

## ELECTRIC AND GAS DEREGULATION: NOT-SO-COLD CASES\*

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A few months ago I received a message informing me that my theories about electricity trading and risk management were – like the “retrograde” contents of my international finance textbook (2001) – completely worthless. The last expression was not actually used, because the author of this put-down had a French name as well as a French way of expressing himself.

The basic problem here is that I have no home-grown theories about these topics. Figuratively speaking, and in an historical sense, the writing is on the wall in block letters so large that they cannot possibly be avoided or misinterpreted. For instance, the exchange trading of financial assets (e.g. stocks, bonds, and derivatives like futures and options) makes all the objective sense in the world, while most attempts to duplicate on a large scale the successes of these items with electricity and gas have been unsuccessful. In addition, they are largely without any engineering *or* economic justification.

In this brief and mostly non-technical exposition, I present a few old and new remarks about electricity deregulation (or *restructuring*). I’d like to claim that everyone has gotten the ‘word’ about this subject, but as we enjoyed saying in the military, there are always persons who make it their business to switch off their brains at critical moments. As for the deregulation of natural gas, this is a blunder that – in Europe at least – is still in its early stages. The upshot of this *faux pas* cannot be predicted at the present time, although I think it fair to stress that what is repeatedly referred to as ‘liberalisation’ (i.e. deregulation or restructuring) is fundamentally an abstract departure with virtually no support whatsoever in mainstream economic theory.

The best place to find easily accessible but valuable articles and comments on energy topics is the forum EnergyPulse ([www.energypulse.net](http://www.energypulse.net)). For example, in his remarks about electricity deregulation in Canada’s largest province (Ontario), Mr Len Gould makes it clear that buyers of electricity have been treated in a completely unprincipled fashion. In addition, in a comment on this paper, Gould refers to what some wit called ‘the best deregulation in the United States’ – meaning Texas – where apparently the price of electricity has stabilized at the highest level in that country.

Similarly, in a long review of deregulation failure in Ontario, Treblicock and Hrab (2005) suggest that workable reform requires a government capable of effectively

communicating to citizens the arguments for reform. This sounds wonderful, but unfortunately it is not easy to do. As I interpret the contributions in EnergyPulse of Mr Jack A. Casazza (as well as comments in that forum on his work examining deregulation failure in the US), effective communication seems to be a function of the ability of elected or appointed officials to confect and spread untruths and/or obfuscation – with, of course, the precious assistance of hired-hands from academia. Here I can suggest that all readers examine a very important paper by Casazza (2001), which appeared just before I delivered a similar analysis in Hong Kong.

On this last point it can be mentioned that I also contributed to a Swedish workshop in which Mr Casazza's research was brusquely criticized by a gentleman from the University of California; however, as it turned out, he had come to the wrong country, at the wrong time, to get the desired names on his dance card. An increasingly vocal majority of Swedes have begun to realize that regardless of how much they may love electricity deregulation, it has no affection for them. This includes the directors of large, energy-intensive industries, as well as households and small businesses.

#### A CASE OF MISTAKEN IDENTITY

One of the few expert witnesses taking issue in public with my frequent negative descriptions of electricity trading is Erling Mork, director of statistics and analysis at the Nordic Electricity Exchange (NordPool) in Oslo. In his paper in the Newsletter of the International Association for Energy Economics (2004), he admits that NordPool has its “flaws”, but rather than declaring this establishment a failed experiment, he believes that “we” should work to improve what he calls “by several measures a success.” Anyone who wants to find out about the successes of NordPool in plain language should examine the article in *Time Magazine* (March 3, 2003, pg 36-37) describing the surprises inflicted on Norwegian (and other Scandinavian) consumers as a result of their foolishly not contesting the decision by their governments to allow NordPool to enter the electricity pricing picture.

What that establishment is basically involved in is bleeding consumers via the mechanism of short-run marginal cost pricing, which means that some of the most inexpensive electricity in the world, costwise, is frequently sold at the price of some of the most expensive in Europe – e.g. that of Denmark and Germany. These high prices

also make it possible for the Swedish government to obtain a few billion more (Swedish) crowns to squander on the kind of nonsense so dear to Scandinavian hearts.

And worse is to come, because as Braconier (2005) notes, another dark cloud in the Swedish heavens is carbon dioxide ‘emissions trading’, which will also very likely be managed by NordPool. Swedish hydro and nuclear electricity generation is essentially free of carbon dioxide, but not all large firms are so fortunate, and so their costs will be increased. In addition, the trade of emissions ‘rights’ on the continent will (*ceteris paribus*) increase the price of electricity in that region, which (via NordPool) will impact on the price of electricity in Scandinavia.

