

Economic Analysis

U.S. Economy's Resilience to Oil Price Shocks

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- **Economic cycles are more resilient to short lived oil price shocks**
- **Long-term oil price changes have a strong effect on GDP growth**
- **The cost of production appears to be less sensitive to oil-price changes**

The U.S. recessions of 1973 and the 1980s were strongly correlated with an oil price increase. However, post 1980s economic activity was marked with low volatility and created an illusion of enhanced capability of the economy to absorb oil price shocks. Overall, the economic expectations are such that more flexible labor markets and better monetary policies should produce an economy that is less vulnerable to oil shocks. Additionally, the U.S. has made a deliberate policy shift towards a decreased reliance on oil imports by both diverting some of the energy demand to alternative sources while at the same time increasing domestic crude oil production. The question now is whether the U.S. economy's resilience to oil price shocks has changed. The decline in crude oil prices over the last four months is a key development to watch, as we've witnessed price declines of 34% and 31% in Brent Crude and West Texas Intermediate (WTI) respectively from their peaks in June of this year.

The primary path outlined by economists in which oil prices affect overall economic wellbeing is effectively reduced to the following causality chain – an increase in oil prices raises energy expenditures, which raises the price of goods produced and reduces goods consumed, thereby generating inflationary pressure and decreasing GDP growth and the balance of payments in an oil-import oriented economy. Consequently, the recent decline in oil prices should affect positively GDP but should generate deflationary pressures. While a positive boost to GDP would be welcomed, the further downward pressure on inflation would not, since the Federal Reserve stands at the crossroads of a robustly improving labor market outlook and stubbornly low inflation, which for the last 2 years has been below their target rate of 2%. The risk of further declining prices would serve to constrain the Fed against timely action on monetary policy normalization.

Table 1
Post-Great Recession Oil Price Effect

1% Negative Shock to Brent Crude Oil Price			
	Macro Indicator	1st Quarter Effect	Accumulated Annual Effect
Transitory	U.S. Real GDP	-0.03%	-0.02%
	1/2 life 1 Quarter	CPI Headline	-0.04%
Permanent	U.S. Real GDP	0.43%	1.76%
	CPI Headline	0.08%	0.36%

Source: BBVA Research

Table 2
Historic Oil Price Effect (1986 to Present)

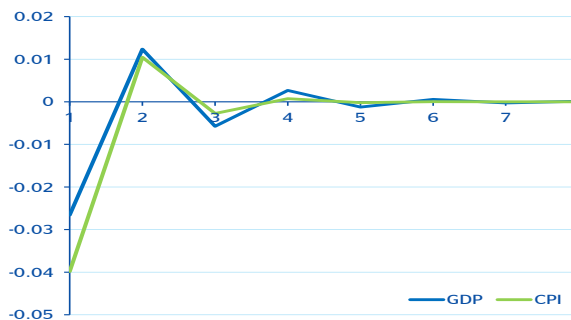
1% Negative Shock to Brent Crude Oil Price			
	Macro Indicator	1st Quarter Effect	Accumulated Annual Effect
Transitory	U.S. Real GDP	-0.11%	-0.37%
	1/2 life 2 Years	CPI Headline	0.03%
Permanent	U.S. Real GDP	0.01%	0.07%
	CPI Headline	-0.03%	-0.15%

Source: BBVA Research

There are visible differences when we compare the U.S. GDP and inflation responses to oil price shocks for the time period from 1986 to present to the post-great recession period. Historically, we document a strong positive cyclical relation between oil price fluctuations and the U.S. GDP, were both GDP and the crude oil price move in the same direction - harmonized with business cycle fluctuations. The oil price shock effect on GDP growth fades away slowly, reaching its half-life after two years. The inflation rate has a stronger response to a permanent change to crude oil prices, which would trigger a change to the inflation trend. Consistent with the causality chain discussed earlier, the permanent decline in the oil price increases GDP growth and results in deflationary pressure, reducing CPI.

