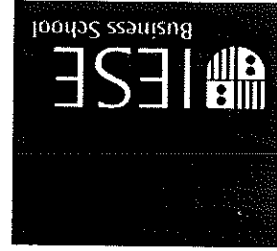


Valuation of an expropriated company: The case of YPF and Repsol in Argentina

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**A case: Valuation of an expropriated company:
The case of YPF and Repsol in Argentina**

<http://ssrn.com/abstract=2176728>

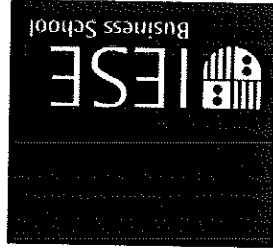
On April 16, 2012 the Argentine Federal Government decreed the intervention of YPF. The share price of YPF declined 29% the day after. Two weeks later (May 3rd), the Argentinean Parliament approved the expropriation of 51% of the YPF shares owned by Repsol. Repsol had a 57.4% stake.

Main shareholders of YPF in April 2012

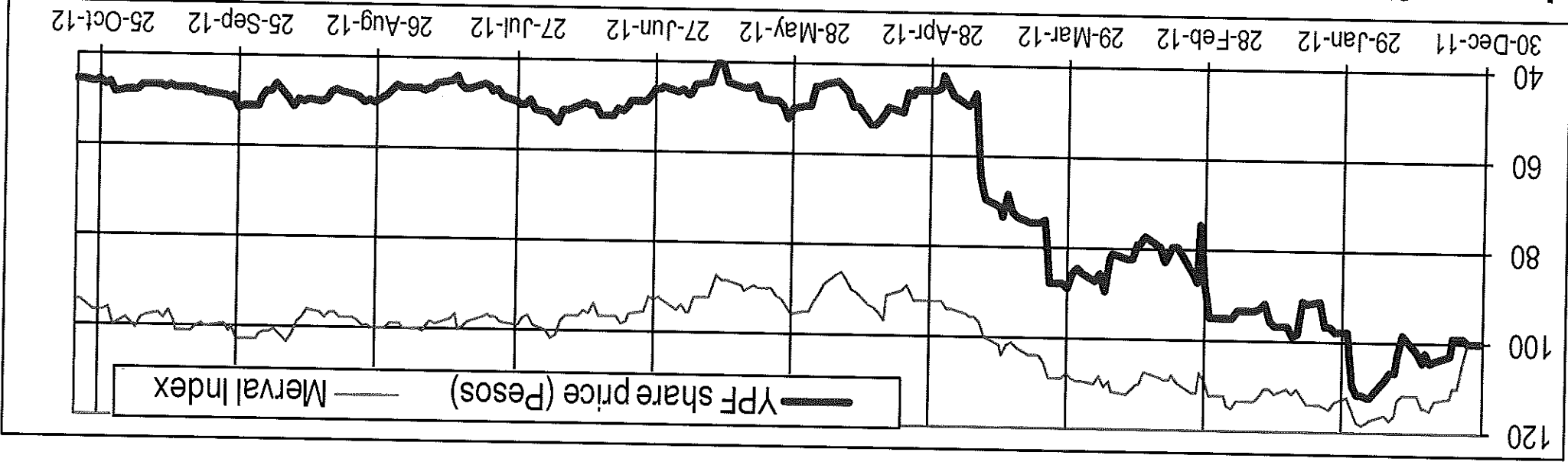
	Before the expropriation		After the expropriation
	Number of shares	(%)	
Repsol YPF	225,890,313	57.43%	6.43%
Petersen Group	100,145,077	25.46%	25.46%
Public	67,225,593	17.09%	17.09%
Argentine federal and provincial governments	11,388	0.003%	51.00%
Employee fund	40,422	0.01%	0.010%
Total	393,312,793		

A tribunal will determine the compensation Repsol will receive for its YPF shares. You are required to help the tribunal. **What is your best estimation of the compensation that Repsol should receive for its expropriated 51% of YPF shares?**

Evolution of the YPF share price compared with the Merval Index in 2012. December 2011 = 100



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January 27, 2012. Start rumors, news and announcements around a potential YPF expropriation. Day after: YPF -10.6%; S&P Integrated Oil & Gas index -0.2%; Merval -2.1%. Next three months: cancellations of concessions for oil fields in several provinces (YPF accused of not making investments to increase production). 27 January - 17 April 2012: YPF -41%; S&P Integrated Oil & Gas index: -9%; Merval: -16% 18 April 2012: YPF -28.6%.



