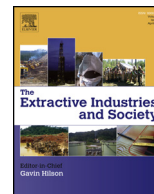




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Original article

The role of transnational companies in oil imports in the United States: Reviewing after the fracking boom

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ABSTRACT

Oil production in the United States increased in 2009 for the first time since the oil peak due to fracking. This and the slight decrease in oil consumption, resulted in a significant fall in U.S. oil imports. This major change inspired this paper, in which we analyse potential changes in self-supply (the extent to which the international oil production of transnational companies meets the oil requirements of the United States). The period between 2009 and 2013 was studied, and compared with that of 2005 to 2008, by estimating and evaluating a set of indicators related to the degree of self-supply of these transnational companies. The relevance of this work is twofold: on the one hand, because of the economic and geopolitical implications of this self-supply and on the other hand, because of the contribution of the research to energy economics. The research suggests a continuation of a low degree of self-supply but for other reasons than those formulated in the hypothesis which are based on the consequences of fracking.

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1. Introduction

In 2009, oil production in the United States broke a decreasing trend that began in 1970, when the peak of oil production occurred. In 2014, the production of barrels of oil returned to 1991 levels, increasing by nearly 50% since 2009, mainly due to the exploration and extraction of unconventional hydrocarbons by fracking. On the other hand, oil consumption has fallen slightly in recent years due to the economic crisis. This evolution in production and consumption has resulted in a highly relevant change: a significant reduction of oil imports into the United States.

Before these changes were visible in data, Palazuelos (2010) analysed the role of transnational corporations as oil suppliers to the United States through the notion of self-supply. Self-supply shows the extent to which the international oil production of transnational companies meets the requirements of the United States. Thus, the research focused on

understanding to what extent these big companies used their international production to supply imports and, therefore, to what extent these companies played an important role in the external supply and exerted a strategic role in ensuring energy security in the country. The result of the analysis showed, however, that imports from international oil production into the U.S. represent a small part of its oil imports, namely a low degree of self-supply. Consequently, the research established two conclusions: (1) U.S. refineries acquire most processed crude oil from the international market, and as a result are dependent on the unstable conditions of these markets, and (2) the economic interests which big U.S. oil companies have abroad are greater than those within the United States and, as a result, these companies do not play a decisive role in the national strategy to secure supply from abroad.

The purpose of this paper is to review the role of transnational companies as oil suppliers to the United States taking into special consideration the changes that have occurred since 2008. In other words, to what extent did the increased production, due to fracking, and the slight decline in consumption because of the crisis, affect Palazuelos (2010) conclusions? To do this, we consider whether the reduction in imports has been accompanied by a change in the characteristics and/or by a modification in the behaviour of the various actors in the U.S. oil industry from 2009 to 2013. Thus, it covers a period of five years, since 2009 was the first year of increased oil production and 2013 is the last year for which

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complete data are available for the study.¹ The study conducted by Palazuelos (2010) also refers to a multiannual period, 2005–2008, which favours the comparison of results.

After explaining the two variations of the new period (production and consumption), the paper will analyse to what extent the two major issues raised by Palazuelos (2010) have changed: (1) what happened to U.S. imports of crude oil and (2) if the external market remained the main stage for large companies. Based on this, we will also be able to understand what happened to the two indicators measuring the extent to which imports of U.S. crude oil are supplied by the production extracted abroad by transnational oil companies. At the same time, we can examine if the importing regions have been altered.

The relevance of this work is twofold. First, knowledge of the characteristics in which the U.S. managed its oil supply has consequences from an economic (effects of dependence on foreign oil) and geopolitical perspective (to what extent the national strategy to ensure energy supply passes through their transnational companies). Second, the study provides statistical information processed exclusively by the author. Achieving these relevant and innovative results justifies the complex and tedious process of creating statistics (detailed below), forced by the alarming shortage of analysis on the relationship between oil companies and the characteristics of oil imports.

