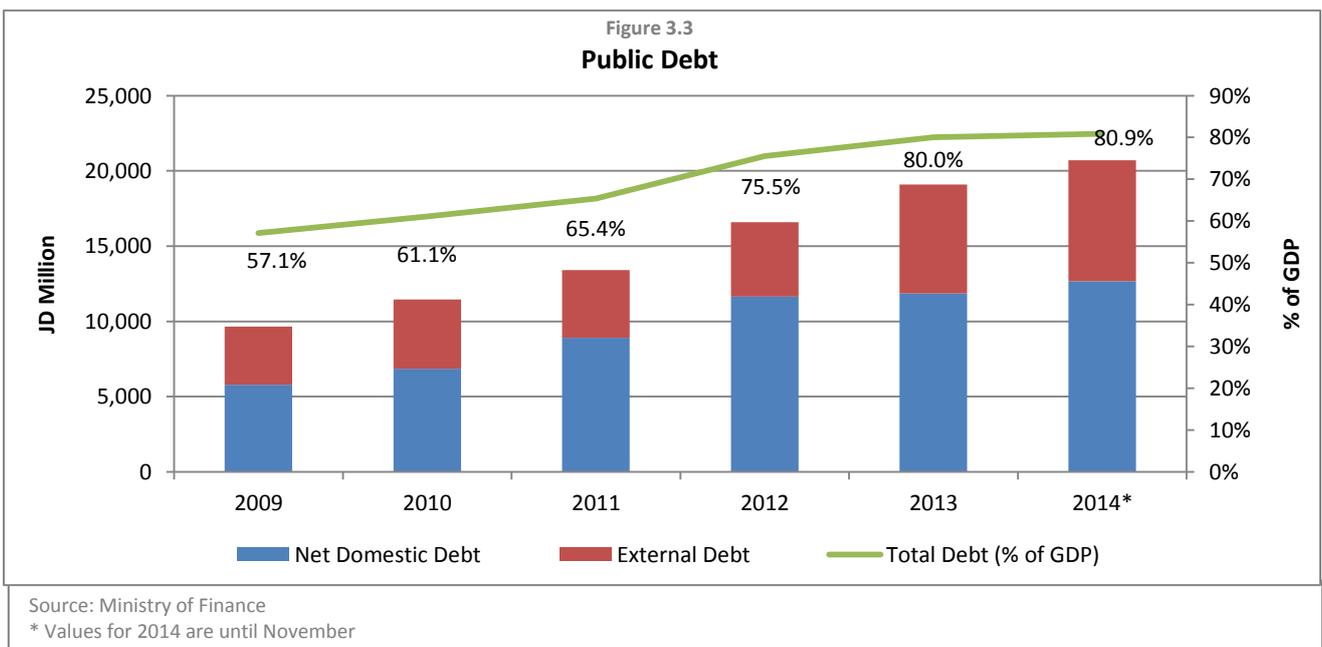
Since this re-estimation process has already been done, it is worthwhile in this section to question the reasons behind the large expanding losses of NEPCO, and why large losses were left to accumulate year after year, for a period of 5 years. Figure 3.1 below illustrates the cumulative losses of NEPCO during the past 5 years, and figure 3.2 below shows the development in the price of Brent crude oil.





