

# Long term contracts at the boundaries between competition, foreclosure and regulation

Anna Creti  
Université Paris Dauphine



CHAIRE EUROPEAN  
ELECTRICITY MARKETS  
Fondation Paris-Dauphine

DAUPHINE  
UNIVERSITÉ PARIS

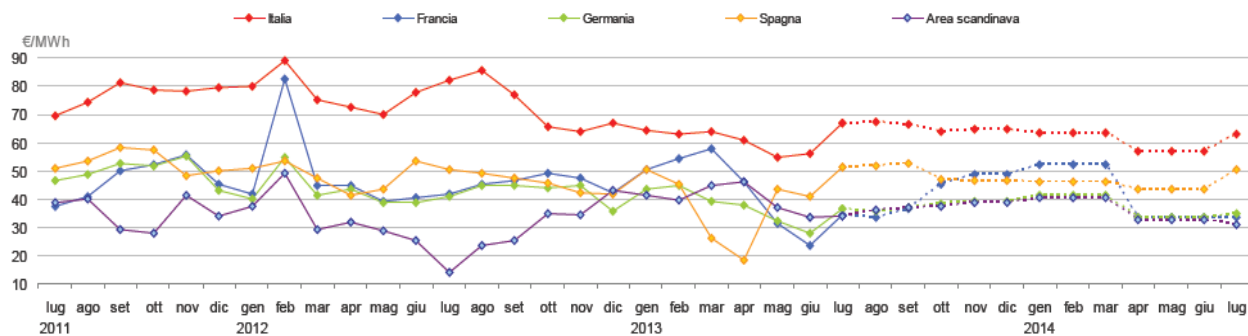
# Roadmap

- Long-term contracts: main models
  - Pro and anti-competitive effects: issues at stake
    - The Allaz-Vila (1993)'s family: *forward contracts*
    - The Bolton (1990)'s family: *long-term contracts*
- Regulation and Competition policy issues
  - Contracts as behavioural remedies against the abuse of market power
  - Foreclosure : the Exeltium case

Figura 2: Borse europee, quotazioni mensili spot e a termine. Media aritmetica

Fonte: Thomson-Reuters

Quotazioni spot (€/MWh)					Quotazioni futures (€/MWh)			
Area	Lug 13	Diff M-1(%)	Diff M-12(%)	Ultima quot. future	Ago 13	Set 13	Ott 13	Calendar
Italia	66,86	+18,0%	+8,7%	-	67,45	66,70	64,00	61,15
Francia	34,06	+4,0%	+7,7%	-	33,0	30,6	45,45	41,78
Germania	36,42	+30,9%	-11,2%	32,75	35,70	36,86	38,12	37,35
Svizzera	36,24	+28,9%	-10,2%	-	-	-	-	-
Austria	35,81	+28,9%	-11,7%	-	-	-	-	-
Spagna	51,16	+25,5%	+7%	7,03	51,85	52,70	47,04	47,00
Area scandinava	33,81	+0%	+6,8%	3,7	36,00	5,75	37,24	35,00