After this introduction, the method used and the explanation of the statistical sources will be discussed in the second section. Then, the results regarding oil production and oil consumption will be analysed. We will also study the business structure of the sector, as well as imports and international production by transnational corporations. Further, we will calculate the two indicators; their interpretation serves to explain the extent and characteristics of self-supply by these transnational companies. Finally, the fourth section will address the main conclusions and policy implications of this study.

2. Method

The production and commercial cycle of a primary resource such as oil consists of three phases: 1) Upstream: exploration, drilling, and extraction of the resource; 2) Midstream: transport and storage; 3) Downstream: refining of crude oil, distribution, and sale of petroleum products. Thus, companies involved in the oil industry can be classified according to the phase they develop: a) The full cycle, from upstream to downstream; b) Only the upstream phase (extractive companies); c) Only the downstream phase (refiners). According to the geographic location in which they carry out these activities, companies may be A) National or domestic companies that extract and/or refine only in their country; B) Transnational companies that also extract and/or refine abroad, i.e., the production of oil and/or petroleum products in other countries.

The balance of the oil cycle of a country records the annual flows of production and trade of oil and derivatives, to which inputs and outputs for supply of marine bunkers and changes in stocks are added. Leaving aside the latter two components due to their small extent, the approximate balance is as follows:

Oil supply = Oil production + Oil imports – Oil exports

Derivatives supply = Derivatives production + Derivatives imports – Derivatives exports

¹ It is preferable to take data from a period instead of a single year because no significant changes in the behavior of the variables that determine the relationship between the activity of oil companies and import trends are avoided.

Crude oil production typically includes liquid gases, which are extracted together with crude oil. This output is barely used for final consumption, since almost all of it serves as input to refineries to produce oil products, which are the output of refineries.²

Therefore, considering the above criteria in a country like the United States, which a priori is known to be highly dependent on crude oil from other countries and virtually has no primary resource exports, the level of imports (M_C) equals refined oil production (P_R) minus crude oil production (P_C):

$$M_C = P_R - P_C$$

Considering the type of business they operate, there are three kinds of companies: first, those which only carry out the extractive activity and in the absence of exports sell their oil production to refining companies; second, refining companies which purchase crude oil from the extractive companies or import it; third, companies that operate the complete cycle. If they refine more than the crude oil they extract, they must either buy oil from those extractive companies or import it. Consequently, the import (M_C) is undertaken by refineries lacking crude oil production (M_R) and by full cycle companies with insufficient crude oil production (M_{FCC}):

$$M_C = M_R + M_{FCC}$$

Finally, the import of crude oil can be classified as crude oil extracted abroad by U.S. companies (international production: M_{IP}) or “foreign” crude oil extracted by other companies (M_{FOR}):

$$M_C = M_{IP} + M_{FOR}$$

This breakdown is of great economic and geostrategic importance for two reasons. The first, measured by the M_{IP}/M_C indicator, expresses the proportion of imports corresponding to international crude oil production by U.S. companies. Therefore, depending on how high/low the indicator is, two implications arise:

- Lower/higher exposure to recurrent volatile international crude oil prices;
- Minor/major security issue to guarantee the external supply of a strategic commodity like oil.

Thus, a high/low indicator means that transnational companies carrying out the full cycle perform a wide or reduced intra-firm trade (of crude oil extracted by them abroad) or international crude oil of other U.S. extractive companies; while refineries in need of imports buy much or little from one or another American company that extracts crude oil abroad.

The second implication, as measured by the M_{IP}/IP indicator, expresses the share of imports which come from international production in comparison with the total amount of international production. We can thus draw two inferences depending on whether the indicator is low or high:

- Greater/lower weight of intra-firm trade or inter-transnational companies in the internationalisation strategy of these companies;
- Stronger/weaker convergence of economic interests of those companies with the geo-political interests of the government.

A high/low indicator means that the part of the global business

² The amount of that output is roughly equivalent to the amount of oil (of domestic production and imports) used, as they have small gains and losses in refining treatments. According to the technological characteristics of the refineries there are various types of physical-chemical treatments of crude, which lead to different derivatives or refined products in certain proportions, such as naphtha, gasoline, kerosene, diesel, fuel oils, lubricants, and others.

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