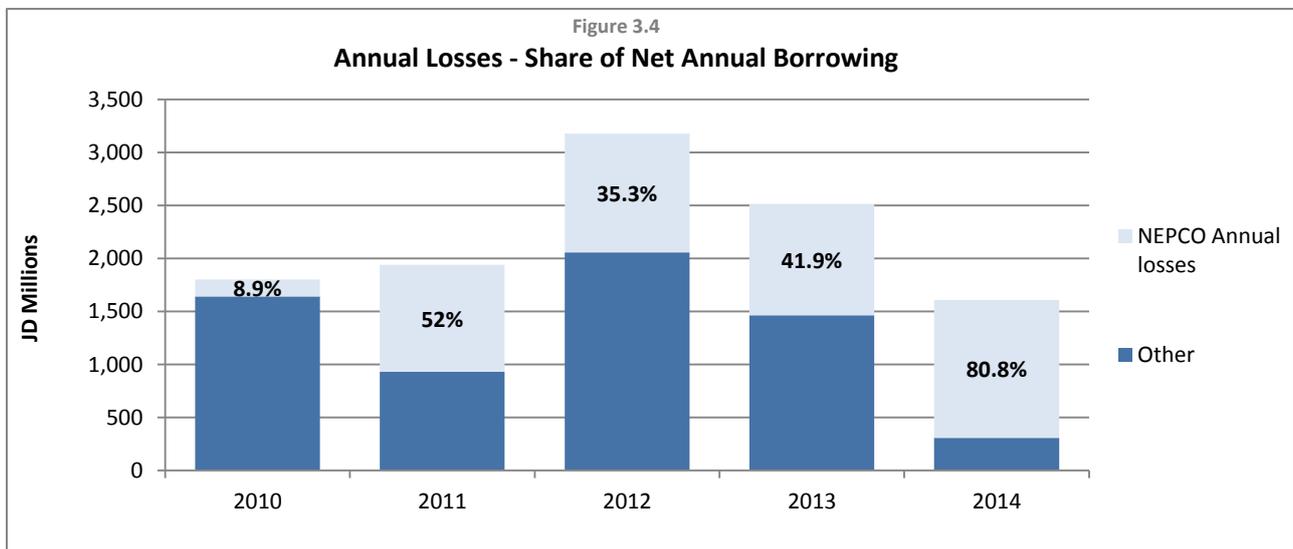
Although the price of oil surged by around 40% from 2010 to 2011, it stabilized at a high price for around 3 years, before declining again in 2014. This development in oil prices does not correspond with the cumulative losses experienced by NEPCO over the past 5 years. This is because the dramatic increases in NEPCO’s losses was and still is caused by a higher reliance on more expensive petroleum products (diesel & heavy fuel oil) on account of less expensive natural gas for the generation of electricity. But the question then remains: Why has nothing been done by authorities to limit the expanding losses, which have increased substantially year after year, putting large pressures on the general budget, and forcing the government to implement an austere reform programme, pushed for by the IMF.

It is important to take into consideration public debt developments in this period. Figure 3.3 below outlines the trend in both external and domestic debt, as well as displaying total public debt as a share of GDP.



Total public debt more than doubled in the five years from 2009 until November, 2014, and its share of GDP climbed from 57.1% to 80.9% over this period. Both net domestic debt and external debt grew significantly over this period. In late 2012, authorities embarked on a debt restructuring process with the support of the IMF. This was necessary in order to deal with the high growth in net domestic debt between 2010 and 2012, growing by 70% or JD4,796 million. Most of this debt was short term with high interest rates. Beginning in 2013, domestic debt tapered off, growing by 8.7% from 2012 to 2014. However, this was replaced by heavy borrowing from the IMF and other external sources that drove external debt up by 63% or JD3,109 million.

A main driver behind this expansion in debt is the losses of NEPCO, which started growing to unprecedented levels in 2010 and beyond. Figure 3,4 below shows NEPCO losses as a share of net annual borrowing (i.e. annual change in debt). As can be seen, NEPCO losses' share of net annual borrowing climbed from only 8.9% in 2010 to a staggering 80.8% in 2014.

