



# CFA Institute

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CFA Institute Research Challenge  
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## Student Research

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OIL & GAS  
YACIMIENTOS PETROLIFEROS  
FISCALES S.A

### MAJOR INTEGRATED OIL & GAS

Date: November 1, 2016

Recommendation: BUY (43% Total Return)

Ticker: YPF

Closing Price: USD 17.38

Target Price: USD 25.52

*“Value creation: Wake up early, work hard, find oil at Vaca Muerta”*

Figure 1:  
Market Profile and Forecasted Ratios

Market Profile	
Closing Price	USD17.38
Avg Vol (3m)	833,079
Shares outstanding (mm)	393
Market Cap (USD mm)	7,469
Beta	2.28
P/E	12.94
EPS	1.21
EV/EBITDA	2.78

Forecasted Ratios	
EPS	1.77
EV / EBITDA	3.65
EV / Revenues	1.02

Figure 2: T

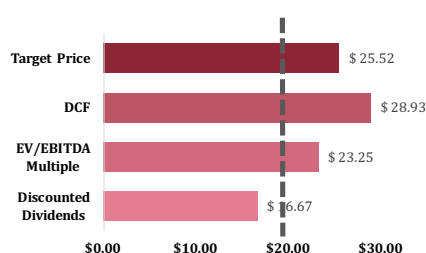


Figure 3: Key Metrics

	Key Metrics					
	2015	2016	2017F	2018F	2019F	2020F
Net Revenues (USD m)	16,856	17,855	19,459	20,702	21,920	22,695
EBITDA Margin	27.9%	28.9%	27.9%	27.3%	26.7%	26.4%
EBITDA (USD m)	4,706	5,155	5,428	5,645	5,849	5,997
Net Income (USD m)	478	654	695	727	783	831
EV/EBITDAX	2.65	3.74	3.52	3.83	4.18	4.61
Free Cash Flow (USD m)	-432	866	1,589	1,866	1,926	2,057
FX (EOP)	12.94	16.20	19.50	22.82	26.24	29.13

## EXECUTIVE SUMMARY

We issue a BUY recommendation on YPF with a target price of USD 26.68 representing a 50% increase in value on the current closing price of USD 17.76.

We based our recommendation on the following:

**YPF's Competitive Positioning and Agreements.** YPF is the leader company in the Argentinean oil and gas sector, holding a significant market power both in the upstream and downstream business segments, and with strategical agreements for investments in non-conventional sources and important concessions for exploration and exploitation in the country.

**Price Convergence.** Current international oil and gas prices are not sustainable in the long run. We expect an increase in the international price reaching USD70 in 2020 and a convergence of the domestic price to that level. This will lead an increase in tight gas and shale oil production because it will become profitable to invest in the non-conventional deposit Vaca Muerta, taking advantage of the agreements that YPF has with both local and international investors to exploit it.

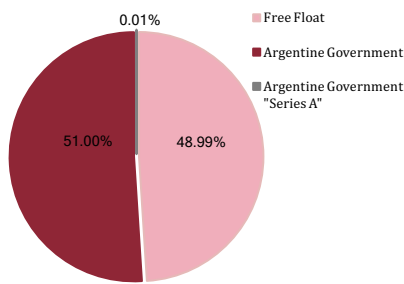
**Subsidies.** The increase in YPF's forecasted EBITDA is supported mostly by the fact that we assume the government will continue to subsidize oil and gas prices at import parity until 2020. The government is generating a completely new macroeconomic environment to attract potential investors, in order to reactivate the economy and create a growing path which will lead an increase in oil, gas and derivatives consumption mostly by production industries.

**Short term domestic financial context:** on the one hand institutional investors like Anses may attempt to increase its exposure to the stock given that they might be underinvested to it; on the other hand flows of dollars coming from the "Blanqueo de Capitales" (Money laundering Law) and the likely improvement in the sovereign rating shall increase the attractiveness of assets denominated in pesos.

**Vaca Muerta.** The crown's jewel. The field represents an important business opportunity for YPF to increase their oil and gas reserves as it is the largest shale formation in Argentina. From an investment point of view, it's a 35-years call option which adds USD 3.51 per share to the YPF's stocks prices which comes for free in our analysis.

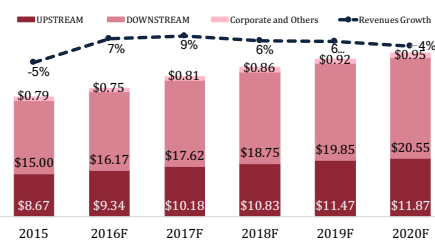
**Capex Convergence.** YPF shall become more cost efficient because it is switching to the use of advanced methods of exploring and drilling oil and gas.

Figure 4:  
Shareholder's Structure



\*Source: Company's 20F

Figure 5:  
Revenues per Segment



\*Source: Company 20F

Figure 6:  
Operating Margins

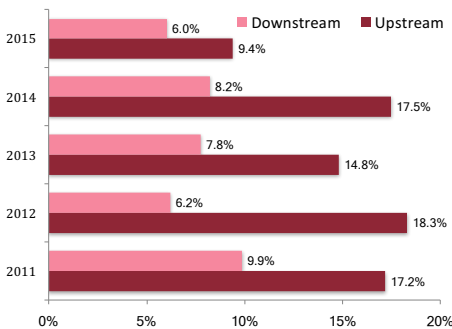
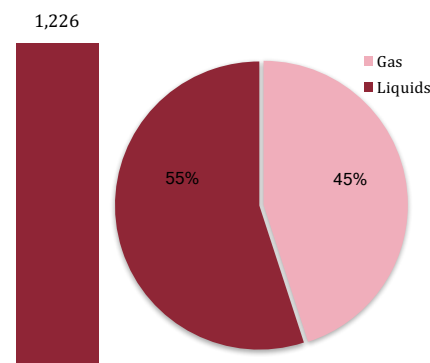


Figure 7:  
Oil and Gas Participation on  
YPF's Proved Reserves



\*Source: Company 20F

## BUSINESS DESCRIPTION

YPF S.A. is the largest energy company that operates in the Argentinean oil and gas industry. Its main businesses are upstream and downstream where they operate with integrated chains. Approximately 65% of YPF's revenues come from downstream and 35% from upstream (Figure 5). Upstream operations imply the exploration, development and production of crude oil, natural gas and liquefied petroleum gas (LPG). Downstream operations consist in refining, purifying, distributing and selling petroleum products, derivatives, petrochemicals, LPG, bio-fuels and natural gas.

Also, the firm is involved in producing, industrializing, processing, transporting and storing grains. Moreover, it sells a complete variety of petroleum and gas derivatives. And also has a small participation in three power generation plants. Additionally, YPF is really new in the renewable resources business including Y-TEC, a technology enterprise created in 2012 together with Conicent whose main objective is to boost the national hydrocarbons industry and promote new energies. And a new project for October 2017 to build a wind farm in Chubut that requires investments for USD 120 millions. YPF must take into account the Decree 531/2016 where the Ministry of Energy and Mining published the regulations of the new law of clean energy 27.191 that encourages the use of renewable energy sources for the production of Electric Power.

YPF is the market leader in its industry with approximately 45% of oil and gas production, and 55% of gasoline and diesel markets.

YPF's revenues come mostly from downstream business than from upstream. The proportions are approximately 65% and 35%. Furthermore, as we see in figure 6, upstream margins are higher than the downstream ones.

### YPF main businesses

#### Upstream

YPF explores, mines and produces conventional and unconventional hydrocarbons. It has 108 concessions in the most productive Argentine basins (total proved reserves are 1.226 mboe) and 38 exploration blocks in the country. (Figure 7 and 8)

*Upstream Markets:* 94% of total oil production stays in the country and the remaining 6% is exported while the total Natural Gas production is destined to internal consumption.

#### Downstream

YPF refines crude oil, process and purifies natural gas, market and distribute products that come from crude oil and natural gas.

*YPF's logistics network* is own developed through different logistics channels.

*YPF's refinery business.* They own three industrial refineries which are strategically located and integrated by an efficient logistics network, representing 50% of the country refinements. Also they own 1.538 services stations which represents 35% of the complete market.

#### Vaca Muerta

Deposit Vaca Muerta is seen as a strategic business opportunity for the company to increase its oil and gas reserves, due to the fact that the field is the largest shale formation in Argentina and one of the largest worldwide.

