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## [Tyranny of numbers](#)

### Ahmadinejad's oil windfall: how large was it really?

Posted in [General](#), [Macroeconomy](#) by Djavad on May 24, 2015

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You have probably read or heard very knowledgeable people talk about the \$800 billion of oil revenues earned by the Ahmadinejad administration (for example, Iran's Economy minister quoted in the Guardian [here](#) and Robin Wright speaking on NPR's Diane Rehm show [here](#)), and that this is more than all the revenues earned from oil in the preceding 100 years. Well, don't believe them! Repeating things frequently makes them sound more true but does not make them so. Yes, the oil windfall of 2005-2012 was larger than all the revenues earned in the preceding century, but this is not true in terms of real dollars and therefore not really true.

Before we get to the numbers, let me explain why correcting this urban legend is not as frivolous as it seems. Most Iranians judge their country's economic performance relative to the enormous resources available to it — oil revenues. Many believe that their parents who worked and lived in the boom years of 1970s were far better off than they are today, and that, as the myth goes, enjoyed all that with less revenues. So, the comparison of oil money now and then goes to the heart of evaluating the performance of the Iranian economy then and now.

Let me also say, before you think that this post is to defend economic management during Ahmadinejad years, that the oil money received in those years (2005-2012 = 1384-1391) was huge and it was very badly managed. Some of it was stolen, as we know now, much of it was used to import things people enjoy enormously (flat screen TVs and mobile phones), and some of it turned into new factories. Unfortunately, the end result was that very few jobs were created, and instead of helping the rising number of youth get jobs the oil boom helped them get cell phones.

Now to the numbers, and why oil revenues during the Ahmadinejad years did not exceed revenues in the preceding years — not by a huge margin. The answer is very simple: The US dollar has not kept its value in the past 100 years, so oil revenues today are worth less. In addition they serve a much larger population and have to repair a much larger capital stock.

Any reasonable estimate of what the oil windfall during the last oil boom could have done for Iran's economic growth therefore requires at least three kinds of adjustments: turn nominal dollars into constant real dollars, divide revenues by the total population, and subtract from them the depreciation of the capital stock. The first two are much easier to do, so I do them here. The last one requires assumptions about the capital stock, has to wait for another time since I do not have those numbers at hand. The Central Bank of Iran reports oil exports during the 2005-2012 as \$639 billion, and for the period 1965-2004, the pre Ahmadinejad for years, as \$582 billion. (I am not sure how this number can be reconciled with the \$800 billion that has been bandied about, but the latter is not based on oil export data from CBI.)

Very likely, assuming that all the oil revenues before 1965 were less than \$57 billion, the urban legend is true in face value. But correcting for the value of the dollar, using the OECD price

index, reduces the size of the Ahmadinejad oil windfall to only 31% of the revenues during 1965-2004 and less than 30% of all revenues in the past 100 years. Not a big surprise because dollars in 1965 were worth 16 times as much as in 2012. If you prefer to use the amount of oil rents as reported in the World Development Indicators, the results are very similar (see graphs below). I believe the difference is mostly the cost of producing and exporting the oil. Making the correction for the size of population, reduces this fraction to 16%. In case you are interested, real oil revenues during the 8 years of Khatami (1997-2004) were 38% of the Ahmadinejad 8 years. Again, not a big surprise as oil prices during the first Khatami administration were record lows. Visually, these corrections produce striking results as you can see in the graphs below. I have marked the Ahmadinejad years with red vertical bars.

Figure 1. Oil exports in billions of US dollars.



Source: The Central Bank of Iran.

Correcting for the purchasing power of oil revenues shifts the graph up in early years, indicating that the (Shah) windfall in the 1970s (1971-1978) was much larger than the most recent one.

Figure 2. Oil revenues in billions of 2012 USD.



Source: The Central Bank of Iran.

Finally, adjusting for population size, effective oil exports per person during the last (good) 8 years of the Shah were 3.2 times the Ahmadinejad years.

