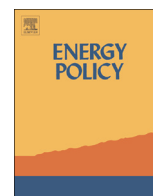




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## Viewpoint

## The 2014 oil bust: Causes and consequences

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## HIGHLIGHTS

- The 2014 oil price collapse was possibly triggered by the falling Euro versus the US Dollar.
- The economic divergence between the US and the EU possibly caused the USD/EUR volatility.
- The oil fundamentals contributed to the price collapse with the negative sentiment.

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## ABSTRACT

This article suggests that the 2014 oil price collapse was possibly triggered by the falling Euro versus the US Dollar. Specifically, the USD/EUR exchange rate likely adjusted to the sudden economic growth outlook divergence between the US and the EU, as evident by the relative short term interest rate spread measures, and triggered a “strong dollar” trade, which is negative for the crude oil prices. Thus, in our view, the 2014 oil price bust is another episode of oil price inefficiency, similar to the 2008 oil bubble. The key argument presented in this article is that, as long as there are temporary economic growth divergences between the US and the EU, the resulting exchange rate volatility is likely to create the pricing inefficiencies in crude oil, which in fact are mean-reverting, as the economic growth divergences eventually dissipate.

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## 1. Introduction

Crude oil prices dramatically collapsed in the second half of 2014 from nearly \$110/barrel to just above \$40/barrel, as illustrated in Fig. 1. It is particularly interesting to note that the oil bust of 2014 was completely unexpected, since the price collapse was not preceded by the spike, as it was the case in 1991 and 2008 – the price of crude oil just simply collapsed from a gradually rising uptrend. Thus, it is very important to understand the potential causes and consequences of the 2014 oil price collapse, especially given that the literature documents significant linkages between the oil prices and the financial markets, the macro-economic cycle, and more specifically inflation, (see Hamilton, 1983, 2003; Mork, 1989; Oladosu, 2009; Barsky and Kilian, 2004; Gómez-Loscos et al., 2012; Defina and Taylor, 1993; Soucek and Todorova, 2013).

The financial media attributed the 2014 oil price collapse to an apparent glut in oil supplies, noting the possible demand slowdown in China, and relentless energy production from the US shale. Thus, the financial media assumed that the oil price efficiently responded

to a newly released fundamental information in the second half of 2014. Yet, the academic research is inconclusive, at best, on whether oil prices behave efficiently. The empirical evidence shows that oil prices are generally efficient in some periods, while somewhat inefficient in certain sub-periods, with so-called structural breaks when oil prices clearly behave inefficiently, for example during the 2008 oil bubble (see Stevens and de Lamirande, 2014; Charles and Darné, 2009; Alvarez-Ramirez et al., 2008; Kristoufek and Vosvrda, 2014; Zhang, 2013; Wang and Liu, 2010; Ortiz-Cruz et al., 2012; Shambora and Rossiter, 2007). Thus, the causes of the 2014 oil collapse must be evaluated beyond the assumption of oil price efficiency. Specifically, one has to consider the possibility that the 2014 oil price collapse was an irrational overreaction to a non-fundamental trigger. In fact, in this paper we present our viewpoint that the 2014 oil price collapse was at least partly an irrational overreaction to a non-fundamental trigger—specifically the USD/EUR exchange rate. Our argument is consistent with The Bank of International Settlements report (BIS, 2015), which states that “changes in production and consumption fall short of a fully satisfactory explanation of the abrupt collapse in oil prices in 2014”. Nevertheless, the surging production from the US shale producers provided a significant negative sentiment during the oil price downturn, and thus, contributed to the apparent overreaction to the downside.

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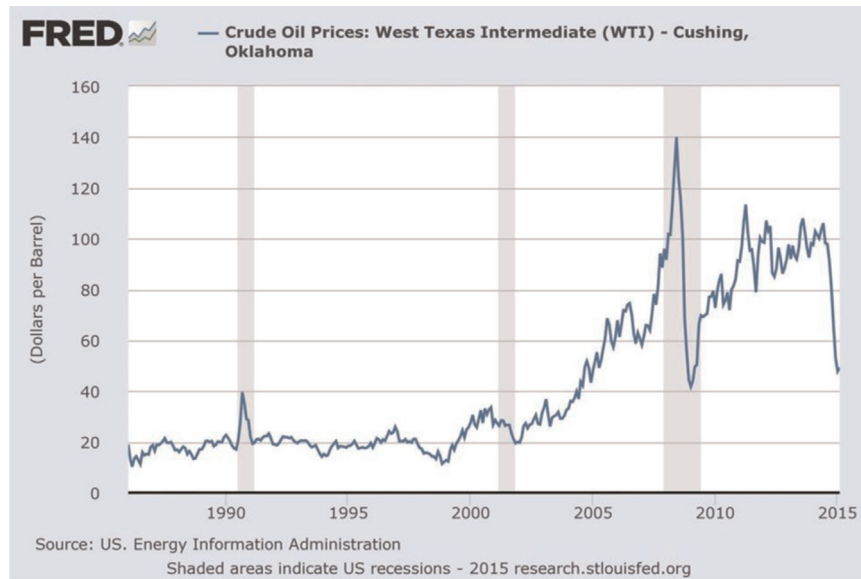