Figure 8:  
YPF's proved reserves represent  
27% of the Argentine total

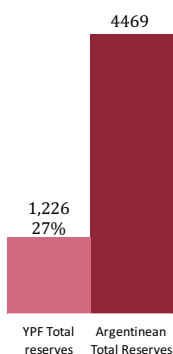
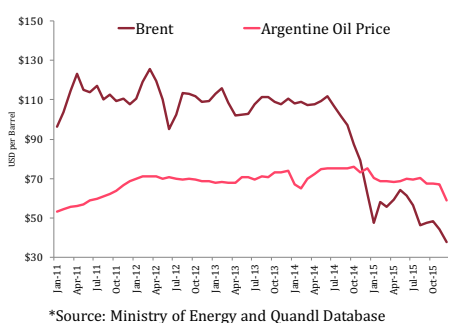
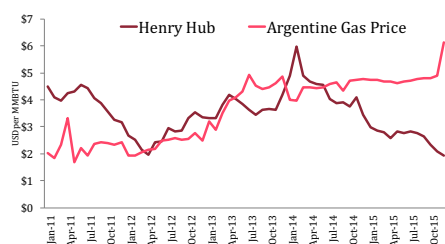


Figure 9:  
International and Domestic  
Oil and Gas Prices



\*Source: Ministry of Energy and Quandl Database



\*Source: Ministry of Energy and Quandl Database

Figure 10:  
Net exports of oil compared to domestic  
production and consumption

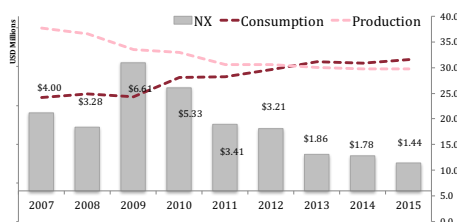
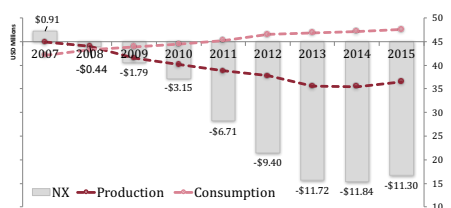


Figure 11:  
Net exports of gas compared to  
domestic production and consumption



\*Source: Quandl Database

## INDUSTRY OVERVIEW AND COMPETITIVE POSITIONING

### International Context

International oil and gas prices are under pressure and oil companies around the world are striving to reduce production costs and improve efficiency to keep up profit margins. The down trend in oil and gas prices is led by the global surplus which is mainly driven by the increase in Iran's production, the decrease in China's demand and the discovery of new shale oil resources.

Oil and gas producers are cutting capital expenditures by 30 percent in 2016. Already, some \$200 billion worth of projects have been canceled or postponed. Massive cost cutting may offer some short-term breathing room for a realignment of the oil price to the long term level (estimated around in USD 70 per barrel).

In the global forecast of energy supply, fossil fuels shall remain as the main source of energy for global activity. It is estimated that these will supply about 60% of the increase in energy and represent almost 80% of total energy supply for the coming years. Between 2015 and 2035, gas will have the fastest annual growth of 1.8%, leading to an increase in its participation the generation of primary energy. On the other hand, oil will steadily grow at 0.9% annually, although the downward trend in its share continues as observed in the years until 2015. In this regard, the combined increase of oil and gas on total primary energy shall remain similar to the past 20 years. Furthermore, as United States reduces its production level, it is commonly believed that the other major players in the oil industry will follow it. "...total US production finally started to decline and that trend is expected to continue in 2016. -...billions of dollars of investments have been deferred due to the low price environment, which translates to millions of barrels that will not be produced in the years to come. This sets the stage for a price rally." John England, US Oil & Gas leader, Deloitte LLP said.

On top of that, current international oil prices are not sustainable in the long term, as it is uneconomical for the oil firms to increase exploration and production with these price levels.

### Domestic Context

In response to the economic crisis of 2001 and 2002, Argentina's government declared the "Public Emergency Law" which established export taxes on some hydrocarbon products. The goal was to satisfy a growing domestic demand and at the same time to establish price controls in the midst of an inflationary process (Figure 9). Even though in the short term achieved those goals, it implied a reduction in the incentives to increase exploration and production. As a consequence of the imposed regulations, production decreased and Argentina became a net energy importer. (Figure 10 and 11). The scheme implied constraints on domestic prices, temporary export restrictions and subsidies on imports of natural gas and diesel, which made domestic oil and natural gas prices differed from international.

By resolution No. 06/2016, the government's Ministry of Energy established new seasonal reference prices for power and energy in the Wholesale Electricity Market, which prevailed until April 30, 2016. Recently it was announced a maximum increase of 400% and 500% for gas invoice.

Additionally, it was declared a National Electric System Emergency which will last until December 31, 2017. The Ministry of Energy developed and proposed measures to ensure adequate power supply. The reason behind this is that the demand overcomes the energy supply due to low prices and low incentives to invest.

The Argentinian oil and gas price is expected to continue receiving subsidies from the government because of social and politic interests, even though they are working to converge to international oil prices.

In order to expand both production and reserves in local levels it would be necessary to reach to a national agreement on tariffs. The national government

is working to achieve an energy consensus between the congress, unions, and oil and gas companies to solve this problem, they already agreed with producers to cut down crude oil prices.

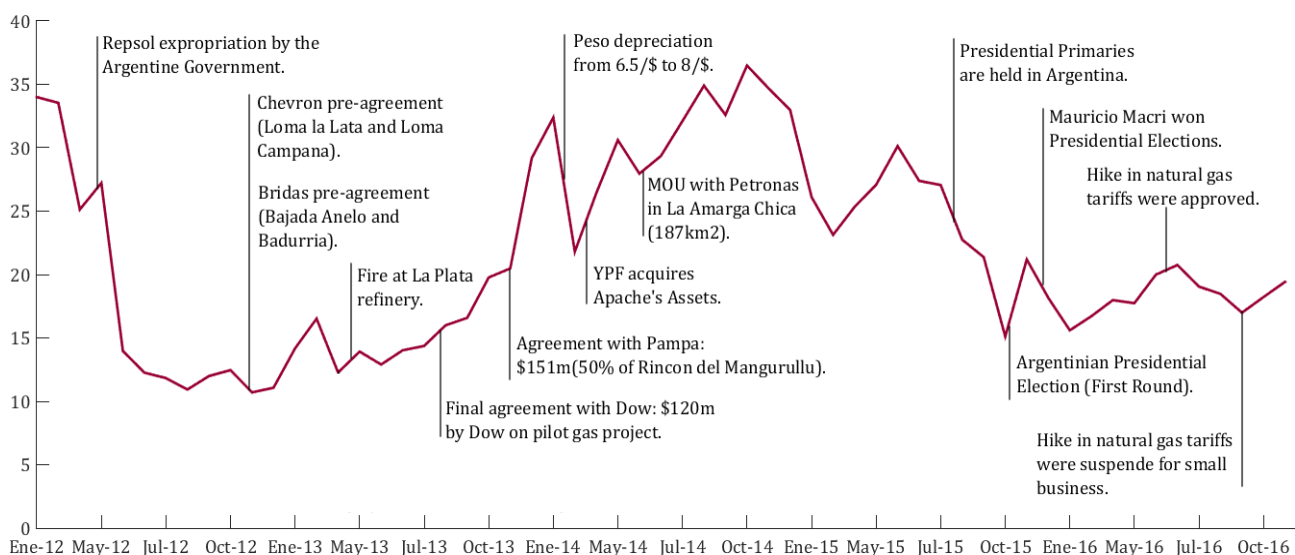
**Export markets**

From January 1 to December 31, 2015 the government established the “Oil Production Stimulus Program” (Resolution 14/2015), through which the Argentine Federal Government, subject to certain requirements, paid an export or a production stimulus for companies registered under that program. The purpose was to offset the reduction in international crude oil prices and benefit local oil companies.

Nowadays producers and refiners are working closely in order to reduce costs and increase productivity. They need to encourage contractors and unions to realize about the important changes that global industry is experiencing. Given the global context this is the only way to achieve a profitable business.

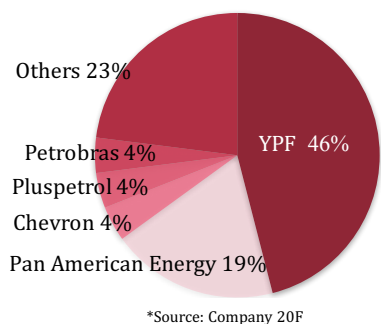
We must consider that, between 2010 and 2015 due to the distortion in relative prices, exploration remained stable but exploitation showed a slight growth. We saw an important drop in oil and gas production due to a downfall in effective drilling productivity but an important growth in the refinery stage due to the domestic stability on oil price, devaluation of our currency and the increase of domestic oil derivate products all of them improved its profitability.

Figure 12:  
YPF's stock price events



**Competitive Positioning**

Figure 13:  
YPF's Upstream Participation in Argentinean oil production



YPF is a company with a long history in the country to the point of becoming an Argentinean symbol of sovereignty. It is the market leader both in the upstream and the downstream (it's in the top quarter of the consumers' minds). It also has a large network of both distribution and sales. (Figure 13, 14 and 15)

Refining business is slow and stable. The companies need large amounts of capital investments to enter in this business, which makes it difficult for the average company. It has barriers that only the most serious companies can afford.