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Some events of the pressure building up on YPF in 2012

- 27-29 Jan 2012. Strong press rumors regarding a potential expropriation of YPF. Its share price fell 10.6% the day after.
- 29 Jan. Newspaper *Pagina/12* reports that the government is considering the nationalization of YPF
- 1 Feb. Repsol's CEO to travel to Argentina amid YPF rumors of nationalization
- 3 Feb. Argentina's Govt. suspended its *Oil Plus* and *Refining Plus* programs that had aimed to encourage new investment
- 8 Feb. YPF issues press release highlighting highest-ever capex (50% increase year-on-year) and Repsol publishes the Ryder Scott report about shale oil and gas resources in Vaca Muerta
- 23 Feb. Roberto Baratta, the government's representative on YPF's board, walks out after other officials including Energy Secretary Daniel Cameron and Deputy Economy Minister Axel Kicillof are barred from attending the board meeting
- 24 Feb. Oil producing provinces demand that oil companies increase production by 15% in the next two years or face losing their licences
- 29 Feb. *Ambito Financiero* reports that President Cristina Fernandez Kirchner could announce a takeover of YPF
- 2 Mar. Chubut province gives seven days to YPF to provide a working plan for its regional investments
- 3 Mar. Argentinean state news agency reports that the Santa Cruz province has given YPF a five-day deadline to justify its lack of investment in more than 20 oil and gas fields
- 6 Mar. Mendoza province gives one month to YPF to boost investments in two fields
- 8 Mar. YPF 2011 accounts approved. A single negative vote of the government representative in the board of directors
- 9 Mar. Neuquen province gives YPF a seven-day deadline to provide a development plan for some fields in the province
- 13 Mar. YPF asks the Santa Cruz government to extend oil licence withdrawal deadlines
- 14 Mar. Chubut and Santa Cruz provinces withdraw five concessions from YPF
- 23 Mar. Mendoza, Salta, Río Negro and Neuquén regions withdrew YPF licenses.
- 29 Mar. YPF announced a new oil field discover in Mendoza region.
- 11 Apr. Santa Cruz region withdrew YPF license.
- 12 Apr. New press rumours regarding a potential expropriation of YPF.
- 16 Apr: Argentina's President announced that a 51% stake in YPF controlled by Repsol will be expropriated

Some opinions about YPF before 2012

- **President Cristina Fernandez de Kirchner:**
 - 2009. June 22. "This investment (of YPF) shows the vital links forged between businesses, workers and the government to grow in harmony and allow everybody to benefit from this growth."
 - 2009. December 22. "YPF is the largest company in terms of tax contributions to the state, not only by paying taxes but also by the dreams of Argentina that is now trying to get back on track". "This plan reaffirms the hope and optimism in the present and in the future, we are seeing in almost every Argentine businessman".
 - 2010. September 3. She praised YPF "to continue with their investments in the country and be a major contributor". You are leading "the most important company of Argentina."
 - 2010. December 12. "We are very happy because this is going to keep up the country's growth". YPF's discoveries "make the growth of the country even more sustainable."
 - 2011. May 10. The discovery of Vaca Muerta "will allow us to maintain and further promote development."
- **Other:**
 - 2009. June 22. "In our company the Argentinian flag must fly next to the Spanish flag ... Our Spanish friends are just as Argentinian as us, and we are just as Spanish as them". Mr. Eskenazi, owner of Petersen Group and VP of YPF
 - 2011. February 3. "YPF is doing a great effort, supplying to 64% of our market". Vicepresident Boudou.
 - 2011. November 2. "The Federal Government is in full agreement with the activities that YPF is developing." Roberto Baratta, National Government of Argentina representative in the board of YPF
 - 2011. December 6. YPF "is our flag company." Julio de Vido, Planning Minister.



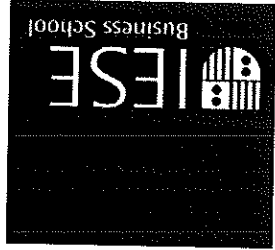
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Precedent transactions of YPF shares