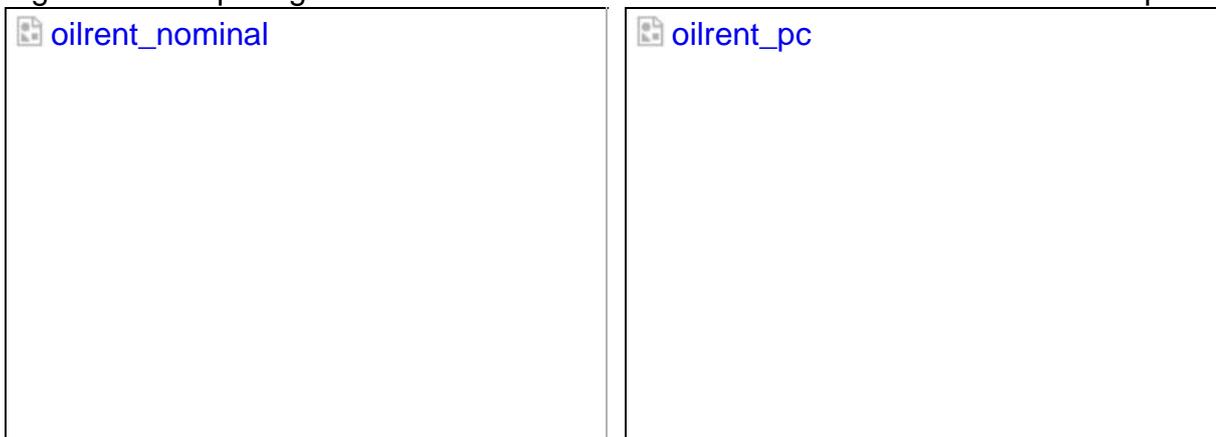
Figure 3. Real oil revenues per person, 2012 USD.



Source: The Central Bank of Iran.

I also reproduce Figures 1 and 3 in terms of oil rents published by the World Bank, which look very similar to the above:

Figure 4. Comparing total oil rents in billions of USD and in constant 2012 USD per capita



Source: World Bank, WDI data.

Conclusion number 1: Don't believe everything you here from pundits and politicians.  
Conclusion number 2: There isn't all that much oil money to go around, so if you care about Iran's economic future, stop thinking about the oil wealth and start thinking about labor productivity. Conclusion number 3: don't hold your breath for the removal of sanctions and rapprochement with the West; it won't bring back the good old times.

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2. **Ahmad** said, on May 29, 2015 at [10:31 pm](#)

I dont understand your conclusion number 2. What do you mean by not that much oil revenue to go around? The oil industry is the most profitable industry in Iran by far ! Some other energy intense industries should be counted as part of the oil industry, since they survive because of the oil we have. Also, please note that Iran is not producing as much as it could, because of the long lasting sanctions that you are hinting that are not important. You should also consider our natural gas reserve, we cannot export them, partially, because of our isolation in the past 36 years.

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- **Ahmad** said, on June 1, 2015 at [3:44 pm](#)

In short what I am saying is that oil and gas industry is/was/will be an important industry and I don't understand what you mean by " stop thinking". Also, would not long-term sanctions affect productivity?

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- [Djavad](#) said, on June 1, 2015 at [4:22 pm](#)

Non-economists often exaggerate the importance of natural resources as a source of wealth of nations. My point in this particular sentence is not to deny that oil will play a key role in Iran's future, but rather to say that it will not be the driver of economic growth. Oil revenues cannot do for Iran's economy today what they did in the 1970s because per person they are not nearly as large as they were in that golden era. Furthermore, even then they did not raise labor productivity as much as they raised the purchasing power of the average Iranian.

In my view, the true golden era of economic growth was the 1960s when the economy grew by about 9% per year for about 10 years without much help from oil. I imagine that rising labor productivity was the engine of growth then. I am not sure if someone has studied this issue in any detail, but understanding economic growth in the 1960s is a good place to learn about Iran's potential for long term economic growth.

- [Djavad](#) said, on June 1, 2015 at [4:27 pm](#)

Simply put, oil revenues per head are a fraction of what they were in 1970s, so in that sense there isn't much to go around even if oil exports double. More importantly, long term economic growth is the result of rising labor productivity, not the size of oil revenues. Unless it is properly managed, cheaply earned foreign exchange make us less productive. Please also see my reply to another similar comment on this post.

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- **Ahmad** said, on June 2, 2015 at [11:15 am](#)

Now I understand, thanks for your clarification. But there is one more question, don't you think that the sanctions negatively affect the productivity in the long-run?

- [Djavad](#) said, on June 2, 2015 at [11:28 am](#)

Most likely lower productivity because they reduce output more than employment.

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### 3. [Pirouz](#) said, on May 29, 2015 at [8:33 am](#)

Excellent post.

However, I have one question for Prof. Salehi: How do you propose to increase the productivity of labor in Iran? I mean I don't think that anyone among officials or even among the opposition would deny that the main ailment of Iran's economy is its heavy dependence on oil rent and a low productivity of labor. The question is how to remedy the problem and increase the productivity of labor. What's Prof. Salehi's suggestion? I have been wondering where Prof. Salehi stands on that issue for a long time.

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- [Djavad](#) said, on June 1, 2015 at [4:35 pm](#)

Thank you! If I knew how to raise labor productivity I could solve the world poverty and win the Nobel prize. How to make people more productive has a few simple answers but each one begs a new question. For example, we know equipping people with implements (like a tractor) or teaching them skills makes them more productive. Giving them access to credit is another essential ingredient. Getting them out of each other's way (like placing traffic lights at crossroads) is also known to be important. What we do not know is how to do all these things!

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