Before looking more closely at this matter of electricity trading, it should be mentioned that immediately following Mork’s paper, Mr Tony Baldwin (2004) assures interested readers that in New Zealand – and presumably elsewhere – electricity restructuring is essential in order to “improve economic and environmental performance.” I once heard someone call New Zealand deregulation the best in the world, and none other than Professor William Hogan of Harvard University ostensibly went so far as to say that “...the New Zealand electricity market design has been at the forefront of best practice,” involving as it did “extensive consideration of the experience of other countries.”

I hope that I don’t add another enemy to the large number lounging at my gate when I say that as far as I am concerned, New Zealand gave no consideration at all to the experience of other countries, because there was hardly any to examine when it launched this escapade. Instead, the deregulators in that fair land focussed their attention on the large supply of domestic natural gas, whose price – by one means or another – was kept below the scarcity/free-market level in order to ensure the blessings of deregulation. As things often happen, that large supply has become small, which makes it likely that NZ gas buyers are going to find out that despite Professor Hogan’s enthusiasm, the standard deregulation model is the antithesis of what Baldwin mistakenly calls “efficient investment in new generation.” An author who has gone to great trouble to point this out is Professor Reinhard Haas of Vienna’s Technical University, and in my journeys I never miss a chance to emphasize that deregulation increases uncertainty, and according to mainstream economic theory, uncertainty leads to a decline in physical investment. Strangely enough, many economists make a point of ignoring this phenomenon, which is perhaps the most important aspect of deregulation.

Baldwin also informs us that a high price volatility is an inherent part of an efficient electricity spot market. In his words, “it is not a flaw.” Instead, the flaw is in failing to hedge against it.

This is a complaint that I have been hearing since I hit the conference trail, because everybody wants to find some way to avoid being devastated by what was once known as ‘the fickle finger of fate’. The dilemma on the present occasion is that neither NordPool nor any of the other exchanges, anywhere, are capable of providing optimal hedging volumes. The main reason is because the volatility being confronted is not just high, but extreme, and as a result the speculators who are essential for generating liquidity have been burned so often that they prefer less risky commitments. Mork has referred to the finance book of John Hull (2003) in his efforts to refute my charge that organizations like NordPool are counter-productive in this matter of electricity pricing, however the most interesting part of that publication and others by Hull – who is arguably the most prolific writer on futures and options in the world – is that in books of many hundred pages he can only provide a few paragraphs to describe the trading of electricity derivatives.

Mork also notes that *contracts for differences* (i.e. swaps) have a “special role in the Nordic market.” I can certainly agree to that, but although I make an attempt to provide an introduction to swaps in my finance book, I am unable to comprehend any idiosyncracies of NordPool other than those which have to do with creating a platform that will boost the incomes of owners and employees. That operation has utterly failed to help promote the lower electricity prices that the television audiences in many countries were promised when deregulation was introduced.

### SOME ASPECTS OF ELECTRICITY TRADING IN THEORY AND FACT

The advantages and efficiencies of trading (*per-se*) are too obvious to spend any time discussing. In elementary economics textbooks this is a key topic, and generally it takes well under one term to bring home to first-year students (via e.g. utility theory or comparative advantage) the importance of establishing as comprehensive a trading system as possible.

When he gave his Nobel (prize) lecture at Uppsala University, Professor Vernon Smith vigorously promoted the idea that everyone is a natural trader, and virtually from childhood are inclined to incite and/or participate in trades of one type or another.

For what it is worth, I and many others are inclined to regard this as an indisputable fact of life! Accordingly, this is probably why, when he was in Australia, Professor Smith maintained that theoretical evidence could be obtained to support the efficacy of electricity deregulation by, among other things, some simple ‘experiments’ that entailed creating a facsimile of the trading that takes place on actual exchanges.

Here it needs to be underlined that Professor Smith was awarded his Nobel some years later because of his ability to convince the intellectually underprivileged gentlemen on the Nobel committee (via his publications) that economics had become a fully-fledged experimental science, which immediately reminds me some words of Graham Greene: “such naiveté is a form of madness.” The brilliant work of Professor Smith on production theory was completely overlooked, and instead lavish praise and recognition was accorded some highly structured burlesques that involved a few dollars being passed back and forth among bosom friends in a comfortable seminar room. Eventually these exercises were judged to be equivalent to the kind of investigations that he and other students carried out in their engineering or science studies.