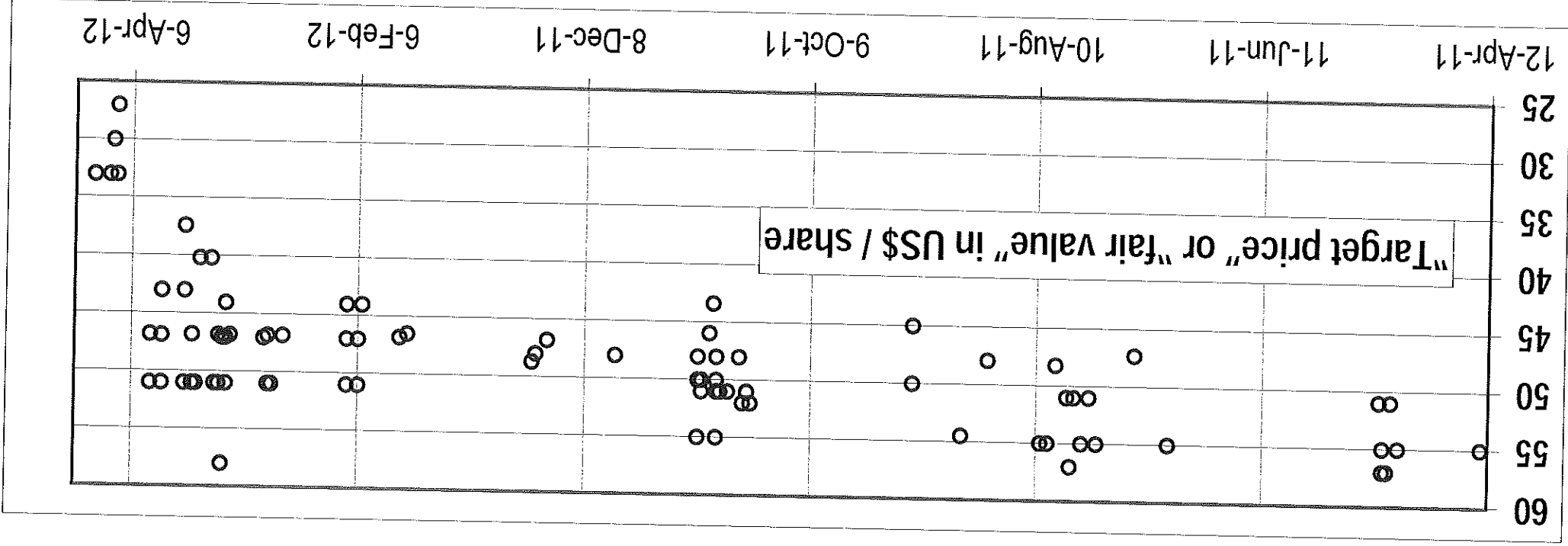
Event	Million US\$	US\$/share
1999. January, 20. Repsol acquired 14.99% of YPF previously owned by the Argentine Government.	2,011	38.0
1999. June 24. Repsol Tender offer and acquisition of an additional 82.47%.	13,036	44.8
1999. November. Repsol acquires an additional 0.35%.	55	44.8
2008. February, 21. Petersen Group acquires a 14.9% of the shares from Repsol.	2,235	38.1
2008. May. Petersen Group exercised an option to buy an additional 0.1%	13	34.3
2008. October 21. Tender offer of Petersen Group. Acquisition of 0.462%	89	49.5
2010. Repsol Group sells 0.97% to several funds	147	38.5
2010. Dec. 23. Eton Park and Capital funds acquire 3.26% from Repsol	500	39.0
2011. May, 4. The Petersen Group exercises its option to acquire an additional 10% stake in YPF	1,304	33.2
2011. March, 14. Lazard AM (2,9%) and other funds (0.93%) acquire 3.83% from Repsol	639	42.4
2011. March, 23. Repsol sells a 7.67% stake through a Public Offering in ADS for in the NYSE	1,209	40.1
2011. Repsol sells 0.88% to several funds	153	44.1

Analyst reports about YPF

April 2011 – April 2012



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Average until February 2012: US\$50.7 / share



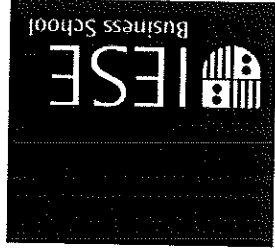
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YPF's bylaws valuation methodology

Articles 7 and 28 of YPF's bylaws were approved by the Argentinean Government in 1993 at the time of the privatization as a protection for investors.

- Article 28 establishes that if, as a result of acquisitions, the National Argentinean Government becomes the owner of 49% of the capital stock it would need to launch a tender offer for all YPF's share capital. The price to be offered is determined by Article 7.
- Considering **January 27, 2012** as the day immediately preceding the takeover notice, the price for the tender offer should have been **US\$56.7 / share**.
- Considering **16 April 2012**, the price for the tender offer should have been **US\$47.3 / share**.