Fig. 1. Crude oil prices.

## 2. Methods—the efficient market hypothesis framework

In an efficient market (see Fama, 1970, 1991), the price of oil reflects the balance between crude oil supply and demand, and possibly randomly fluctuates around the fundamental value (weak-form efficient market hypothesis). Likewise, the price of crude oil efficiently adjusts as the new publically available fundamental information emerges (semi-strong version of market efficiency), or even as the private information becomes available (strong version of market efficiency), see Fig. 2.

In an inefficient market (see Shleifer and Summers, 1990; De Long et al., 1990), the price of crude oil does not always reflect the fundamental supply/demand information, and it reacts to certain non-fundamental information or triggers, which makes it possible to have the periods of significant and persistent deviations from fundamental values, defined as price bubbles to the upside, or overreactions to the downside (Fig. 3).

Given the strategic and macroeconomic importance of crude oil, it is essential that oil markets remain as efficient as possible. Thus, it is important to understand the causes of significant oil price reactions, such as the price collapse of 2014, to detect any inefficiencies and to establish the regulatory framework to rule out similar inefficiencies in the future. In fact, the oil futures market has been more regulated in the aftermath of the 2008 oil bubble, with imposed position limits on speculators which took the major blame for the price bubble (see Collins, 2010; Cosgrove, 2009). Despite more regulations, another significant price move occurred in 2014, this time to the downside, and the question is whether this was another episode of market inefficiency (Fig. 3) or possibly an efficient reaction to the newly released fundamental information (Fig. 2).

An analysis of information related to the oil market supply/demand released sometimes during the mid-2014 is likely to provide insights on whether the 2014 oil price collapse is an efficient reaction to the sudden and unexpected change in oil price fundamentals or not. Note, a newly released information must be completely unexpected to justify the decline in oil prices in mid-2014. The lack of such fundamental information would open the door for investigation of potential non-fundamental triggers.

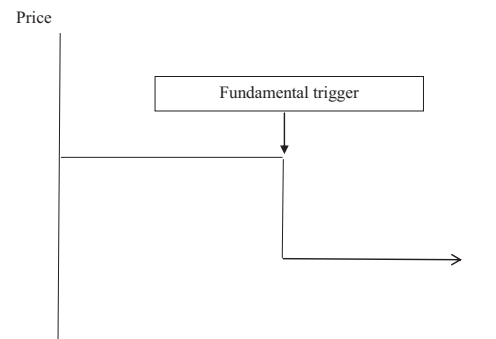


Fig. 2. Efficient market hypothesis.

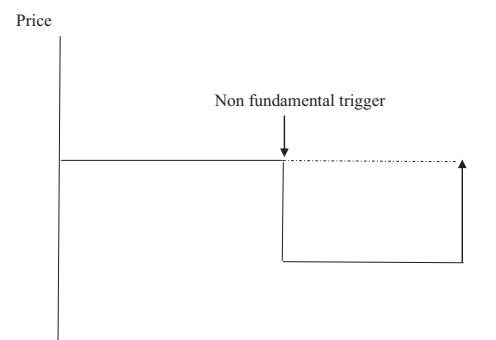


Fig. 3. Inefficient market-overreaction to a non-fundamental information to the downside.

## 3. Results (findings)

### 3.1. Evaluation of possible fundamental triggers

We look at the data for oil consumption (demand) and oil production (supply) during the volatile period from 2005 to 2013 (which includes the oil bubble of 2008) and estimated supply/demand data for 2014. The world oil consumption increased from about 85 mill barrels per day (mbpd) in 2005 to about 90 mbpd in 2013, which represents about 5–6% increase (Table 1). However,

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