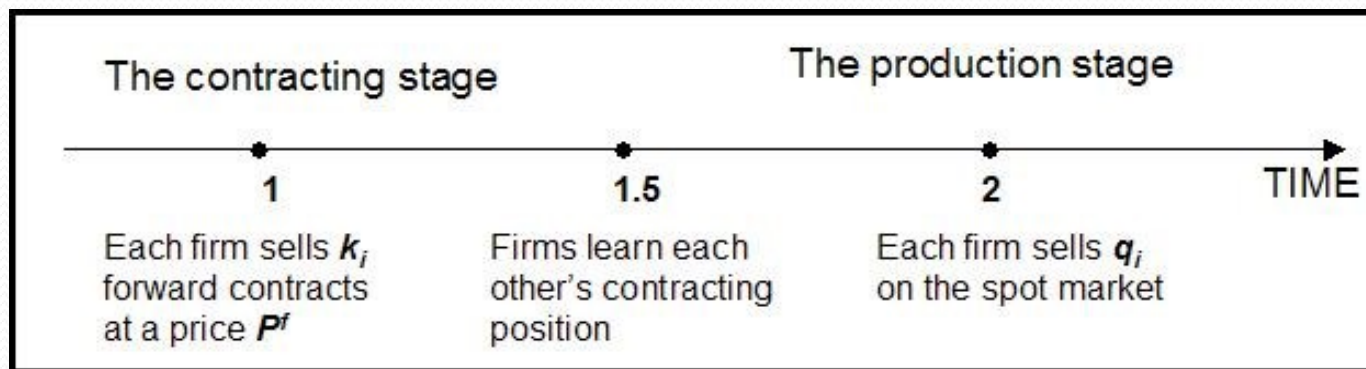


# The theory of Long-Term Contracts

- **Long-term contracts as a device to avoid the risks of hold up:**
  - Klein, Crawford and Alchian (1978) and Williamson (1983), Joskow (1987), Croken and Masten (1985) and Masten and Crocker (1988)
- **Long-term contracts to secure investments:**
  - Crawford (1988) , Oren (2003), Neuoff and De Vries (2004), Parsons (2008)
- **Forward contracts as a pro-competitive device:**
  - Allaz-Vila (1993)&co
- **Long-term contracts as anti competitive device:**
  - Bolton (1990), Hart (1987), Hart and Holmstrom (1987), Aghion-Bolton (1987), Dewatripoint (1989)

# Forward Contracts as pro-competitive device

## Timing of the spot/forward game



*“One could believe that uncertainty about some variables should be a requirement for any forward market to exist [but] this is not to be the case. We derive a rational for the use of forward markets in an attempt to improve their situations on the output market (...), they will use forward transactions as strategic variables”*

*Allaz-Vila (2003)*

# The Cournot game with Forward Contracts

Forward contracts serve as a binding device.

By selling forward each oligopolist commits to a Stackelberg level of output and behaves more aggressively on the correlated spot market.

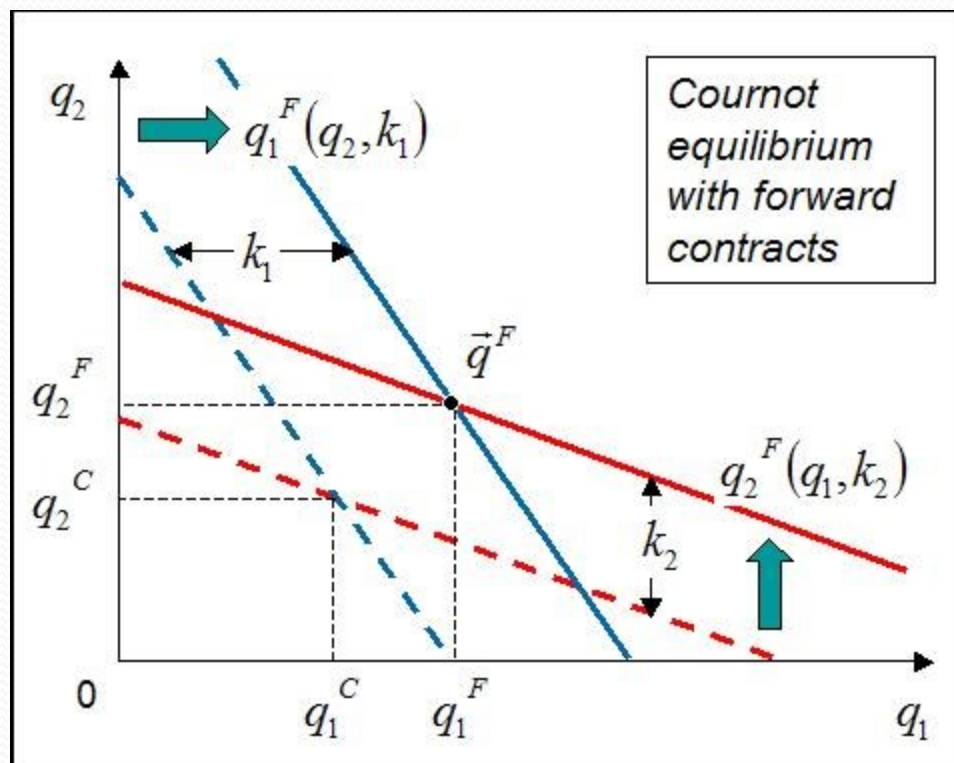
Prisoners' dilemma type of effect

Since everybody do so at equilibrium no one succeed in acquiring an effective leader's advantage.