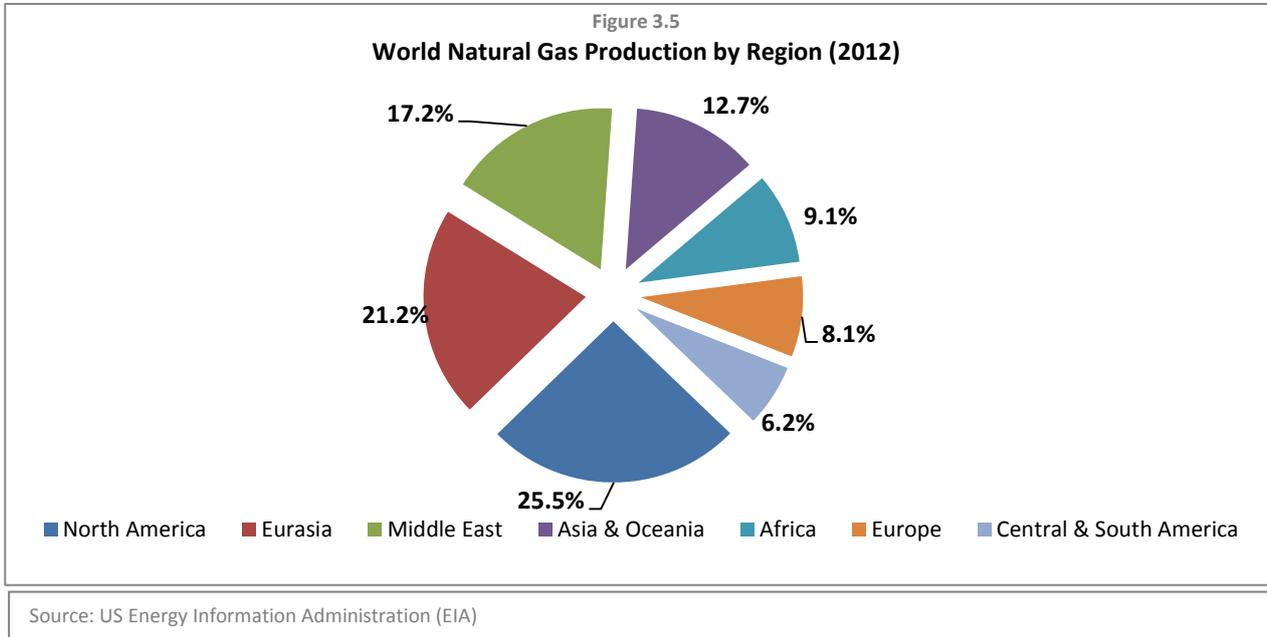


It is very surprising to observe that the deteriorating situation was left to escalate to such an extent. According to the former head of NEPCO, the Egyptian side had provided signs from as early as 2008 that it will lower its gas exports to Jordan, or it will have to raise its prices. By 2010, declining gas imports from Egypt was strikingly apparent, beginning a slide that has lasted until today.

More importantly, the limitations of Egyptian gas imports were even clearly highlighted in the updated national energy Strategy launched in 2007. The strategy outlined a range of obstacles facing the energy sector, most of which still exist till today. A majority of the recommendations and suggestions provided by the strategy were not followed through. The delays are widely considered to be a result of government bureaucracy and red tape, or what His Majesty termed as 'administrative slack'.

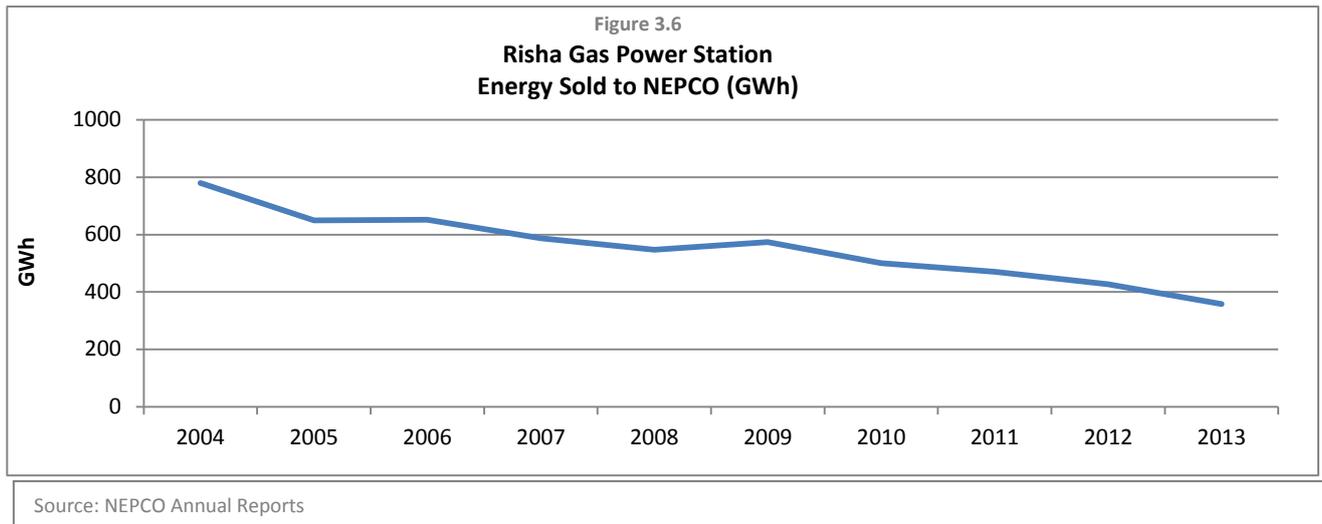
In order to illustrate the seriousness of this slack in the strategic energy sector, a number of alternative scenarios are provided below showing the positive fiscal effects that would have materialized if some issues had been tackled early on.