Despite the Expropriation Law (May 3, 2012) and all its overarching objectives, YPF has been kept as a commercial corporation with focus on competitiveness in the market.

The firm is working out different agreements to strategically improve its production capacity and productivity. Most of them are focused in the exploitation of strategic areas, in order to obtain more oil and gas. The following are only some of them. To explore new areas, YPF set up agreements with YPFB (Yacimientos Petroliferos Fiscales Bolivianos) to exploit Charagua, and with YSUR ENERGIA ARGENTINA to exploit many important areas. Additionally, they made three main agreements with General Electric Power to build thermoelectrical plants, in order to produce more energy. Furthermore,

Figure 14:  
YPF's Upstream Participation in Argentinean gas production

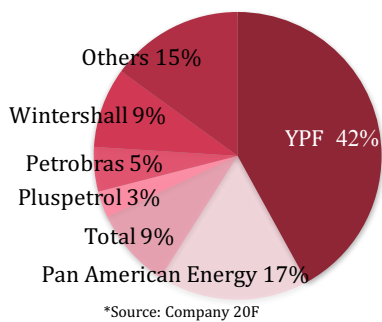


Figure 15:  
YPF's Downstream Participation in Argentinean oil production

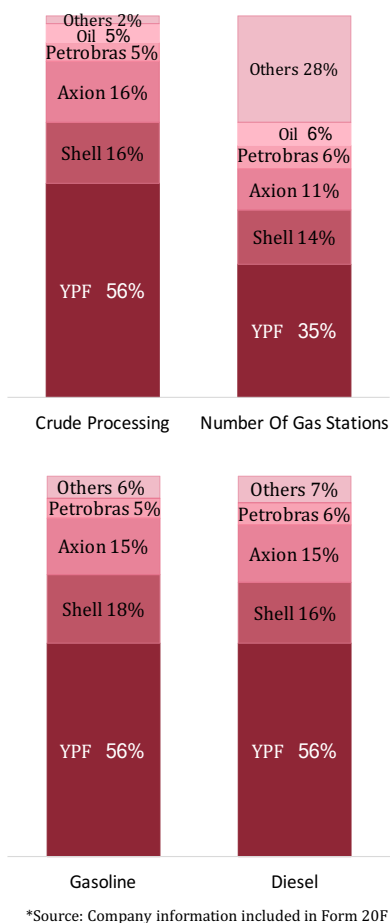
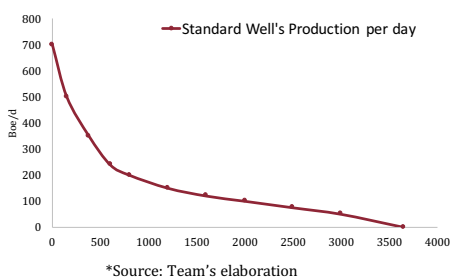


Figure 16:  
Daily standard wells production



Incremental Area Magallanes) project to increase the production of natural gas and crude oil. Other agreement that is important, is the one signed with American Energy Partners to exploit Vaca Muerta, and produce more shale.

### Exploration and Production businesses

YPF faces competition in acquiring exploration permits and production concessions from international and domestic oil companies. It also faces competition from oil and gas companies owned by some Argentinean provinces for example La Pampa, Neuquén, Santa Cruz and Chubut.

The Hydrocarbons Law dictated in October 2014, No. 27,007 limits the ability of provincial companies to possess future exclusive rights over permits and concessions. It has some special considerations for new petroleum companies, focusing in those which work with unconventional resources. In order to promote the development and the competitiveness of gas and oil industry, there were taken two important measures. They involved:

- ✓ The gas-pricing scheme, in order to encourage additional production of natural gas, Argentine government established a program where all participating companies receive a natural gas price of USD 7.50/mmBtu for such additional production. At this moment, more than 90% of natural gas production in Argentina is included into this program.

- ✓ The promotional regime for investments, we have the creation of the "Investment Promotion Scheme for the Exploitation of Hydrocarbons" (Decree 929/13). The decree creates an allowance to export, free of export taxes, up to 20% of hydrocarbons produced from projects requiring an investment in excess of USD 1 billion.

YPF believes that this law will help to attract strategic partners for the development of unconventional resource base and to increase the number of participants in the market. In the long run, the industry will become more dynamic and efficient due to an increase in competition.

YPF is working in the following projects with other companies to explore and mine unconventional hydrocarbon:

- ✓ La Amarga Chica, to mine Vaca Muerta shale oil with Petronas,
- ✓ El Orejano, to mine Vaca Muerta shale oil with Dow,
- ✓ Rincon Del Mangrullo, to mine mulichinco tight gas with Petrolera Pampa.

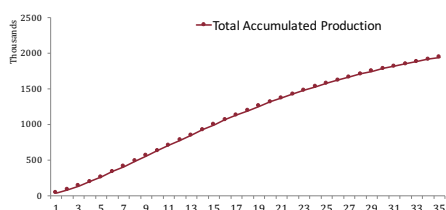
### Vaca Muerta

Vaca Muerta represents a significant business opportunity for YPF to increase its oil and gas reserves, as it is the largest shale formation in Argentina and possesses particular geological characteristics which makes it unique in the world. The main characteristics are a significant amount of total organic carbon, high pressure, good permeability and its great thickness which makes easier to extract it and with less environmental contamination. YPF has approximately 45% of Vaca Muerta's concessions. (Figure 18)

YPF and Chevron agreed to exploit Vaca Muerta in 2013 but they faced a major problem with the current oil price trend. They had made all the projections and committed of around USD 15.000 million for the production of shale oil, under the assumption that the price per oil barrel would be around USD80 to USD 100 bbl. However the average price dropped from USD 96 to less than USD 40 per barrel since mid 2013. The drop in prices led to many projects to be delayed but not cancelled until an expected recovery in the international price.

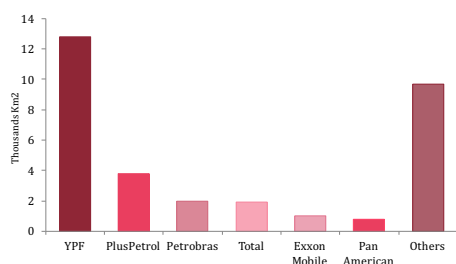
The chance of taking advantage of Vaca Muerta depends on YPF's investing decisions and their efficiency. The company began researching in 2011, and just recently started moving over their learning curve. It is agreed that it takes on average approximately 3 years to find better techniques for optimally exploiting unconventional deposits, so after almost 300 wells already drilled, throughout 2011 and 2016 YPF has been changing their exploitation

Figure 17:  
Total accumulated production during YPF's concession



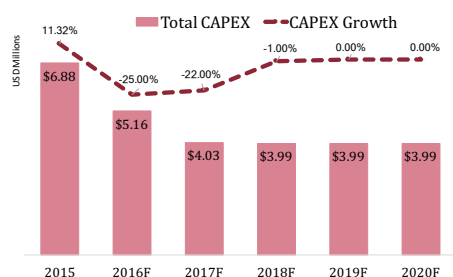
\*Source: Team's elaboration

Figure 18:  
YPF's Participation on Vaca Muerta per Km2



\*Source: Ryder Scott

Figure 19:  
CAPEX Evolution



\*Source: Team's elaboration

technology, moving from vertical to horizontal wells that, despite being more expensive, are highly productive.

A vertical well costs approximately USD 7.6 million to YPF, while a horizontal well costs more than USD 11 million. Those prices are higher when comparing with US wells, where the average cost is USD5 million. The challenge of increasing efficiency becomes a priority to be much more competitive.

In order to achieve Vaca Muerta price per share, we run a Monte Carlo simulation over an estimated DCF on Vaca Muerta exploitation, using as inputs oil and gas prices, wacc, capex and opex variations.

In particular, for oil prices we simulated a mean reversion process while for gas prices we assume a triangular distribution, taking into account the government's subsidies policy.

We achieved a target price per share of USD 3.51 additionally to the YPF's stock price. If we look two scenarios for prices we see a lower price of USD 3.11 and an upper price of USD 3.87 (Representing the 25th and 75th percentile of our distribution, respectively). For more details see See Appendix Vaca Muerta.

## INVESTMENT SUMMARY

We issue a BUY recommendation on YPF with a target price of USD28.93. In order to sustain the investment recommendation we have used both a Firm DCF method and EV/EBITDA multiples method, and validated it by means of a Dividend Discount Model.

This recommendation supports an upside return of approximately 43% from its closing price of USD 17.38 on November 1, 2016 and it is based in the following leading factors:

**YPF's Competitive Positioning and Agreements:** YPF is a leader company in the Argentinean oil and gas sector, they have strategical agreements for investments in non-conventional sources and important concessions for exploration and exploitation in the country. YPF's operating margins have been better than the industry average over time, reflecting not only efficiency and profitability but also how well they are able to satisfy creditors and create value for shareholders generating operating cash flow.

