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Hayek and the Texas blackout

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In February 2021 Texas endured nearly five days of almost total blackout. Did this reflect a market failure or a regulatory failure?

This paper was stimulated by an exchange between Robert Bradley and Eric Schubert. Bradley said, "this is a planning failure … government failure writ large", that "the Texas blackout calls for abolition of ERCOT [the Electric Reliability Council of Texas] and repeal of state and federal laws governing electricity", and calls for "a true free-market order". Schubert countered that "What we have in ERCOT is the closest approximation to a free market that can be had, given the unavoidable reliability constraints associated with a meshed AC power grid."

The economist Hayek was adduced in support of both views. In general, Hayek argued for free markets, but not (as in the conventional static welfare economics approach) as a means of achieving efficient prices, outputs and methods of production. Hayek saw prices as decentralized signals providing information that enabled markets to coordinate participants, and embodying a dynamic "feedback process" enabling market participants gradually to learn and adjust their actions to better achieve their objectives. Competition is thus a rivalrous discovery process taking place over time.

We suggest here that the Texas approach to the electricity sector in general embodies competitive market principles that Hayek's analysis would have supported. Texas has committed to, and promoted, customer choice and competition rather than regulated monopoly. Perhaps only Alberta and Australia (the National Electricity Market or NEM) have slightly less regulated or more free-market forms of electricity sector than Texas.

Hayek's likely view of the specific role of the scarcity pricing mechanism, designed by the Public Utility Commission of Texas (PUCT) and implemented by ERCOT, is less clear. It is one of three possible mechanisms to encourage sufficient investment in capacity to meet demand. An "energy only" market with a cap on bids into the market could discourage necessary investment. A capacity mechanism could be prone to manipulation and unduly prescriptive. The Texas scarcity pricing mechanism seeks to

supplement the market by adding an operating reserve demand curve that increases wholesale prices, in the limit to a specified cap level, in this case $9,000/MWh, for a few hours during the year.

We conjecture that Hayek would have preferred an unrestricted competitive market, agreed with the case against a capacity mechanism, and seen advantage in a scarcity pricing mechanism but also had reservations about its lack of feedback and dependence on regulatory implementation. So it is an open question whether he would have seen it as the most preferable option available.

The Texas blackout does not suggest that the scarcity pricing mechanism failed to provide sufficient generating capacity. Rather, the main problem was that the available capacity could not be accessed because of failures to protect both gas supplies and electricity equipment against unexpectedly severe winter weather.

However, the actual implementation of the scarcity pricing approach in February has raised questions about regulatory competence to operate it. There were two novel features of the February events.

First, it caused particular distress to some customers, and featured in the media, because, for the first time, about 29,000 residential customers were taking power on a direct pass-through of wholesale prices. Many were surprised and shocked to be charged a monthly bill in the thousands of dollars. There were allegations of price gouging. A consequence was a legislative decision to ban direct pass-through of wholesale prices to residential customers. Hayek would have argued strongly against such a prohibition, believing that it would prevent a process of discovering more acceptable ways of protecting customers against such risks. One commentator suggested that the Texas power crisis “has set the move towards dynamic pricing back by a decade”.

Second, the scarcity pricing mechanism turned out to be more complex than it first seemed. There was indeed a High Cap of $9,000/MWh, but there was also provision for a “circuit-breaker”, whereby a Low Cap of $2,000/MWh would be implemented after the price had been at the High Cap level for sufficient time to remunerate peak generating plant. But the Low Cap was also geared to the natural gas price and at one time during the crisis was above the High Cap level. Nonetheless, it seems that the PUC and/or ERCOT kept the electricity price at the High Cap level for many hours or even days when it should have been reduced to a lower level. For Hayek, this failure of the mechanism to reflect market participants’ evolving and distributed knowledge of time and place would have been a serious defect.

We suggest exploring various ways to improve the Texas scarcity pricing mechanism. The aim would be to better discover the preferences and capabilities of the various market participants and to stimulate them to explore new ways of dealing with scarcity, making the operation of the scarcity pricing mechanism more responsive in real time to the ongoing market situation.

More can be done to empower demand response and enable load flexibility. Market rules that take advantage of increasing digitisation and automation around the edge of the distribution network could access the decentralised flexibility in price-responsive demand. Innovation in distributed resources, including batteries, behind-the-meter

generation, energy efficiency and demand response based on smart meters make increased demand participation in markets feasible. Financial practices can also improve scarcity situations, such as existing examples of customers and generating units making hedging arrangements and bilateral contracts. The time seems ripe for more local and individual experimentation, trying to discover what kinds and levels of security of supply each customer or customer group would prefer, what mixture of price and quantity limitations, what kinds and durations of advance warnings, what kinds of curtailment options, what mixture of automatic and voluntary response for what appliances and at what times of day, what kinds of rate design, and so on. The parameters of the mechanism should be reviewed more frequently: is it inconceivable that they could evolve continually over time? And be different for different parts of the system, or different local communities?

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