I. Securing Access to Natural Gas – Scenario 1



Natural gas is considered to be one of the best choices for generating energy, providing efficient output at affordable prices. The global energy sector is experiencing a shift away from traditional petroleum products towards natural gas given its efficiency and low carbon emissions. The top producers of natural gas are the US and Russia, which together produced more than 35% of global output in 2012. This is why North America (i.e. US) and Eurasia (i.e. Russia) are the top regional producers of natural gas, as can be seen in figure 3.5. They are followed by the Middle East which produced 17.2%. Unlike the other regions, Middle East production is distributed across a number of countries, including Iran (5.5% of world production), Qatar (3.9%), Saudi Arabia (2.7%), and the UAE (2%) among others. Many Mediterranean countries are currently negotiating with companies to extract, produce, and sell natural gas, after large amounts were discovered across the Mediterranean sea over the past decade.

In Jordan, gas production is limited to the Risha gas field operated by the Risha Gas Power Station. Domestic production of natural gas has been declining consistently in the past decade, with a series of failed excavation attempts by international companies that ended abruptly with little explanation provided. Figure 3.6 illustrates the decline in energy sold from the Risha Gas Power Station to NEPCO in the decade between 2004-2013.



Energy sold by the Risha Gas Power Station to NEPCO fell by almost half from 2004 to 2013, meaning that the domestic energy share of electricity production has declined drastically over this period. Jordan would not have accumulated so much debt in the past 5 years if it had at least maintained domestic natural gas production at past levels. This was despite the urgent call of the National Energy Strategy, first approved in 2004, for better exploitation and production of natural gas from this field.

Jordan was also not lucky in importing its needed levels of natural gas due its reliance on a single source (i.e. Egypt) since 2004. As explained above, the disruptions and eventual halt of Egyptian gas imports is a major source of Jordan's economic troubles. Since 2004, there was no true attempt to diversify natural gas sources, despite its strategic importance for the country especially after the loss of cheap Iraqi oil in 2003. It was only recently that the government is scrambling to sign gas import deals with a number of countries. In 2014 alone, Jordan was discussing agreements to import gas from Cyprus, Gaza, and 'Israel'.

Also in 2014, authorities pushed for a quicker implementation of the liquefied natural gas (LNG) terminal which has faced severe delays, setting it off to the second half of 2015. Official intentions to establish this port began as early as 2010, and funding was secured with the GCC grant that arrived in late 2012, but the bureaucratic environment in the energy sector prevented it from being quickly set up. It is worth noting here that the LNG terminal is a strategic project currently being implemented in the port city of Aqaba. It will have an initial capacity of 150 million cubic feet per day (mcf), rising to an ultimate capacity of 490 mcf/day, which would cover 79% of NEPCO's capacity as of 2013.

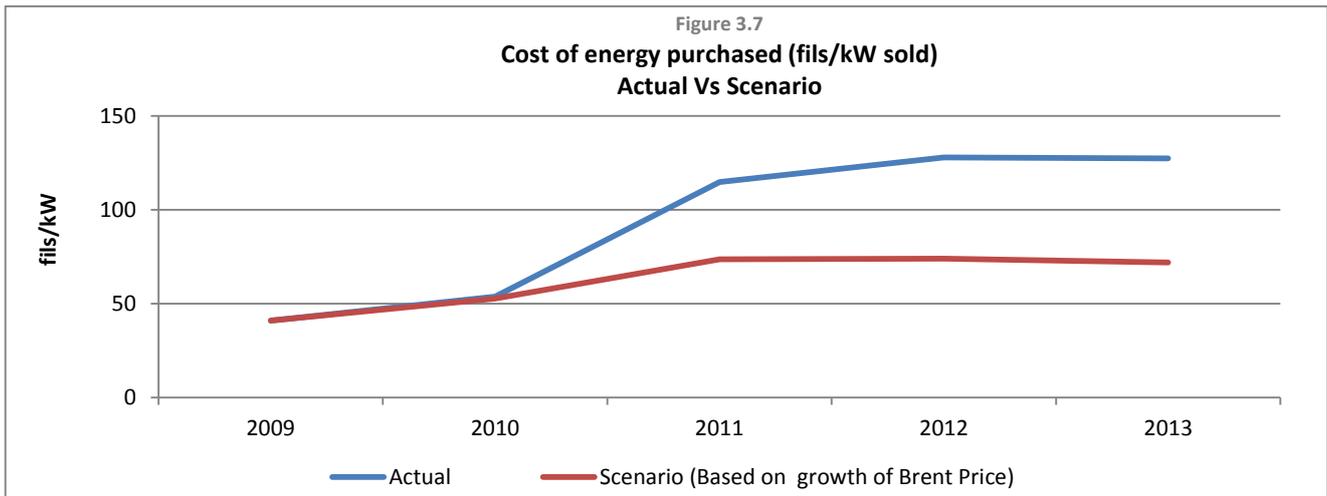
In 2014, the government also finally concluded agreements to utilize its vast shale reserves, estimated at around 40-70 billion tonnes, which would rank Jordan the 6th richest country in terms of oil shale deposits⁶. Moreover, shale oil deposits in Jordan are of high quality and are easy and economical to extract through open-cast mining. However, shale oil was not recently discovered; the energy strategy had already highlighted the large availability of reserves back in 2004 and highlighted the importance in exploiting these reserves. It even prepared a