**Price Convergence:** the current international oil and gas prices are not sustainable in the long run. We expect an increase in the prices, in a mean reverting process to the average cost, achieving USD 70 for 2020. This shall lead an increase in tight gas and shale oil production, because it shall become profitable to exploit non-conventional deposit and hence exercising the real call option. We expect an increase in revenues around 6% annually mostly explained by the increase in production.

**Subsidies:** the increasing EBITDA is supported by the fact that the government will continue to subsidize oil and gas prices in the medium term. The government is generating a completely new macroeconomic framework to attract potential investors, in order to reactivate the economy and create a growing path which will lead an increase in oil, gas and derivatives consumption mostly by the industrial sector.

**Capex policy:** YPF's investment policy is changing. It is reducing the CAPEX, mostly the one related to Vaca Muerta wells in order to wait for an improvement in market oil and gas conditions which will make the exploitation profitable. The reduction modelated is 25% for 2016, 22% in 2017 and it will remain almost constant to 2020 (Figure 19).

**Indebtness policy:** YPF's debt/EBITDA ratio is currently 2.46x but YPF sets the target ratio at 1.5x, which will be easily achieve due to the increase expected in EBITDA.

**Vaca Muerta:** the exploitation of Vaca Muerta deposit appears as a real option opportunity due to the expected changes in the market conditions, increase sin international prices and the possibility of decreasing costs improving efficiency primary as a consequence of the herein mentioned agreements. The simulated scenario of the increase in profitability of VacaMuerta gives an added value of

USD 3.51 per share to the YPF's Stocks prices not included in our target price, so it is extra value coming for free.

Short term domestic financial context: on the one hand institutional investors like Anses may attempt to increase its exposure to the stock given that they might be underinvested to it. It should be taken into account that a main investor (Anses) holds only 0.01% of YPF's stock shares and 9% of its notes. We shall consider the chance that Anses increases its exposure to the YPF stock, which in turn it may benefit the price of it in the short term. Another international institutional investor as Fidelity Management & Research, Grupo Financiero Imbursa, Soros Fund Management, for 2014 had YPF stocks on their portfolios. Together they had half of 49% of the free-floating shares. On the other hand flows of dollars coming from the "Blanqueo de Capitales" (Money laundering Law) and the likely improvement in the sovereign rating shall increase the attractiveness of assets denominated in pesos. We also must consider the Money Laundering Law initiated by Mauricio Macri's Government where up to October 26, 2016 it had already entered approximately USD 5.000 millions to the system. Whether or not this to have an impact on the exchange rate and consecutively on YPF will depend heavily on the monetary policy pursued by the monetary authority.

Figure 20:  
Valuation Methodologies

DCF Summary	
Discounted Cash Flows	4.75.
Terminal Value	13.51
Firm Value	18.03
Net Debt	6.92
Equity Value	11.37
Price per Share	\$28.93

Figure 21: Value Multiples

Value Multiples	
EV using Multiples	19.69
Equity Value (bs)	9.14
EV/EBITDA Projected	3.65
Price per Share	\$23.25

Figure 22: Dividend Discount Models

Discounted Dividend Model	
Dividends Net Present Value	6554.64
Price per Share	\$16.67

## VALUATION

We perform three different valuation methodologies in order to get an accurate YPF's stock price. The methodologies used were Firm Discounted Free Cash Flow Model (given that the company changes the financial leverage) and, EV/EBITDA Multiples; we after validate the values by means of the use of the Dividend Discount Model.

✓ DCF Model: a discounted cash flow analysis was used to estimate the intrinsic value of YPF's share price due to the predictability of cash flows in relation to growth and profitability. We forecast the Upstream revenues using the production/reserves ratio and the Downstream revenues as a constant portion of Upstream revenues. The target price per share achieved by this method is USD28,93 (Figure20).

✓ EV/EBITDA Multiples for the year 2017. The target price using this methodology is USD23.5. (Figure 21)

✓ Discounted Dividend Model: using this approach we estimated a lower bound price for the stock at USD16.67. We believe that this is a floor price because it is the most conservative valuation methodology. (Figure 22)

### DCF assumptions

In terms of international oil prices and considering the world context, we expect the oil price will continue a similar path with no significant changes. At the same time, the domestic oil price is expected to continue receiving subsidies from the government. Domestic oil prices will converge to international prices plus import costs (import parity) as soon as possible but considering social and politic interests this represents a huge cost, so the convergence will be gradual from 2017 onwards until 2020. Given this situation we are going to assume that in 2016 local oil prices are going to stay around USD65 per barrel, coming from the simple average of USD67.5 (first part of 2016) and USD63 (second part of 2016), and for 2017 a price of USD63. From 2017 forward the main objective will be converge to the price of Brent oil.

As for gas prices, it is a little harder to understand their movements as government imposes differential rates according to source gas extraction. For example, new wells have different tariffs from old ones, tight and shale gas has different ones than those previously mentioned. So we assumed that gas prices for 2016 would be those ones that YPF announced of USD5.80 per MmBtu (an average of all wells) and of USD6.8 from 2016 forward, being this the price required by YPF in order to continue investing.

As for the opex, we assume that YPF shall stick to the current level of efficiency with no major changes.

Capex amount is reduced over time due to low external prices for oil. The forecast for 2016 is 25% less than 2015, for 2017 is 22% less than 2016, and



Figure 23: EV/EBITDA

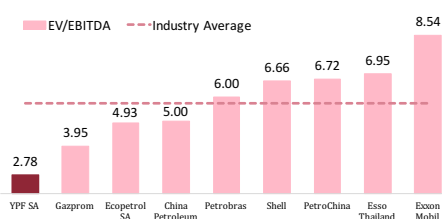


Figure 24: EV/Revenues

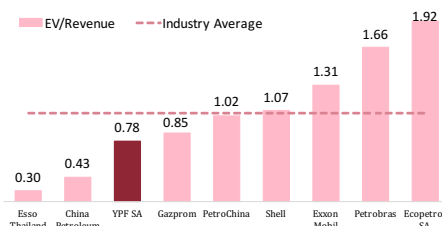


Figure 25: Price/EPS

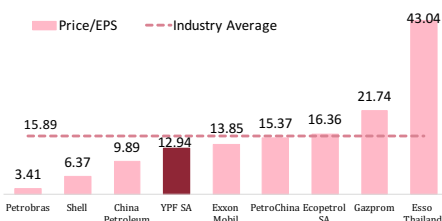


Figure 26: Key Ratios and Forecast

	Key Ratios									
	2011	2012	2013	2014	2015	2016	2017F	2018F	2019F	2020F
Reserves life	5.94	5.97	6.45	6.34	6.45	6.75	6.75	6.75	6.75	6.75
Revenues/Capex	4.55	4.03	3.22	2.80	2.42	3.46	4.83	5.19	5.50	5.69
EV/EBITDA	4.89	2.31	3.93	3.04	2.78	3.87	3.65	3.97	4.34	4.79
EV/EBITDAX	4.69	2.24	3.82	2.93	2.65	3.74	3.52	3.83	4.18	4.61
EV/Proved Reserves(x1000)	16.02	8.36	14.96	12.42	10.69	14.66	13.79	14.84	16.05	17.75

(USD mm)	Forecast				
	2016	2017F	2018F	2019F	2020F
<b>EBIT</b>	<b>1,943</b>	<b>2,118</b>	<b>2,253</b>	<b>2,385</b>	<b>2,470</b>
NOPAT	757	825	878	930	963
D&A	3,212	3,311	3,392	3,464	3,527
Net Non-Cash Items	1,383	1,383	1,383	1,383	1,383
Capex	(5,164)	(4,028)	(3,987)	(3,987)	(3,987)
Changes in non cash NWC	677	98	200	137	172
<b>Free-cash-flow to the firm (FCFF)</b>	<b>866</b>	<b>1,589</b>	<b>1,866</b>	<b>1,926</b>	<b>2,057</b>

the rest of the periods it will remained constant. As for the costs of exploration and production of new wells YPF shall become more cost efficient because it is switching to the use of advanced methods of exploring and drilling oil and gas.

Considering the estimations that GDP will have a significant recovery of around 2.2%, led mainly by investment due to the economic and politic measures taken by Macri's government. We assume a growth rate similar to GDP trend 3%.

For calculating the WACC we estimate the cost of equity using a risk free rate of 1.7% corresponding to the 10Y USA T-Bond, a market risk premium of 6.2% , a beta of 2.28, and a cost of debt of 12.9%. For Terminal WACC we changed the risk free rate to 3% and beta to 2.24 taking into account the capital structure of the firm. We don't use additional risk country premium because it is assumed luded in the market beta.

## FINANCIAL ANALYSIS

**EV/EBITDA.** YPF's enterprise value to EBITDA is under the industry median located in the lower percentile (Figure 23). This means that YPF has a great growth potential. We believe that Argentina will be soon restored to emerging market status impacting positively on YPF's stock.