# The Cournot game with Forward Contracts

From the social point of view the tension between private and collective interests is resolved in favour of the latter.

Competition is enhanced in the spot market and the output price declines compared to the pre-forward situation.



## Criticisms: theory

- AV/Bushnell's results are very sensitive to the to modelling assumptions. Pro-competitive effects may vanish if there is...
  - Bertrand competition (Mahenc Salanié, 2004); Stakelberg leadership (Bonacina-Creti, 2009)
  - Supply functions (Green (1999)
  - Retail Competition (Green, 2004)
- Non linear costs or demand (Breitmoser, 2011)
- Observability(Hugues and Khao, 1997)
- Capacity Investment (Adilov, 2005; Murphy, 2007; Ferreira, 2011)
- Network constraints (Kamat and Oren, 2003)
- Entry (Gans, 1998)
- Dynamics and collusion (Ferreira, 2003, Liski Montero, 2006, Montero 2013, Wolfing 2013)



# Criticisms: empirics

- Weak empirical evidence:
  - Wolak (2001): overcontracting in the Australian Market explains very low prices
  - Bushnell, Mansur, Saravia (2005): Californian crisis and lack of forward “hedging” contracts for vertically integrated firms
  - Green and Le Coq (2005,2010): experimental evidence in favor of the pro-competitive effects

*Wolak (2001)*

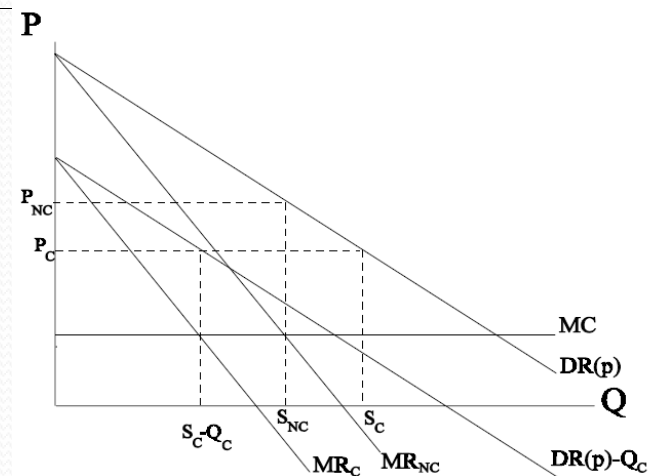


Figure 1: Best-Response Prices with Generation Greater than Contract Quantity

# Long-term contracts as anti-competitive device

- Long-term commitment in a bilateral relationship where asymmetric or incomplete information is at stake
  - Unilateral or bilateral renegotiation/deviation is possible: ex ante efficiency vs ex post inefficiency
- Aghion and Bolton (1987): by locking himself into a long-term contract with the seller, a buyer reduces the size of a potential entrant's market, thereby reducing the probability of entry.
  - As a result, other buyers will have to accept a higher price. The seller can exploit this negative externality between buyers to extract consumer surplus from the others.
  - ...The Antitrust Paradox - Bork - 1978

