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Fuel poverty in Queensland: horizontal and vertical impacts of the 2022 energy crisis

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The war in Ukraine led to a global tightening of coal and gas markets, and the effects were felt as far away as Australia's National Electricity Market (NEM). During 2022, wholesale prices rose to $225/MWh, up from $75/MWh a year earlier. Household electricity tariff caps in the Queensland region of the NEM are determined annually and assume a prudent retailer builds up a hedge book over a 3-year period prior to real time. Consequently, Queensland households were completely shielded from the spot price dynamics during the 2022 energy market crisis. However, as each new year passes, low-cost hedges from prior periods are assumed to be replaced by current market conditions, and thus by 2023/24 the household electricity tariff will have risen sharply.

In this article, the incidence and depth of fuel poverty in the NEM's Queensland region is examined over three distinct periods, 2015/16, 2021/22 and 2023/24. These periods coincide with high (2015/16), low (2021/22) and expected high (2023/24) residential electricity tariffs. Three distinct fuel poverty policy settings are also analysed, namely, i). the old policy with a fixed 'concession payment' or income support to aged pensioners; ii). the new policy in which the same fixed payment is made to aged pensioners and low income households (i.e. qualifying through Australia's means-tested Healthcare Card), and iii). altering the payment from a fixed amount to a variable % of the household energy bill, holding the program cost constant.

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The subsequent analysis is therefore set out in an ostensibly three period model using microdata from the Australian Bureau of Statistics. Modelling is grounded firmly in standard welfare economics with a focus on horizontal and vertical efficiency. For clarity, horizontal efficiency refers to the extent to which a policy treats 'like households' the same way. By contrast, vertical efficiency refers to the incidence and depth of the (fuel) poverty problem, and the extent to which a policy provides greater support to households that need help the most.

Reforms made to Queensland's hardship policy (in 2016/17) had a profound effect on both horizontal and vertical efficiency. The horizontal accuracy of policy targeting vis-à-vis vulnerable households, those defined as 'Low Economic Resource', increased from 51% to 69%, while vertical efficiency increased from 31% to 35%. By any metric examined, the policy adjustments made by the Queensland Government prove to be welfare enhancing.

This change in policy and the rise in horizontal efficiency (from 51% to 69%) meant 73,000 households were successfully included. However, the cost of this was a rise in the 'inclusion error' by +53,000 households. But to be perfectly clear on this point, acknowledging budget constraints, it is generally more desirable to minimise under-coverage and 'exclusion error' than to minimise 'inclusion error'.

From a dynamic analysis perspective, the underlying ('pre-policy') level of fuel poverty was 8.1% of households in 2015/16. Falling tariffs reduced this to 6.8% in 2021/22. The current surge in electricity prices appears set to drive fuel poverty to at least 10.5% of households by 2023/24. Policy can reverse as much as 2.9 percentage points of these underlying numbers, noting effectiveness rises as the intensity of fuel poverty rises.

If there is any cause for reflection with the analysis, it is that despite having the world's most targeted tax and transfer system, horizontal targeting peaks at 69% of vulnerable households. Targeting of Queensland's vulnerable households cannot be materially improved without a non-trivial blowout in the inclusion error rate (which would adversely impair the scheme's fiscal efficiency or practical effectiveness). Furthermore, targeting at 69% contingent on enrolment. Households that have slipped through the cracks for whatever reason must therefore be targeted beyond the present policy (e.g. via other policies such as unemployment benefits, rental supplements, rooftop solar PV schemes for rental households etc).

Finally, current conditions associated with the 2022 energy crisis mean the magnitude of the fuel poverty problem in Queensland will increase. The forecast of 2023/24 conditions suggest underlying fuel poverty of 226,000 households or 10.5% of the household population. A sensitivity case which tests for a 30% tariff increase by 2023/24 rather than the 20% used suggests this could rise to 247,000 or 11.5% of households.

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