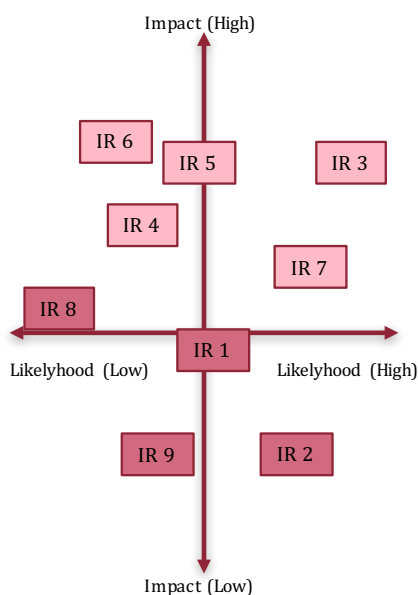
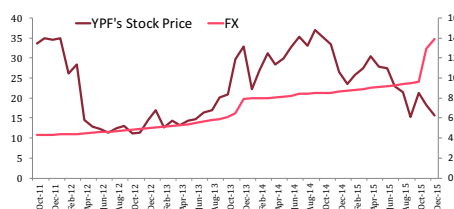
**Cash Flows.** We expect an increase in Free Cash Flow to the Firm due to a strategically capex allocation. In the last years, company's business plan was set for oil prices at a level of USD 100, however as a consequence of the drop in international oil prices its led to negative Cash Flows. Now we expect a reverse in this fact.

**Debt.** Together with a better investments plan, the company set their debt level at 1.5x Debt/EBITDA.

## Investment Risks

YPF is tied to many competitive factors that depend on international and domestic variables, for instance international and local crude oil and refining products prices, inflation, foreign exchange rates and employment rates. All changes in these factors have direct effects on YPF, that is why they continually adjust its product offerings and the costs of its operations in order to adapt to these variables.

Figure 27: Risk Matrix

Figure 28:  
YPF's Stock Price vs.  
Foreign Exchange Rate

## Risk related to the world or other markets

**(IR 1) Economic and Market Conditions Worldwide:** Argentina and emerging countries, in general are influenced by economic and market conditions in other markets worldwide. For example, changes in oil and gas prices affect YPF business as YPF budget their capital expenditures associated to exploration, development, refining and distribution activities considering, among others, local and international oil and gas prices. The likelihood of a rise in the US rate of interest might affect the company because of its level of indebtedness; however this risk is mitigated by the fact that the company targets to lower its financial leverage in the future.

**(IR 2) Argentineans Principal Trading Partners:** Argentina's economy, financial and securities markets are sensitive to its principal trading partners (Brazil, China, United States, among others) economic situation, impacting on YPF financial conditions and operations results.

## Risks related to Argentina

YPF is exposed to the Argentinean economic, political and regulatory conditions that might adversely affect operations of hydrocarbon industry. Investing in emerging markets carries risks such as economic and political instability, changes in currency, exchange controls, regulations that affect important equipment for operations, high levels of inflation, price control, political and social tensions, among others.

**(IR 3) Political conditions:** Mauricio Macri assumed as president in December 2015 and he carried on some economic and political measures that could have an important impact on the energy sector. Between them we can include the removal of exchange controls, a steady reduction of the fiscal deficit by increasing energy and transport charges and carried on with the negotiations with the holdouts from the 2005 and 2010 debt swaps in order to return to international trading and financial relations. The steps followed by the government can make Argentina's exports more competitive. Also, the devaluation, the diminished risk premium, the change in restrictions on dividend payment and the successful negotiation with the holdouts, are signs that the ratio between investment and GDP will continue to grow.

**(IR 4) Economic conditions:** YPF's operational results are highly dependent on Argentinean macroeconomic variables. Factors as foreign prices, consumption levels, investment, interest rate and inflation can strongly affect them. Furthermore, a large part of YPF's total debt is borrowed from funds to support capital expenditures; this is why variations in interest rates and exchange rates result in higher borrowing costs.

Some risks are too ambitious for YPF's control. The oil and gas exploration and production are outdoor activities that are subject to specific economical, industrial and natural conditions. Substantial operational losses are likely to happen if these risks take place.

YPF's business might be harmfully affected if its plans for drilling activities for unconventional oil and gas reserves do not result as they were expected.

**(IR 5) Regulatory conditions:** YPF's results might be negatively affected by new export taxes or other import regulations. If exchange and capital controls were modified, YPF would have to afford a harmful economic condition. It may not be able to meet their operational or financial plan. Indirect and direct export restrictions influence YPF's results.

In Argentina there is a significant government intervention that doesn't allow firms to increase product prices. YPF is affected by this policy and does not have freedom to change prices in order to reflect higher taxes, cost and domestic prices.

Into this category of we also find the union's risk, where unionized workers may create some sort of problems in the event of attempting a higher level of efficiency in operations and exploration.

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**Risks associated with the Company and its activity**

**(IR 6)** YPF's Existing Oil and Gas Producing Field: YPF reserves and production may decline, as the vast majority of YPF's existing oil and gas producing fields are mature so their reserves are depleted.

Oil and gas production concessions and exploration permits may be cancelled or not renewed as these are subject to special conditions. YPF's opportunities to access new exploratory or productive areas may be strongly affected by the intense competition they face in bidding for crude oil and natural gas production areas.

**(IR 7)** Shareholder's Risks: Net income, anticipated levels of capital expenditures, expected levels of growth of YPF are some factors which changes may affect YPF's ability to pay, maintain or increase dividends. Capital restrictions, actual or anticipated sales, currency exchange rate fluctuations and additional investment risks may impact negatively on Class D and ADSs shareholders.

A significant percentage of YPF cash flow operations are derived from counterparties that are governmental entities and private sector. If certain government counterparties were not able to pay YPF financial condition and results of operations would be negatively affected.

**(IR 8)** Competition Risks: YPF and the hydrocarbon industry in general may be adversely affected by other sources of energy like coal, gas hydroelectricity, nuclear, solar or wind power. Consider that recently China allowed to invest a huge amount of money in the two last aforementioned. Substitutes for the oil industry in general include alternative fuels such as coal, gas, solar power, wind power, hydroelectricity and even nuclear energy.

**(IR 9)** Other Risks: YPF is subject to certain legal proceedings related to labor, commercial, civil, tax, environmental, health, safety and administrative matters that may result in significant material costs and liabilities. YPF could be subject to organized labor action.

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## APPENDICES

### Appendix 1: Glossary

ADRs: American Depositary Share

Bbl: Barrel of Oil

BPS: Basis Point

Brent Oil: Kind of petroleum extracted in the north sea

CAPEX: Capital Expenditures

Class D: one of the four classes of YPF shares

CNG: Compressed Natural Gas

COGS: Cost of Goods Sold

EBIT: Earnings Before Interest and Tax

EBITDA: Earnings Before Interest, Tax, Depreciation and Amortization

EMBI: Emerging Markets Bond index, main indicator of country risk

Esso: Estándar Oil, North American oil and gas company

GDP: Gross Domestic Product

LPG: Liquefied Petroleum Gas

Mmboe: Millions Barrels of Oil Equivalent, unit of energy

MmBtu: Million British thermal unit, heat measure unit

Mm3: Cubic millimeter, unit of volume

NGL: Natural Gas Liquid

OPEC: Organization of the Petroleum Exporting Countries

Petrobras: Petroleo Brasileiro S.A, Brazilian oil and gas company

SG&A: Selling, General and Administrative expense

USD: United States Dollar

WACC: Weighted Average Cost of Capital

WTI Oil: West Texas Intermediate, another kind of petroleum extracted in Texas and south Oklahoma, US