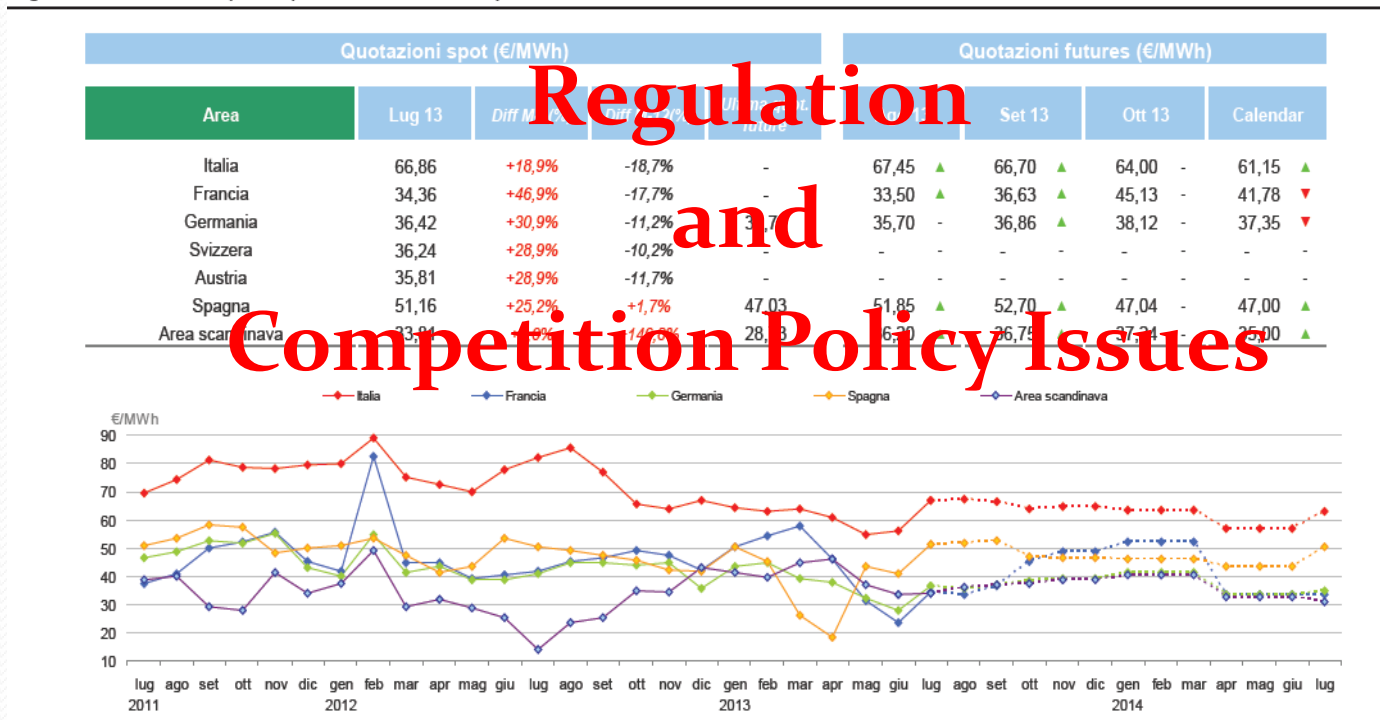
# Long-term contracts as anti-competitive device

- Endogenous barriers to entry:
  - Exclusive contracts, Refusal to supply, Vertical Integration
  - ...important characteristics of the electricity/gas industry



Figura 2: Borse europee, quotazioni mensili spot e a termine. Media aritmetica

Fonte: Thomson-Reuters



# Regulation and Competition Policy Issues

- Restructuring rules and market monitors have looked unfavorably on the use of long-term contracts to protect franchises and block customer flexibility and therefore competition.
  - EU Commission Oct. 07 decision against **Distrigas** in Belgium forcing it to reduce the volumes tied to long-term contracts. New contracts with gas, resellers will not exceed two years, with electricity generators five years.
  - Bundeskartellamt 2006 decision against **E.ON/Ruhrgas** to stop writing contracts with distributors that cover more than 50% of demand for more than four years and 80% for two years.

# Regulation and Competition Policy Issues

- *Exeltium case, EU Commission 2010*
- Exeltium is a consortium of large industrial customers that intended to conclude a contract with EDF for the supply of a substantial amount of electricity over a very long period of time
  - In the Commission's view, the foreclosure effect of EDF contractual portfolio was the consequence of a combination of three different elements: (i) the **volumes covered by EDF** contracts on the relevant market, (ii) the **actual duration** of its contracts (8), and (iii) **their nature**.
- *Lessons:* the two first factors taken together meant that alternative suppliers had insufficient opportunities to compete 'for the contracts'; *the duration is only one but not the only factor* that determines foreclosure

# Regulation and Competition Policy Issues

- Forward contracts have been used as behavioural devices against abuse of dominant positions
  - Virtual Power Plant in Italy (Enel abuse of dominant position, 2006)
  - NOME Law in France (Competition in the Retail market, 2012-Creti et al. 2013)
  - Virtual Power Plants in France (obligation after EdF took control of the German company EnBW; merger remedies 2001).
- *Lessons: the pro-competitive effect is « guaranteed » by a public intervention* and the implementation mode



# Thank you

[anna.creti@dauphine.fr](mailto:anna.creti@dauphine.fr)



CHAIRE EUROPEAN  
ELECTRICITY MARKETS  
Fondation Paris-Dauphine

DAUPHINE  
UNIVERSITÉ PARIS