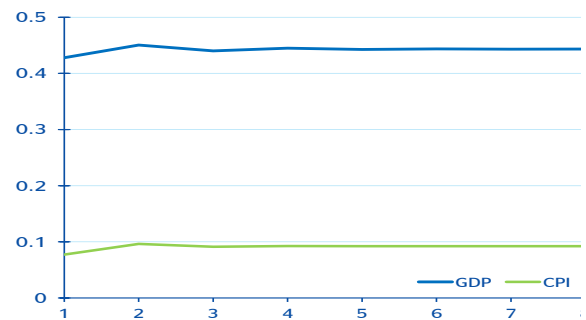
Post-great recession evaluation of the crude oil shock displayed a weak cyclical effect of the oil shock, as there has not yet been a complete business cycle observed since the last recession. At the same time, the permanent decline in the crude oil price had a sizable positive effect on the potential GDP growth. Contrary to the historic full sample outcome, the negative oil price shock also had a positive effect on CPI and indicated a larger demand-side consumer response to the change in oil price and/or less sensitive producer prices to the oil price change. Overall, cautiousness should be taken when interpreting the actual size of the impacts, since our first look into post-great recession evaluation does not take into account other macro-economic aggregates as well as a possible asymmetry in the macro variables' response to the oil price shock.

Chart 1
Post-Great Recession Oil Price Transitory Effect (%)



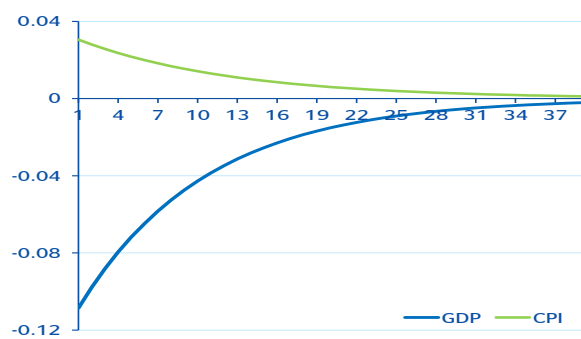
Source: BBVA Research

Chart 2
Post-Great Recession Oil Price Permanent Effect (%)



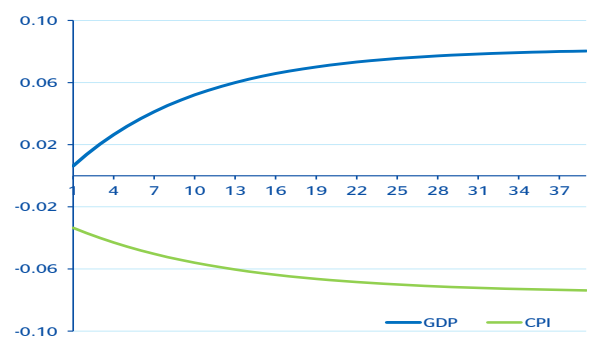
Source: BBVA Research

Chart 3
Historic Oil Price Transitory Effect



Source: BBVA Research

Chart 4
Historic Oil Price Permanent Effect



Source: BBVA Research

Bottom Line

The post-great recession U.S. economy has displayed a decline in producer sensitivity to crude oil price while indicating a more sensitive consumer response. There is a qualitative change in the post-great recession oil shock effect, one in which the inflation trend became less interconnected with movements in the crude oil price. The rise of alternative energy sources and the decline of energy intensive production as a share of GDP could be likely contributors to the break of the traditional oil price-inflation relationship. At the same, this should also take some weight off the Federal Reserve's shoulders and enable the FOMC to continue with its predetermined steps of monetary policy normalization. However, our initial analysis did not indicate an increased resilience of the U.S. economy to oil price shocks. In the case of a permanent shock to the oil price, we observed a sizable effect on the potential GDP growth, with a negative relationship between oil price change and GDP growth. This outcome is in line with previous economic literature findings that the negative oil price-GDP relationship holds even for the oil-exporting countries as well as for both developed and developing nations.

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