Energy demand, substitution and environmental taxation: An econometric analysis of eight subsectors of the Danish economy

This research contains an econometric analysis of energy demand in trade and industry which allows for substitution between electricity and other energy carriers when relative prices change. The presence of substitution suggests that taxation can be a means of changing the energy input mix in a more environmental-friendly direction. For eight subsectors of the Danish economy, time series (1966–2011) are modeled by means of partial Cointegrated VARs. Long-run demand relations are identified for all subsectors and robust price elasticities are supported in five cases. The results are used in a small impulse–response experiment which suggests a potential for taxation to induce substitution of electricity for fossil-based energy.