

# **Production Synergies and Cost Shocks: Hydropower Generation in Colombia**

**Michele FIORETTI**

*Abstract* :

Hydropower generation creates a trade-off between current and future energy production as a firm must choose when to release previously-stored resources. In the Colombian energy market, we find that suppliers shift production from hydro to fossil fuels in expectation of severe droughts. We explain this mechanism in terms of seasonal changes in the opportunity cost of water through a dynamic multi-unit auction model. Counterfactual experiments show that diversifying suppliers' portfolio of production technologies lowers market prices substantially. These long-run benefits exceed the potential increase in short-run market power from reallocating energy across hourly markets, which was shown to raise prices.