⁶ Enefit: <https://www.enefit.jo/en/oilshale/in-jordan>

scenario revealing that the best way to compensate for a limited availability of natural gas is using oil shale for electricity production. It took almost a decade for Jordanian authorities to sign a deal with a company to begin implementation.

The following scenario assumes that declining gas imports from Egypt were compensated with either an alternative source of import or higher domestic production of natural gas or oil shale. Both options would have been feasible to compensate the loss in imports if authorities had responded to the national strategy and made the strategic energy sector a priority. This would have been the natural response after losing access to cheap oil from Iraq.

Under this scenario, it is assumed that the cost of one KWh sold will rise in tandem with the price of Brent crude oil and not higher (i.e. same as oil price growth rate). 2009 was chosen as the base year given the comfortable level of natural gas and the relatively low level of petroleum products used in generating electricity in this year. Figure 3.7 illustrates this scenario by charting the cost of energy purchased for each 1 KW sold. The blue line represents actual costs over the past 5 years while the red line is the hypothesized cost, assuming that the gas shortage was compensated from any of the alternative means mentioned above.



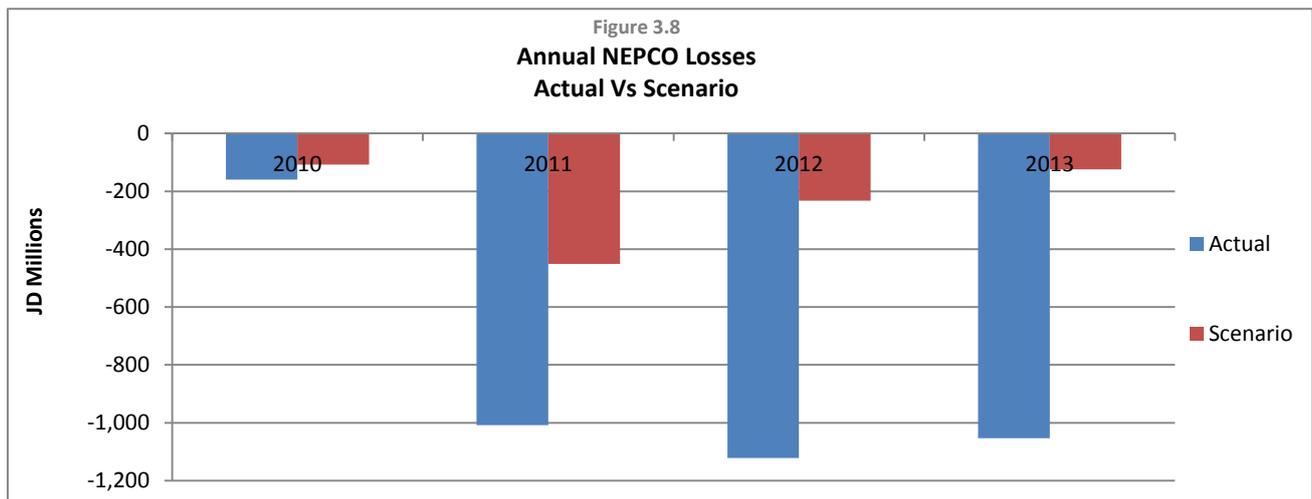
The gap between the actual cost and the hypothesized cost grew consistently throughout this period. The below tables shows the value of these costs and the difference between them:

