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**TITLE: REGIONAL INFLATION DYNAMICS USING SPACE-TIME MODELS**

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**ABSTRACT:**

This paper explains the heterogeneity of inflation dynamics at the regional and product level. It introduces two novel features with respect to previous literature: the use of space-time models that allow for a simultaneous estimate of the transmission of different types of shocks through space and time; and evidence for emerging markets. In particular, the sample used covers 98 monthly commodity prices for 23 regions of Chile in 2004-2006. The annual inflation rate of a given commodity in each Chilean region is modelled as a function of the neighbours' inflation rate, the principal common factor for that commodity, and the aggregate Chilean inflation rate. The neighbour's inflation rate provides a source of spatial heterogeneity in the model. For simplicity, it is assumed that only adjacent regions are neighbours. On the other hand, time heterogeneity is introduced by adding a one-period lag for all variables, including the dependent variable. Preliminary estimation results show that space-dependency is found in 80% of the commodities, whilst the common factor determines inflation for only 10% of them. The common factor is important in a very small number of products that are homogeneous, relatively expensive and easily transportable. The finding that neighbours matter more than common factors justifies the introduction of spatially lagged variables in models of determination of regional inflation.