

Does Liberalisation cause more electricity blackouts? Evidence from a global study of newspaper reports

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The contribution of the present study is threefold. First, we analyse the causes of major and small blackouts and compare them across three major regions - Europe, South America and Asia - over the period 1998-2007. Second, we examine whether the statistical and expert report evidence from 69 countries behind the claim that liberalisation is associated with more blackouts. Third, we compare the sample means of blackout incidents in three continental regions before and after liberalisation.

Despite the interest of the media in reporting liberalisation as a major cause of blackouts, we do not find any statistically significant evidence of a connection between the frequency of small blackouts and the degree of sector liberalisation. The relations between liberalisation and regional factors are not statistically significant between the European and Latin American regions. However, Asia, which is the least liberalised region, shows more blackout incidents than Latin America. There is no evidence of a statistical difference in the mean of blackout incidents before and after liberalisation in the European and Asian regions. Latin American region is an exception. However, the sample size is too small to be deemed fully reliable and a note of caution is necessary in interpreting the results.

Comparing several large blackout incidents in the four continental regions, the scale of blackouts seems to be larger in developed economies such as the U.S., U.K., Sweden and Italy. This is due to the fact that the network coverage and interregional electricity trades are larger in US and European regions.

The probability of a blackout, in general, does not seem to be increasing. However, the scale of the worst incidents may be getting

larger, affecting more people. It is possible that the degree of liberalisation follows a U-shape relationship with blackouts, improving under basic forms of liberalisation (privatisation plus independent regulation) but leading to high blackout risk as markets become more developed.

Our findings indicate that large blackouts are caused by multiple contingencies at various locations with complex interactions. It is difficult to prevent or accurately predict the sequence of all these low probability events. Liberalisation itself does not directly contribute to the cause of blackout incidents. By its very nature, liberalisation creates markets which are continuously in a state of flux. Regulating quality of service, thus reducing the number of blackouts amidst the increasing liberalisation, is challenging but possible.

Our results are preliminary but highly suggestive. A larger and better quality dataset would improve the statistical reliability of the results. While, more detailed examination and comparison of individual blackout causes and effects should be carried out to enrich and complement the findings of this paper.

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