Costs & Savings under Scenario					
	2009 (base year)	2010	2011	2012	2013
Total Purchased Energy (GW)	11,956	12,857	13,535	16,470	16,719
Actual cost of energy purchased (fils/KW sold)	40.87	53.74	114.84	127.9	127.4
Scenario cost of energy purchased (fils/KW sold) given no shortage in gas	40.87	52.7	73.65	73.9	71.86
Difference - fils (or savings/kw under scenario of no gas shortage)	0	1	41.2	54.0	55.5
Total savings under scenario (million JDs)	0	13.4	557.5	889.5	928.5

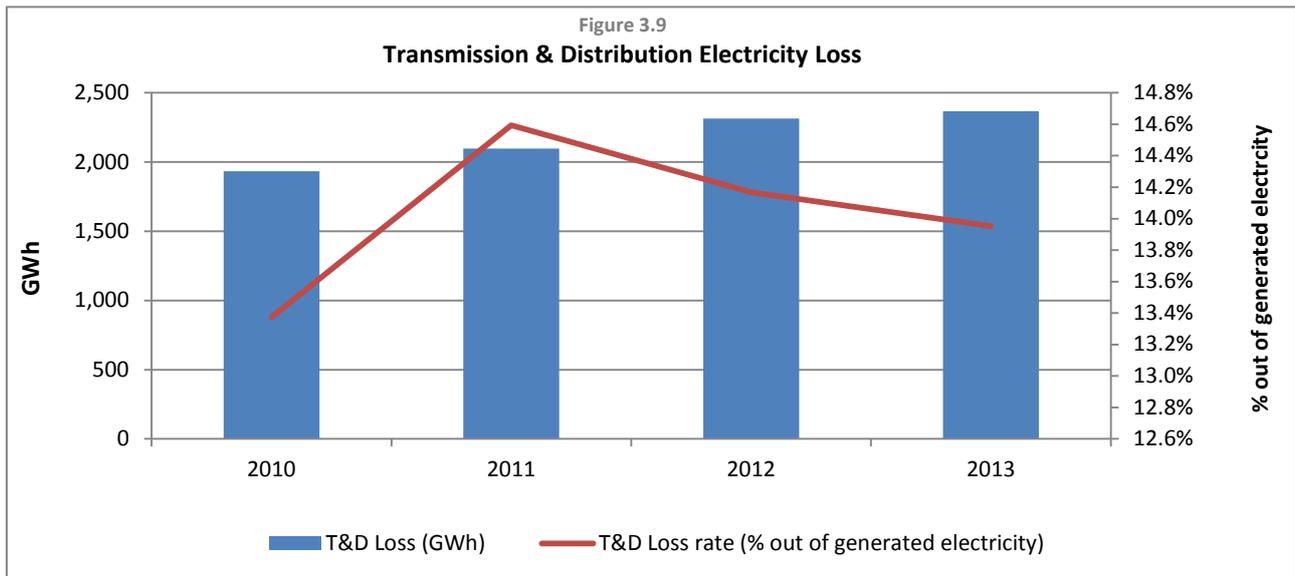
It can then be concluded that if Jordan had compensated the shortage in gas imports during the past 5 years, it would have made a total saving of JD2.4 billion, over %10 of GDP in 2013. Figure shows the amount of annual NEPCOs losses under such a scenario.

II. Addressing Electricity Loss - Scenario 2

Another scenario worth investigating concerns the rate of electricity loss rate in Jordan, which remains well above the international average. The chart below illustrates the transmission and distribution losses (T&D Loss) of domestically generated electrical energy⁷



⁷ The loss rate is calculated from figures obtained from NEPCO annual reports. It equals to transmission and distribution losses as a share of generated electrical energy.