YPF: Yacimientos Petroliferos Fiscales, Argentinian oil and gas company

## Appendix 2: Balance Sheet

Balance Sheet										
(USD Mm)	2011	2012	2013	2014	2015	2016	2017E	2018E	2019E	2020E
<b>Assets</b>										
Cash and Short Term Investments	258	966	1,644	1,143	1,252	837	1,503	2,207	2,142	2,685
Total Receivables, Net	1,419	1,359	2,022	1,866	3,088	3,250	3,516	3,712	3,899	4,003
Total Inventory	1,396	1,408	1,516	1,522	1,489	1,567	1,695	1,790	1,880	1,930
Other Current Assets	0	0	114	399	122	125	129	133	136	138
<b>Total Current Assets</b>	<b>3,073</b>	<b>3,733</b>	<b>5,296</b>	<b>4,930</b>	<b>5,950</b>	<b>6,363</b>	<b>7,577</b>	<b>8,802</b>	<b>9,272</b>	<b>10,204</b>
Fixed Assets Net	10,419	11,836	14,770	18,662	21,501	23,453	24,170	24,765	25,288	25,749
Fixed Assets Gross	31,798	35,036	40,057	46,462	52,217	57,381	61,408	65,396	69,383	73,370
Amortization and Depreciation	21,379	23,200	25,287	27,800	30,716	33,928	37,239	40,631	44,095	47,622
Long Term Investments	468	389	326	372	338	393	393	393	393	393
<b>Total Assets</b>	<b>14,177</b>	<b>16,266</b>	<b>20,806</b>	<b>24,420</b>	<b>28,096</b>	<b>30,209</b>	<b>32,139</b>	<b>33,960</b>	<b>34,953</b>	<b>36,346</b>
<b>Liabilities</b>										
Total Payables	2,846	2,963	3,449	3,880	3,655	3,847	4,161	4,394	4,615	4,738
Other Current liabilities, Total	224	277	233	814	363	382	413	436	458	470
<b>Total Current Liabilities</b>	<b>3,070</b>	<b>3,240</b>	<b>3,682</b>	<b>4,694</b>	<b>4,018</b>	<b>4,229</b>	<b>4,574</b>	<b>4,830</b>	<b>5,073</b>	<b>5,208</b>
Total Debt	2,835	3,480	4,893	5,773	8,175	9,138	9,819	10,415	10,110	10,257
Deferred Income Tax	633	953	1,758	2,219	3,464	3,464	3,464	3,464	3,464	3,464
Other Liabilities, Total	2,194	2,233	3,105	3,229	3,131	3,131	3,131	3,131	3,131	3,131
Total Liabilities	8,733	9,906	13,439	15,916	18,788	19,962	20,989	21,840	21,779	22,060
<b>Shareholders Equity</b>										
Common Stock, Total	2,332	2,042	1,519	1,172	773	773	773	773	773	773
Retained Earnings (Accumulated Deficit)	2,530	1,780	1,096	1,758	826	1,415	2,040	2,695	3,400	4,148
Other Equity, Total	582	2,539	4,753	5,575	7,709	7,709	7,709	7,709	7,709	7,709
Total Equity	5,444	6,360	7,368	8,504	9,308	9,897	10,523	11,177	11,882	12,630
<b>Total Liabilities &amp; Shareholders' Equity</b>	<b>14,177</b>	<b>16,266</b>	<b>20,806</b>	<b>24,420</b>	<b>28,096</b>	<b>29,859</b>	<b>31,511</b>	<b>33,018</b>	<b>33,661</b>	<b>34,690</b>

## Appendix 2: Income Statement and Cash Flow Statement

Income Statement										
(USD M)	2011	2012	2013	2014	2015	2016	2017E	2018E	2019E	2020E
<b>Revenues</b>	<b>13,623</b>	<b>14,769</b>	<b>16,448</b>	<b>17,483</b>	<b>16,856</b>	<b>17,855</b>	<b>19,459</b>	<b>20,702</b>	<b>21,920</b>	<b>22,695</b>
COGS	8,396	9,231	10,429	10,357	9,989	10,457	11,587	12,457	13,318	13,848
Depreciations and Amortizations	1,575	1,821	2,087	2,513	2,916	3,212	3,311	3,392	3,464	3,527
<b>Gross Profit</b>	<b>3,652</b>	<b>3,717</b>	<b>3,932</b>	<b>4,613</b>	<b>3,951</b>	<b>4,185</b>	<b>4,561</b>	<b>4,853</b>	<b>5,138</b>	<b>5,320</b>
SG&A	1,760	1,738	1,898	1,852	1,831	2,060	2,245	2,388	2,529	2,618
Exploration expenses	139	126	120	197	232	183	199	212	224	232
Unusual Expense (Income)	11	116	-124	132	97	0	0	0	0	0
Operating Profit	1,742	1,738	2,037	2,432	1,791	1,943	2,118	2,253	2,385	2,470
<b>EBITDA</b>	<b>3,317</b>	<b>3,558</b>	<b>4,124</b>	<b>4,945</b>	<b>4,706</b>	<b>5,155</b>	<b>5,428</b>	<b>5,645</b>	<b>5,849</b>	<b>5,997</b>
<b>EBIT</b>	<b>1,742</b>	<b>1,738</b>	<b>2,037</b>	<b>2,432</b>	<b>1,791</b>	<b>1,943</b>	<b>2,118</b>	<b>2,253</b>	<b>2,385</b>	<b>2,470</b>
Financial results, net (+)	96	146	582	287	1,347	-265	-333	-387	-376	-338
EBT	1,839	1,883	2,619	2,719	3,138	1,678	1,784	1,866	2,009	2,132
Total tax	761	1,025	1,692	1,629	2,660	1,024	1,089	1,139	1,226	1,301
Net income	1,077	858	927	1,090	478	654	695	727	783	831
Dividends per Share	0.014	0.000	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.00
Common Shares	0	0	393	393	393	393	393	393	393	393
Dividends Paid	-1,349	-67	-60	-57	-54	-65	-70	-73	-78	-83

Cash Flows Statement										
(USD Mm)	2011	2012	2013	2014	2015	2016	2017E	2018E	2019E	2020E
<b>Cash Flow-Operating Activities</b>										
Net Income/Starting Line	1,077	858	927	1,090	478	654	695	727	783	831
Depreciations and Amortizations	1,575	1,821	2,087	2,513	2,916	3,212	3,311	3,392	3,464	3,527
Non-Cash Items, Total	1,357	1,746	2,699	3,433	4,057	1,486	1,513	1,534	1,530	1,514
Charge on income tax	761	1,025	1,692	1,629	2,660	1,024	1,089	1,139	1,226	1,301
Result on investments in companies	140	85	-421	-320	-217	-217	-217	-217	-217	-217
Exchange differences, interest and others	217	-181	-648	-261	-1,152	-704	-743	-771	-863	-953
Other Non-cash items	119	408	1,038	1,193	1,383	1,383	1,383	1,383	1,383	1,383
Consumption of Material and others	87	232	426	498	607	607	607	607	607	607
Net Increase in Provisions	33	176	597	685	762	762	762	762	762	762
Share-based benefit plan	0	0	15	10	13	13	13	13	13	13
Changes in NWC	-816	-212	-848	-159	-998	-36	-59	-43	-41	-23
Accounts Receivable	184	-109	-723	-440	-1,530	-162.08	-265.58	-196.50	-187.03	-103.85
Inventories	-547	-201	-134	-30	11	-78.14	-128.03	-94.73	-90.16	-50.06
Accounts Payable	565	408	592	624	671	191.84	314.34	232.58	221.36	122.91
Accrued Expenses	36	58	46	90	59	-	-	-	-	-
Taxes Payable	-27	82	50	27	491	-	-	-	-	-
Other Liabilities	0	0	-130	-243	-190	19.04	31.20	23.08	21.97	12.20
Other Operating Cash Flow	-1,026	-450	-549	-186	-509	-6.40	-10.48	-7.76	-7.38	-4.10
<b>Cash from Operating Activities</b>	<b>3,314</b>	<b>4,620</b>	<b>5,903</b>	<b>8,070</b>	<b>6,453</b>	<b>5,317</b>	<b>5,460</b>	<b>5,610</b>	<b>5,735</b>	<b>5,849</b>
<b>Cash Flow-Investing Activities</b>										
Capital Expenditures	-2,946	-3,606	-5,045	-6,185	-6,885	-5,164	-4,028	-3,987	-3,987	-3,987
<b>Cash from Investing Activities</b>	<b>-2,946</b>	<b>-3,606</b>	<b>-5,045</b>	<b>-6,185</b>	<b>-6,885</b>	<b>-5,164</b>	<b>-4,028</b>	<b>-3,987</b>	<b>-3,987</b>	<b>-3,987</b>
<b>FREE CASH FLOW</b>	<b>367</b>	<b>1,014</b>	<b>858</b>	<b>1,885</b>	<b>-432</b>	<b>153</b>	<b>1,433</b>	<b>1,622</b>	<b>1,748</b>	<b>1,862</b>
<b>Cash Flow-Financing Activities</b>										
Interest Paid	-111	-202	-492	-623	-732	-1,093	-1,161	-1,214	-1,204	-1,165
Total Cash Dividends Paid	-1,349	-67	-60	-57	-54	-65	-70	-73	-78	-83
Issuance (Retirement) of Stock, Net	0	0	-22	-25	-13	0	0	0	0	0
Issuance (Retirement) of Debt, Net	1,013	852	1,830	1,309	3,354	590	464	369	-530	-71
Long Term Debt Issued	5,132	7,064	3,072	2,950	5,955	2,740	996	2,064	-229	386
Long Term Debt Reduction	-4,119	-6,212	-1,242	-1,641	-2,601	-2,150	-532	-1,695	-301	-457
<b>Cash from Financing Activities</b>	<b>-447</b>	<b>584</b>	<b>1,256</b>	<b>604</b>	<b>2,555</b>	<b>-568</b>	<b>-767</b>	<b>-918</b>	<b>-1,812</b>	<b>-1,320</b>
Foreign Exchange Effects	-59	-74	-370	-222	-1	0	0	0	0	0
Net Change in Cash	(139)	1,524	1,745	2,267	2,122	(415)	666	704	(65)	543
Net Cash - Beginning Balance	637	258	966	1,644	1,143	1,252	837	1,503	2,207	2,142
Net Cash - Ending Balance	258	966	1,644	1,143	1,252	837	1,503	2,207	2,142	2,685