The prospects for electricity deregulation in Australia are still uncertain, at least to me, however for my purposes it is sufficient to note that the outcome in South Australia was a widely advertised failure. New South Wales seems to have avoided any traumatic adjustments, however the derivatives market in Sydney is best described as a fiasco, which should have considerable significance when the excess generating capacity in that state disappears. Unfortunately, I do not have any information about the overall trading situation in that great country, but in the light of results from the rest of the world, it might be suggested that any resounding successes are unlikely.

“We believe that the energy trading model is fundamentally flawed,” observed John Diaz, managing director of the power and energy team at Moody’s Investor Services. This is the polite way of putting it, however I prefer the explanation of one of the greatly disappointed clients of a trading firm that was cited in *Business Week* (December 9, 2002): “All traders offered us was manipulation. My position is goodbye and good riddance.”

But manipulation is the name of the deregulation game, as many consumers and businesses on the buy side of the market have found out in Brazil, South Australia, Ontario and Alberta (Canada), Sweden and Norway, as well as California, Montana and points east, west, north and south inside and outside the United States. They are going to find it out elsewhere too, because as the Swedish journalist Mattias Lundbäck

once observed about the situation in Scandinavia, “profit maximization and plentiful electricity were a contradiction in terms.” Let me emphasize that this is not a political assertion, since among other things it was published in the most conservative newspaper in Sweden. Instead, it is a statement about the oligopolistic structure of a deregulated electricity market, and how it influences the behaviour of firms.

### SOME ASPECTS OF THE NATURAL GAS STORY

When I think of natural gas, I think first of a former director of British Gas, Mr Robert Evans, who spoke of the “half-baked” fracturing of the gas market that the EU Energy Directorate wanted to see imposed, and which in his opinion would lead to a palpable reduction in the efficiency of that market. If by that he meant higher gas prices, elementary economics immediately provides the relevant logic: economies of scale in transmission and compression, and probably storage, would not be fully realized because the increase in uncertainty would result in a scaling down of physical investment. (There is also the matter, in Europe and perhaps elsewhere, of pseudo-competition on the buy side of the market, facing oligopoly or monopoly on the supply side.)

I also think of a long lecture that I gave in Hong Kong in which the expression “contestable market” was used by a deregulation enthusiast. [A contestable market is one in which entry is absolutely free and exit is absolutely costless.] Normally, I would not have remembered that inapplicable intrusion except that I encountered it again in one of those unread learned journals that take up so much space in university libraries. As far as I am concerned, in the context of capital intensive industries such as gas and electricity, the assumptions underlying contestability are completely irrelevant! The best simple argument supporting this opinion can be found in Schotter (2005).

A very elaborate exposition in favor of the complete deregulation of natural gas, which is based on the ostensible presence of contestability, can be found in the work of Arthur S. DeVany and W. David Walls (1995). David Walls is a brilliant energy economist, while DeVany is versatile enough to write about the interplay of economics and Hollywood; however their book on gas is a little special. It’s the kind of book that a fictional hero (named Howard Rourke) of the very special author Ann Rand, might have written if he had lost his inclination to blow up low-income housing projects.

These two scholars claim contestability for the gas market, insisting that despite the beliefs of economics teachers such as myself, once gas sources and pipelines are deregulated to an extent that anyone with the urge can buy, sell, and transport gas, concepts like regulation and ‘natural monopolies’ could be viewed as nothing less than part of a socialistic plot against Mr and Ms Consumers. Let me note that these gentlemen completely ignored or forgot about storage, which is the kind of mistake that in certain real-world situations could result in some embarrassing questions being asked about what planet they were on. (See, e.g. Esnault (2003).) Moreover, they ignored or forgot that the theoretical economics of ‘lumpy investments’ is very different from the neo-classical dogma generally presented undergraduates.

More remarkable, they hold the opinion that for the most part the gas futures market in the US is “alive and well”, and its price discovery mechanism is “reliable and unbiased.” They support a few other ideas about the derivatives market that I might consider embracing if I were working the deregulation side of the street, and in addition was sufficiently dishonest or unenlightened to misrepresent the way that gas futures markets function in the real-world, as compared to the way they are pictured as operating in a pleasant seminar that you might attend at your local institutions of higher learning.

The written work on gas deregulation is not very extensive, and I have attempted to sum up my own views on this subject in a recent paper in the journal *Energy and Environment* (2005), however in that paper, as elsewhere, I refer to the research/opinions of two of the leading economic investigators of the gas market, Mr Ron Hopper and Professor David Teece.

