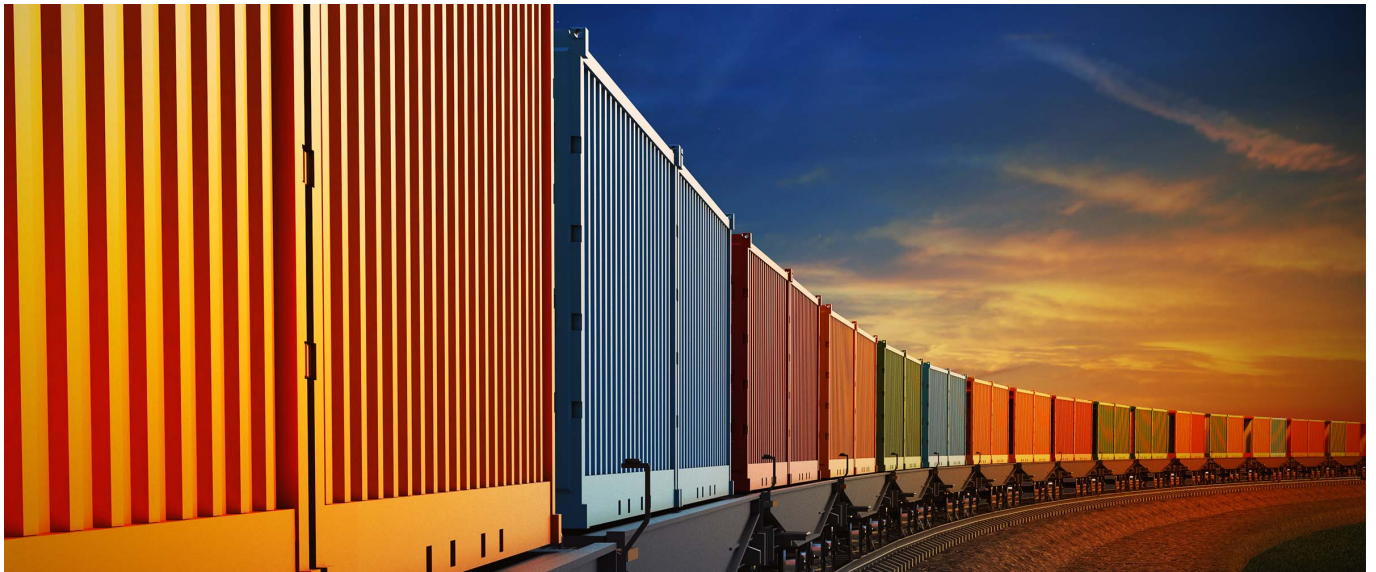


Driving the Train: A Macro-Based Framework for Commodity Forecasting



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By Brian Alstadt and Jeff Coughlin, EDR Group (now EBP), paper presented at the Transportation Research Board Annual Meeting

Patterns of freight movement are the result of economic exchange. That is, at the infrastructure level, demand by vehicle and commodity type is fundamentally driven by buying and selling activities along complex global supply chains. And yet, commodity forecasting techniques used in freight plans and port studies frequently ignore these broad drivers. The fundamental thesis of this paper is that the macro level – the global macroeconomic perspective – is increasingly important to making reasonable freight projections at the micro level – the infrastructure level. This paper, therefore, has two goals. First, we briefly review the state of the practice in freight forecasting, ultimately concluding that the macro level is noticeably absent in the majority of forecasting methods and reviewed studies. Second, recognizing this gap, we present a method of generating county-level commodity forecasts that embody macro drivers and trends. Specifically, our approach ties together three critical pieces of information: (1) a county-based social-accounting structure representing detailed factors of economic supply and demand, (2) a set of domestic macroeconomic forecasts providing future industry-by-industry production trends that recognizes spatial growth patterns, changing technology, relative industry growth, and broad forces affecting final demand, and (3) a forecast of US international trade recognizing differential economic growth of trading partners as well as pressures from international competition and currency fluctuations. The result of this methodology is forecasted county-level trade flows (in dollar terms) that are analytically (not statistically) tied to macroeconomic growth trends. These forecasts can be used alone for a sketch or policy-level analysis, or they can be combined with meso- and micro-level information and models for comprehensive freight forecasting at the infrastructure level. In particular, the method allows for the design of broad domestic and international growth scenarios and then estimates how those scenarios re-shape inter-regional and interindustry buying/selling patterns within the US. The method presented here is being implemented in the Transportation Economic Development Impact System (TREDIS).

Contact Persons