Cash Flows of Repsol due to its investment in YPF



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Shares Astra
Merge (*)

Shares YPF
Bought
Sold

Year	Shares Astra Merge (*)	Shares YPF Bought	Shares YPF Sold	Dividends	Total	Total	Internal rate of return
1999				366.8	-14,735.2	-14,699.9	
2000				304.8	304.8	324.6	
2001	-1,652			1,644.0	-8.0	-9.0	
2002				437.5	437.5	416.9	
2003				1,039.1	1,039.1	823.8	
2004				1,828.1	1,828.1	1,344.9	
2005				1,656.4	1,656.4	1,404.2	
2006				767.8	767.8	582.2	
2007				752.9	752.9	515.0	
2008		1,232.0		2,435.8	3,667.8	2,638.6	
2009				1,088.1	1,088.1	758.4	
2010		647.0		942.0	1,589.0	1,184.5	
2011		2,679.0		767.0	3,446.0	2,654.5	
2012 (1)		4,558		14,030.2	2,578.7	-1,479.6	
Sum	-1,652	-15,102				581.7	1.9%

€ million



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Vaca Muerta: a huge oil and gas shale

- New technologies have enabled the production of Oil and Gas from previously untapped shale reservoirs. These technologies were first commercially applied in 1998 in the US Barnett Shale and in 2005 in the US Bakken formation (North Dakota).
- Over the last decade shale gas production in United States boomed and it currently it accounts for **25% of total domestic production**, offsetting the decline of conventional fields and reducing the quantity of Liquid Gas imports.
- In 2012, U.S. crude oil domestic production is expected to reach 6.2 million barrels per day (Mbpd) of which 2 Mbpd come from unconventional fields. Conventional production is declining and unconventional production is growing rapidly. In 2012, the investment in non conventional resources in the U.S. amounts to US\$87 billion.

Vaca Muerta: a huge oil and gas shale (II)

Transactions in the World Oil Industry (Upstream)

Number of transactions	World				USA			
	2009	2010	2011	2012*	2009	2010	2011	2012*
Conventional	1,002	984	1,001	848	213	238	310	215
Non-conventional	272	376	431	359	97	200	220	155
Total	1,274	1,360	1,432	1,207	310	438	530	370
% Non-conventional / Total	21%	28%	30%	30%	31%	46%	42%	42%

Average value of Non-conventional Transaction (US\$ million)		476		452		741		476	
Conventional	1,002	984	1,001	848	213	238	310	215	155
Non-conventional	272	376	431	359	97	200	220	155	155
Total	1,274	1,360	1,432	1,207	310	438	530	370	370
% Non-conventional / Total	21%	28%	30%	30%	31%	46%	42%	42%	42%

May 2011. Repsol YPF announced a large discovery of unconventional hydrocarbons at the **Vaca Muerta**.

Total hydrocarbon resources and reserves discovered: **22,807 million barrels** of oil equivalent (Mboe), according to the international specialist **Ryder Scott**.

These discovered volumes equate less than half of the mining rights held by YPF (3 million acres) in this formation because the **Ryder Scott** report only covers an acreage of around 1.99 million acres (YPF owns 1.2 million of them).

1,959 valuations of the YPF shares expropriated to Repsol

<http://ssrn.com/abstract=2226321>

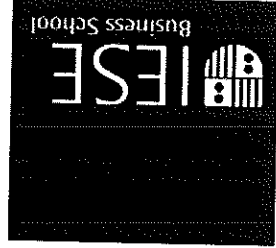
Professors and managers from 42 countries

Question: *What is your best estimation of the compensation that Repsol should receive for its expropriated 51% of YPF shares?*