## Appendix 3: Valuation Assumptions

Changes in Net Working Capital										
(USD Mm)	2011	2012	2013	2014	2015	2016	2017F	2018F	2019F	2020F
Inventories increase (-), decrease (+)	422	12	108	6	(34)	78	128	95	90	50
Receivables increase (-), decrease (+)	(197)	(60)	663	(156)	1,223	162	266	196	187	104
Prepaid Expenses	0	0	75	273	(296)	3	5	3	3	2
Other Current Assets	0	0	39	12	18	4	6	4	4	2
Payables increase (+), decrease (-)	1,185	117	485	432	(225)	(192)	(314)	(233)	(221)	(123)
Other Current Liabilities	(868)	53	(44)	581	(451)	(19)	(31)	(23)	(22)	(12)
<b>Working capital movements</b>	<b>92</b>	<b>218</b>	<b>(443)</b>	<b>878</b>	<b>(1,588)</b>	<b>36</b>	<b>59</b>	<b>43</b>	<b>41</b>	<b>23</b>

Capex										
(USD Mm)	2011	2012	2013	2014	2015	2016	2017F	2018F	2019F	2020F
Beginning PP&E + Intangibles		10,419	12,205	15,163	18,834	21,501	23,453	24,170	24,765	25,288
<b>Total CAPEX</b>	<b>2,946</b>	<b>3,606</b>	<b>5,045</b>	<b>6,185</b>	<b>6,885</b>	<b>5,164</b>	<b>4,028</b>	<b>3,987</b>	<b>3,987</b>	<b>3,987</b>
CAPEX Growth		22.41%	39.89%	22.59%	11.32%	25.00%	22.00%	1.00%	0.00%	0.00%
(Initial PP&E + Int.) + CAPEX		14,025	17,250	21,348	25,719	26,665	27,480	28,157	28,752	29,276
<b>D&amp;A</b>		<b>1,821</b>	<b>2,087</b>	<b>2,513</b>	<b>2,916</b>	<b>3,212</b>	<b>3,311</b>	<b>3,392</b>	<b>3,464</b>	<b>3,527</b>
D&A (as a % of Beg. PPE + Capex)	0	12.98%	12.10%	11.77%	11.34%	12%	12%	12%	12%	12%
Final Fixed + Intangible Assets	10,419	12,205	15,163	18,834	22,803	23,453	24,170	24,765	25,288	25,749

Debt Schedule						
(USD Mm)	2015	2016F	2017F	2018F	2019F	2020F
Initial Total Debt	5,773	8,175	8,765	9,229	9,597	9,067
Long Term Debt Reduction		(2,150)	(532)	(1,695)	(301)	(457)
Long Term Debt Issued		2,740	996	2,064	(229)	386
Ending Total Debt	8,175	8,765	9,229	9,597	9,067	8,995
Debt evolution		7.2%	5.3%	4.0%	-5.5%	-0.8%
<b>Ending Total Debt + Accrued Interest - Paid Interest</b>	<b>-</b>	<b>9,138</b>	<b>9,819</b>	<b>10,415</b>	<b>10,110</b>	<b>10,257</b>

YPF Proved Reserves										
mmboc	2011	2012	2013	2014	2015	2016	2017F	2018F	2019F	2020F
Crude Oil	585	590	628	674	679	813	827	840	851	871
Natural Gas	427	436	456	537	547	547	610	671	730	747
<b>Total</b>	<b>1,012</b>	<b>1,056</b>	<b>1,084</b>	<b>1,211</b>	<b>1,226</b>	<b>1,361</b>	<b>1,437</b>	<b>1,511</b>	<b>1,581</b>	<b>1,618</b>

Total Argentine Reserves										
mmboc	2011	2012	2013	2014	2015	2016	2017F	2018F	2019F	2020F
Crude Oil Reserves	2,525	2,354	2,330	2,380	2,380	2,851	2,899	2,943	2,984	3,053.00
Natural Gas	2,091	1,984	2,065	2,090	2,090	2,091	2,330	2,563	2,788	2,852.80
<b>Total</b>	<b>4,616</b>	<b>4,339</b>	<b>4,394</b>	<b>4,469</b>	<b>4,469</b>	<b>4,722</b>	<b>4,984</b>	<b>5,237</b>	<b>5,479</b>	<b>5,785</b>

Prices Assumptions					
Currency: UDS	2016	2017F	2018F	2019F	2020F
Crude Oil Forward Curve	53.00	55.95	57.20	58.36	59.59
<b>Crude Oil Forward Curve + Subsidies</b>	<b>65.00</b>	<b>63.00</b>	<b>64.20</b>	<b>65.36</b>	<b>66.59</b>
Natural Gas	5.80	6.80	6.80	6.80	6.80
<b>Gas (mmboc)</b>	<b>32.57</b>	<b>38.18</b>	<b>38.18</b>	<b>38.18</b>	<b>38.18</b>
<b>NGL</b>	<b>14.50</b>	<b>14.90</b>	<b>15.07</b>	<b>15.22</b>	<b>15.38</b>
Exchange Rate Project	16.20	19.50	22.82	26.24	29.13

**Estimated WACC for 2016-2020 Forecast**

Risk Free Rate	1.7%
Market Risk Premium	6.2%
Country risk Premium	2.0%
Beta	2.28
Cost of Equity	15.82%
WACC for Forecast	10.71%

**Estimated WACC for Terminal Value**

Risk Free Rate	3.0%
Market Risk Premium	6.2%
Beta	2.24
Cost of Equity	16.89%
WACC for Terminal Value	11.28%

**Common inputs**

E = Equity	9,308,407
D = Debt	8,174,975
E+D	17,483,382
E/(E+D)	53.24%
D/(E+D)	46.76%
D/E	87.82%
Tax rate	62%
Cost of debt	12.90%

<b>2020F</b>	<b>Beta 2020F</b>	2.24
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<b>2016</b>	<b>Beta hoy</b>	2.28
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## Appendix 4: YPF's Markets shares

**Downstream****Market Share Breakdown (%)**

	Crude Processing	Num. Of Gas Stations	Gasoline	Diesel
YPF	56%	35%	56%	56%
Shell	16%	14%	18%	16%
Axion	16%	11%	15%	15%
Petrobras	5%	6%	5%	6%
Oil	5%	6%	-	-
Others	2%	28%	6%	7%

**Upstream****Market Share Breakdown (%)**

	Oil Production		Gas Production
YPF	46%	YPF	42%
Pan American Energy	19%	Pan American Energy	17%
Chevron	4%	Total	9%
Pluspetrol	4%	Pluspetrol	3%
Petrobras	4%	Petrobras	5%
Others	23%	Wintershall	9%
		Others	15%

Company Name	EV/Revenue	EV/EBITDA	P/E	P/B
China Petroleum & Chemical Corp	0.43	5.00	9.89	1.02
Ecopetrol SA	1.92	4.93	16.36	1.09
Esso Thailand PCL	0.30	6.95	43.04	1.13
Exxon Mobil Corp	1.31	8.54	13.85	0.81
Gazprom Neft' PAO	0.85	3.95	21.74	2.07
PetroChina Co Ltd	1.02	6.72	15.37	0.67
Petroleo Brasileiro SA Petrobras	1.66	6.00	3.41	0.58
Royal Dutch Shell PLC	1.07	6.66	6.37	1.05
YPF SA	0.78	2.78	12.94	0.71



