

Estimating Regional Freight Movement in Australia Using Commodity Flows and Input-Output Coefficients

Topic: Input-output analysis for policy making 2

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Abstract

Understanding why and where freight moves is critical for transport infrastructure investment and land use planning, and ultimately for the development of logistic policies that boost the economic performance of regional Australia. However, estimating and projecting regional freight movements by transport modes in Australia is a largely unsolved issue. Traditional methods involving traffic surveys impose a burden upon industry and have proven to be unreliable sources of data as a result. Also, using statistical projection based on observed freight movements fail because they do not establish relationships between the generation of traffic and possible explanatory variables.

Freight is a derived demand. It moves to satisfy demand (consumption by households and business) from points of supply (production). Consequently, estimates of freight movement should not merely focus on the movement event, but should take into account the underlying economic drivers behind household/industrial consumption and industrial production. This paper first provides an overview of the basic issue, the contributions of empirical literature and the modelling approaches used until now. A commodity-based framework utilising commodity flow surveys and input-output coefficients is then proposed to illustrate how that might be applied in an Australian context. The proposed commodity-based framework has the potential to capture the fundamental economic mechanisms that drive freight movement and can be easily adapted to multimodal analysis in conjunction with other sub-models for the mode choice process.