Ron Hopper, who worked for 11 years at the US Federal Energy Regulatory Commission (FERC), and among many other high level employments was a special adviser to Cardoso E. Cuhna, a former Energy Commissioner in the EU, wrote in 1994 “As a former regulator, I am a strong believer that anytime you can avoid regulation and allow market forces to determine prices, this is the preferable option. However, I find the evidence strong that natural gas pipelines are characterised by structural characteristics which preclude market forces performing the necessary checks and balances on prices.”

David Teece is more concerned about the “chaotic” arrangements for delivery that often overwhelms pipeline transport controllers, and which can lead to congestion and imbalances. What we are talking about here are coordination problems that cannot be

solved (as in your favourite microeconomics text) by the price system working its magic in a market that features very large numbers of buyers and sellers. Among other things, Professor Teece has informed deregulation enthusiasts in Europe that restructuring in the US has “jeopardized the long-term security of supply and created various inefficiencies.”

He also has a message to deliver that every European “stakeholder” – as gas burning households and industrial users were called at the EU’s ‘Gas Summit’ in October, 2003 – should try to absorb. “While more flexible, a series of end-to-end short-term contracts are not a substitute for vertical integration, since the incentives of the parties are different, and contract terms can be renegotiated at the time of contract renewal. There is, therefore, no guarantee that specialized irreversible investments can be efficiently and competitively utilized.”

I have no doubt at all that where knowledge of the details of natural gas deregulation are concerned, Hopper and Teece are far ahead of me at the present time; however even if they and other up-market professionals believed that deregulation was the best idea in the world, I would still be against. This is because I am familiar with the thinking of deregulationists in both North America and Europe, and I find that it is out-of-step with the logic found in the brilliant intermediate microeconomic textbooks to which we now have access. In addition, where Europe is concerned, I happen to know that with both electricity and gas, the decision makers of the EU once entertained the thought that they could make deregulation work by strong-arm methods, by which I mean constructing additional pipelines (and power lines) for billions of dollars, and thereby obtaining what DeVany and Wall called “connected networks”. Personally, I prefer seeing this money going into high-quality health care and personal security, because as far as I can tell almost everyone who wants to buy gas and electricity has access to it, even though they may have to buy it from regulated monopolists.

### CONCLUDING REMARKS

If the deregulationists were able to convince the governments and voters of highly literate countries like Sweden and Norway that the most inexpensive electricity in the world would decline in price if they opened their borders, then anything can happen in the future where this indispensable input is concerned. The fact that the theory supporting natural gas and electricity deregulation is internally inconsistent, blatantly

unrelated to reality, grossly incomplete, and to a certain extent amateurish, is not likely to keep this particular wolf away from the door. As Joseph Goebbels might have concluded: The bigger the lie, the more effort people will put into believing it.

Of course, there are other factors that belong in this equation. As US Congressman Peter De Fazio pointed out: “Why do we need to go through such a radical, risk-taking experiment?” His answer could hardly be misinterpreted: “Because there are people who are going to make millions or billions.”

US Senator Byron Dorgan once said “I’ve had a belly full of being restructured and deregulated, only to find out that everybody else gets rich and the rest of the people lose their shirts,” (*Financial Times*, May, 2002), while one of the most distinguished members of the US Senate, Ernest Hollings, calls himself “a born-again regulator”. In examining the comments about this topic in EnergyPulse, there are not many taking the hardline pro-deregulation position of the gentleman who masterminded electricity deregulation in California – but who later jumped ship when the electricity price in San Diego escalated (and presumably his political future was endangered).

A colleague who is active on the engineering side of power plant construction has summed up perhaps the most important negative aspect of deregulation as follows: “Deregulation provides some short-term price cutting if imposed under a regime of significant over capacity. However, the lower price benefits will only last as long as the overcapacity – which in most markets has been relatively short.” Another observer taking a similar line was Kenneth Costello of the National Regulatory Research Institute in the US, who among other things states: “As someone who early on was a strong supporter of restructuring, I now seriously question whether at this time we are capable of doing it right” (2003). For an outstanding survey of deregulation costs around the world readers should examine Woo, King, Tishler, and Chow (2005). They “acknowledge *claims* of successful deregulation in Norway/Sweden”, and so do I, but I emphasize that the reality behind these claims is almost nonexistent..

“A complete deregulation of the electricity business is impossible”, Professor John Kay once told the readers of the *Financial Times*. I’m sure that this did not make him happy. The same evaluation is almost certainly true for gas. In fact, if I ever get an opportunity to rewrite the finance book mentioned at the beginning of this article, I will make sure to italicize that *the deregulation of electricity and gas is a malicious and expensive fad that has no place in a day and age when, in theory at least, it is so easy for both politicians and the people who elect them to distinguish between sense and nonsense.*

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