## Appendix Vaca Muerta

Free-Cash-Flow																	
(USD Mm)	2016	2017F	2018F	2019F	2020F	2021F	2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F	2032F
<b>Revenues</b>	<b>943</b>	<b>1234</b>	<b>1473</b>	<b>1693</b>	<b>2185</b>	<b>2425</b>	<b>2502</b>	<b>2561</b>	<b>2558</b>	<b>2557</b>	<b>2554</b>	<b>2547</b>	<b>2544</b>	<b>2550</b>	<b>2543</b>	<b>2447</b>	<b>2359</b>
Lifting	76	94	112	127	141	153	156	158	156	155	154	153	152	151	151	145	139
Royalties	113	148	177	203	262	291	300	307	307	307	306	306	305	306	305	294	283
IIBB	28	37	44	51	66	73	75	77	77	77	77	76	76	77	76	73	71
Others	141	185	221	254	328	364	375	384	384	384	383	382	382	383	382	367	354
Fixed Cost	236	308	368	423	546	606	625	640	639	639	638	637	636	638	636	612	590
<b>EBITDA</b>	<b>349</b>	<b>461</b>	<b>551</b>	<b>635</b>	<b>843</b>	<b>938</b>	<b>970</b>	<b>995</b>	<b>995</b>	<b>996</b>	<b>996</b>	<b>993</b>	<b>993</b>	<b>996</b>	<b>994</b>	<b>956</b>	<b>922</b>
D&A	91	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>EBIT</b>	<b>258</b>	<b>461</b>	<b>551</b>	<b>635</b>	<b>843</b>	<b>938</b>	<b>970</b>	<b>995</b>	<b>995</b>	<b>996</b>	<b>996</b>	<b>993</b>	<b>993</b>	<b>996</b>	<b>994</b>	<b>956</b>	<b>922</b>
Taxes	90	161	193	222	295	328	340	348	348	348	348	348	348	349	348	335	323
<b>CFO</b>	<b>258</b>	<b>300</b>	<b>358</b>	<b>413</b>	<b>548</b>	<b>610</b>	<b>631</b>	<b>647</b>	<b>647</b>	<b>647</b>	<b>647</b>	<b>646</b>	<b>645</b>	<b>648</b>	<b>646</b>	<b>622</b>	<b>599</b>
CAPEX	906	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>FCFF</b>	<b>-647</b>	<b>300</b>	<b>358</b>	<b>413</b>	<b>548</b>	<b>610</b>	<b>631</b>	<b>647</b>	<b>647</b>	<b>647</b>	<b>647</b>	<b>646</b>	<b>645</b>	<b>648</b>	<b>646</b>	<b>622</b>	<b>599</b>
2033F	2034F	2035F	2036F	2037F	2038F	2039F	2040F	2041F	2042F	2043F	2044F	2045F	2046F	2047F	2048F	2049F	2050F
<b>2286</b>	<b>2219</b>	<b>2122</b>	<b>2035</b>	<b>1960</b>	<b>1887</b>	<b>1828</b>	<b>1737</b>	<b>1653</b>	<b>1583</b>	<b>1516</b>	<b>1457</b>	<b>1405</b>	<b>1315</b>	<b>1231</b>	<b>1157</b>	<b>1091</b>	<b>1031</b>
134	130	124	119	114	110	106	100	95	91	87	83	80	75	70	65	62	58
274	266	255	244	235	226	219	208	198	190	182	175	169	158	148	139	131	124
69	67	64	61	59	57	55	52	50	47	45	44	42	39	37	35	33	31
343	333	318	305	294	283	274	260	248	237	227	219	211	197	185	174	164	155
571	555	530	509	490	472	457	434	413	396	379	364	351	329	308	289	273	258
<b>894</b>	<b>869</b>	<b>831</b>	<b>797</b>	<b>768</b>	<b>739</b>	<b>717</b>	<b>681</b>	<b>649</b>	<b>621</b>	<b>595</b>	<b>573</b>	<b>552</b>	<b>517</b>	<b>484</b>	<b>455</b>	<b>429</b>	<b>406</b>
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>894</b>	<b>869</b>	<b>831</b>	<b>797</b>	<b>768</b>	<b>739</b>	<b>717</b>	<b>681</b>	<b>649</b>	<b>621</b>	<b>595</b>	<b>573</b>	<b>552</b>	<b>517</b>	<b>484</b>	<b>455</b>	<b>429</b>	<b>406</b>
313	304	291	279	269	259	251	238	227	217	208	200	193	181	169	159	150	142
<b>581</b>	<b>565</b>	<b>540</b>	<b>518</b>	<b>499</b>	<b>481</b>	<b>466</b>	<b>443</b>	<b>422</b>	<b>404</b>	<b>387</b>	<b>372</b>	<b>359</b>	<b>336</b>	<b>315</b>	<b>296</b>	<b>279</b>	<b>264</b>
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>581</b>	<b>565</b>	<b>540</b>	<b>518</b>	<b>499</b>	<b>481</b>	<b>466</b>	<b>443</b>	<b>422</b>	<b>404</b>	<b>387</b>	<b>372</b>	<b>359</b>	<b>336</b>	<b>315</b>	<b>296</b>	<b>279</b>	<b>264</b>

Production (mmboe)			
Años	Gas	Oil	Total
1	2,209	1,277	3,486
4	2,399	1,387	3,786
6	1,593	921	2,514
8	1,080	624	1,704
12	1,718	993	2,711
15	1,325	766	2,091
19	1,080	624	1,704
24	1,074	621	1,694
29	767	443	1,210
35	399	231	629
<b>TOTAL</b>	<b>13,642</b>	<b>7,888</b>	<b>21,530</b>

mmboe	Total Vaca Muerta				YPF						YPF with Risks			
	Oil	Conden State	Gas	Total	Oil	Conden State	Gas	Total	% of Liquids	Risk (%)	Oil	Conden State	Gas	Total
Total	6,928	396	15,483	22,807	4,930	224	8,526	13,680	38%	16%	789	36	1,364	2,189
Prospective	5,732	396	15,038	21,166	3,966	224	8,161	12,351	34%	10%	397	22	816	1,235
Contingent	1,115	0	410	1,525	883	0	330	1,213	73%	75%	662	0	248	910
3P reserves	81	0	35	116	81	0	35	116	70%	94%	76	0	33	109
Possible	33	0	15	48	33	0	15	48	69%	90%	30	0	14	43
Probably	25	0	11	36	25	0	11	36	69%	90%	23	0	10	32
Proved	23	0	10	33	23	0	10	33	70%	100%	23	0	10	33

## Appendix Agreements

2016 YPF's Agreements	Description	Date
YPF - Statoil	To explore the Argentinean continental slope offshore , ranging from the border with Uruguay to Comodoro Rivadavia, Chubut	10/28/16
YPF - Gas y Petróleo del Neuquen - Provincia de Nequen	To stimulate the development of unconventional hydrocarbons projects in Nequen. This requires an investment of USD 454 millions, of which USD 325 millions comes from YPF	10/20/16
YPF Energía Eléctrica S.A - YPF - General Electric Power	To build a thermoelectrical plant in Vaca Muerta. It is an investment of approximately USD 100 millones, capable of generating energy for more than 30.000 families and 300 new jobs.	9/15/16
YPF - YPFB (Yacimientos Petrolíferos Bolivianos)	For the exploration of hydrocarbons in Bolivia. Effected the discovery, both companies are going to participate on an investment project that could exceed US\$ 1.100 millions.	7/12/16
YPF - General Electric	For the construction of a power plant located on Tucumán. The investment requires about USD 170 millions and will be able to generate power for more than 280.000 families. It is estimated that the plant will be able to operate in 2018.	6/21/16
YPF - Enap Sipetrol Argentina	To set PIAM (Proyecto Incremental Area Magallanes) a proyect to increase the production of natural gas and crude oil in Magallanes deposit. It requires an investment of USD 165 millions and will be able to increase daily gas and oil production by 60% and 25% respectively.	6/2/16
YPF - Gobierno Provincial de Río Negro	It requires an investment of U.S\$ 8 millions for the exploration of hydrocarbons in Chelforó, Río Negro, an area of 6800 km2.	1/22/16
YPF - American Energy Partners	For exploration and development of Vaca Muerta, Nequen. It is a project that requires investments of more than USD 500 millions for the next three years.	1/14/16
YPF - Scania	Scania is committed to continue using "Extravida" lubricants , oils and other fluids for their plant in Tucuman and in their Argentinean concessionaries.	1/13/16

Position	Name	Period
Chairman, Chief Executive Officer (CEO) and Director	Miguel Ángel Gutiérrez	One exercise
Director	Roberto Luis Monti	One exercise
Director	Norberto Alfredo Bruno	One exercise
Director	Néstor José Di Pierro	One exercise
Director	Juan Franco Donnini	One exercise
Director	Enrique Andrés Vaquié	One exercise
Director	Armando Isasmendi	One exercise
Director	Carlos Alberto Felices	One exercise
Director	Daniel Gustavo Montamat	One exercise
Director	Fabián Jorge Rodríguez Simón	One exercise
Director	Inés María Leopoldo	One exercise
Director	Daniel Alberto Kokogian	One exercise
Director	Octavio Oscar Frigerio	One exercise
Director	Luis Augusto Domenech	One exercise
Director	Emilio José Apud	One exercise
Altenate Director	Gerardo Damián Canseco	One exercise
Altenate Director	Alejandro Rodrigo Monteiro	One exercise
Altenate Director	Luis Gustavo Villegas	One exercise
Altenate Director	Lucio Mario Tamburo	One exercise
Altenate Director	Pedro Martín Kerchner Tomba	One exercise
Altenate Director	Facundo Daniel Massafra	One exercise
Altenate Director	Daniel Cristián González Casartelli	One exercise
Altenate Director	Carlos Alberto Alfonsi	One exercise
Altenate Director	Fernando Raúl Dasso	One exercise
Altenate Director	Sergio Pablo Antonio Affronti	One exercise
Altenate Director	Fernando Pablo Giliberti	One exercise