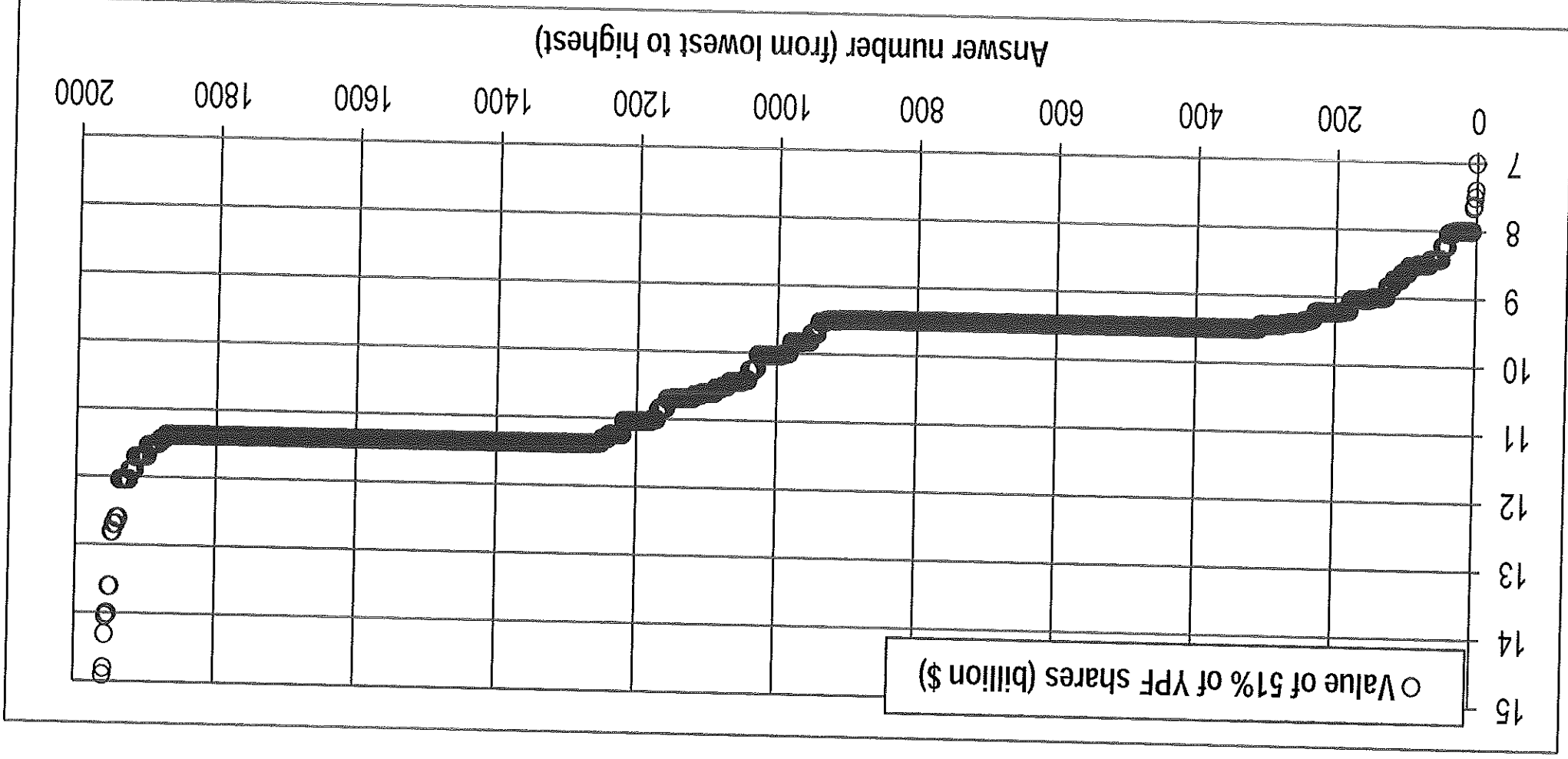
	Number of answers	Value per share of YPF (US \$)		
		average	max	min
Analyzed in the article	1,959	51.2	74.3	34.9
Outliers	13	70.2	147.1	20.7
Answers without a figure	71			
Total	2,043			
Analyzed in the article Mill US\$	1,959	10,270	14,900	7,000

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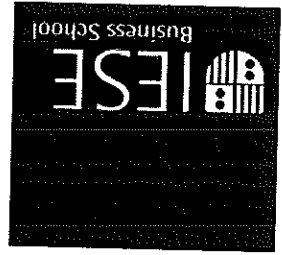
Country	Number of answers	Value per share (\$)			
		average	max	min	st.dev.
Argentina	32	50.2	56.7	38.1	6.7
Australia	20	51.5	58.3	39.9	7.3
Brazil	15	47.9	58.3	39.9	5.1
France	20	54.5	60.0	47.0	4.4
Germany	79	52.7	59.3	42.4	4.4
India	13	54.6	70.0	47.3	6.3
Italy	26	52.2	56.7	47.0	3.9
Spain	882	50.8	73.8	34.9	5.5
UK	100	50.8	59.3	37.4	5.0
USA	446	52.9	69.8	39.9	4.8
All	1,959	51.2	74.3	34.9	5.4

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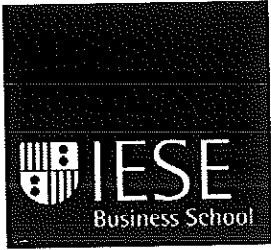
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Number of		Value per share (\$)			
answers	average	max	min	st.dev.	
Companies	531	51.0	71.3	36.9	5.6
Financial companies	899	50.9	74.3	34.9	5.4
Professors	497	52.0	60.0	38.0	5.0
Other	32	50.1	58.3	39.9	4.7
Total	1,959	51.2	74.3	34.9	5.4



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Distribution and frequency of the 1,959 answers

<http://ssrn.com/abstract=2226321>