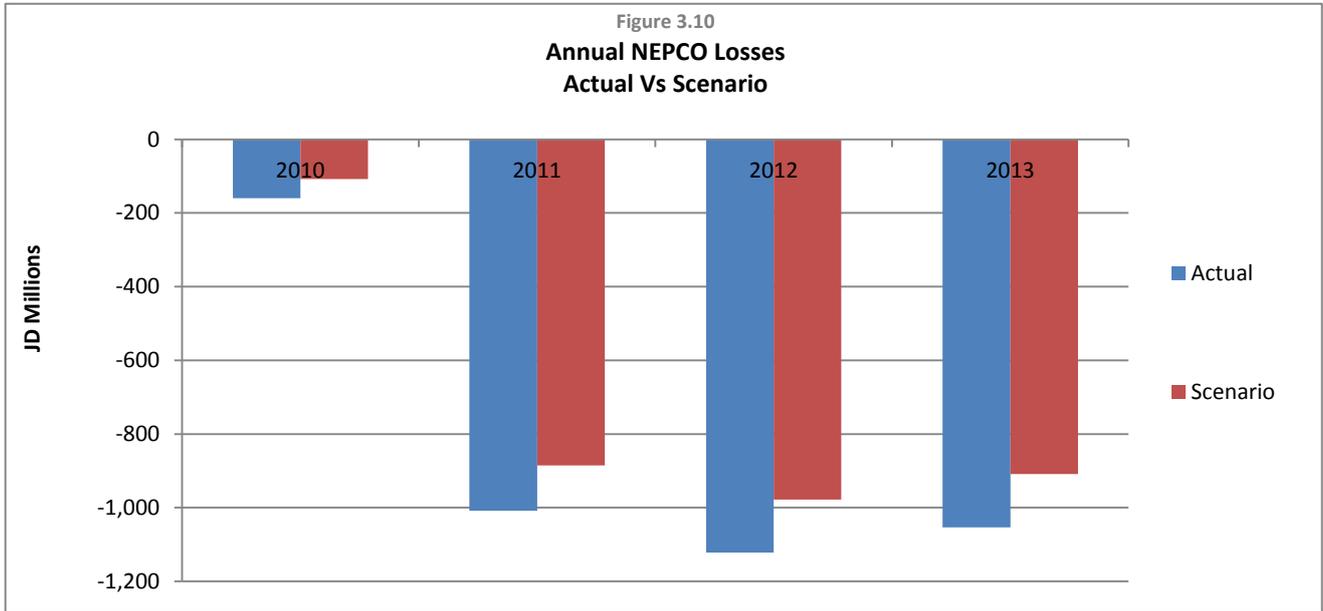
As can be seen, the transmission and distribution loss rate amounted to almost 14% in 2013, well above the international average of 8.1%⁸. While transmission losses are within the range of international averages, distribution losses are much higher. This points towards a large rate of electricity theft, since transmission losses are more concerned with technical efficiency issues, and since the highest loss rate is recorded in the final stage of the electricity supply chain. However, other technical matters also affect distribution loss rate, including what is known as resistance, which causes a loss of energy at high voltages and varies according to the length of transmission lines and other factors.

Given the above information, this scenario assumes that Jordan’s domestic electricity transmission and distribution loss rate is equal to the international average of 8.1% in 2011. It also assumes the actual amounts of gas and fuels used to generate electricity, meaning that no change is made with this regard under this scenario. The scenario aims to show that if the electricity sector had worked earlier on bringing down the loss rate to the international average, NEPCO’s losses would have been much less than the actual losses incurred, entailing a large amount of savings. The following table illustrates this

Costs & Savings under Scenario				
	2010	2011	2012	2013
Total generated energy (GWh)	14,462	14,369	16,332	16,957
Actual T&D losses (GWh)	1,934	2,097	2,314	2,366
T&D losses under scenario (GWh)	1,171	1,164	1,323	1,374
Difference between actual T&D losses & Scenario T&D losses (GWh)	763	933	991	992
Total cost per GWh Sold (JD)	68,270	131,800	145,690	145,300
Total savings under scenario (JD millions)	52.06	122.98	144.39	144.21

⁸International average is on a downward trend. Data exists until 2011. Loss rate for 2012 and 2013 is assumed to be equal to the loss rate in 2011. World Bank Development Indicators: <http://data.worldbank.org/indicator/EG.ELC.LOSS.ZS/countries?display=graph>

Therefore, a total of JD463.6 million could have been saved if the transmission and distribution losses of NEPCO were at the international average, assuming the same amounts of natural gas and petroleum products actually used. Figure displays this effect on the annual losses of NEPCO





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