

Global economy and intermodal transport essay samples

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Introduction: Intermodal transportation can be thought of as a process for transporting freight and passengers by means of interconnected networks, involving various combinations of modes of transportation, in which all the components are seamlessly linked and efficiently combined. Intermodal transportation is rapidly gaining acceptance as an integral component of conducting business in an increasingly competitive and interdependent global economy.

Global Importance: The United States of Code with respect to transportation states: " It is the policy of US Government to develop a National Intermodal Transportation System that is economically efficient and environmentally sound, provides the foundation for the United States to compete in the Global economy and will move individuals and property in an energy efficient way. The National Intermodal Transportation System shall consist of all forms of transportation in a unified, interconnected manner, including the transportation system of the failure, to reduce energy consumption and air pollution and supporting the United States = pre-eminent position in international commerce".

Evolution of Trade Corridors: The Globalisation of trade has resulted in dramatic changes in the domestic freight corridors that support international commerce. For ex. increased trade with China and the Pacific Rim has led to the development of enhanced east-west transportation infrastructure. These statements define intermodal transportation as a macroeconomic concept, because an effective transportation system is a vital factor in assuring the

efficiency of an economic system as a whole. Moreover, intermodal transportation is an important socio-economic phenomenon, it implies the benefits of intermodal transportation have to be evaluated at the macroeconomic level, or at the regional level, involving all elements of the system that gain having a more efficient transportation network in place.

Role of Supply Chains: The creation of far-flung supply chain, arising from the need to access global supply networks and markets, has significantly increased the importance of transportation services. The need to link distant markets through seamless commercial networks will lead to increased demands for international transportation service providers. Thus the supply chain is often referred to as the new economic unit of competition.

The Need for Multi-modal Transportation Systems: The advantages of containerization have far outweighed its drawbacks, transforming the global freight transport system and along with it the global economy. It enables to understand why road transport is usually used for short distances (from 500 to 750 km), railway transport for average distances and maritime transport for long distances (about 750 km). Variations of modal choice according to the geographical setting are observed but these figures tend to show a growth of the range of trucking. Another phenomenon associated with global trade is the ever-increasing containerization of freight, they are also safe and the key benefit is that it becomes possible to quickly and inexpensively transfer it from ship to rail to truck, without unloading the contents of container itself. As imports and exports continue to increase in the relative importance to global GDP, the need for intermodal container distribution hubs capable of supporting trucking, rail, air cargo, and potential inland

navigation service will increase. For ex. Goods transported using multiple models increased by 31.2 % in terms of value and 6.8% in terms of ton-miles from 1993 to 1997. Without a question, a diversified regional economy cannot emerge without the support of modally diverse and inter connected transportation network.

Defining Economic benefits of Intermodal Transportation: Traditionally, the benefits of a transportation investment have been primarily evaluated through reduced travel / vehicle time and operation costs. However, according to Weisrod and Treyz (1998), such methods underestimate the total benefits of transportation investment by missing other important aspects of productivity enhancements. It is so because transportation does not have an intrinsic purpose in itself and is rather intended to enable other economic activities such as production, consumption, leisure and dissemination of knowledge to take place. Eventually, improvements in transportation reduce transportation costs. The immediate benefit of the reduction is the fall in total cost of production in an economic system under study which results in growth of the systems output. Transportation is a multiple service to multiple users. It appears that transportation networks have economies of scale. As discussed below, intermodal transportation magnifies these scale effects resulting in increasing returns to scale (IRS) of a specific nature. The phenomenon is known as a spill-over effect.

Improvements due to intermodal transportation are associated with the increased productivity of transportation services and a reduction in logistic costs. The former results in an increased volume of transportation per unit cost, while the latter directly reduces costs of commodity productions.

Expansion of the intermodal transportation network is associated with economies of scale and better accessibility to input and output markets. The overall impact of intermodal transportation can be divided into three elements - an increase in volume of transportation can lead to economies of density, transportation services are produced within transportation networks, expansion of a transportation network.

The consequences of the increased transportation due to intermodal was traced in the short and long run. They are 1) fixed transportation network, 2) The manufactured good production function that productivity increases in volume of freight transportation at decreasing rate - an important feature of intermodal transportation, 3) Price of the manufactured good adjusts according to a linear downward-sloping demand curve which captures the assumption of monopolistic competition. 4) Price of transportation 5) Total costs of production include transportation costs, 6) maximizes profit.

Similarly, when optimal value of manufacturing labour was chosen, values of the following economic variables were calculated; (i) total output of the aggregate manufactured good; (ii) price of the good; (iii) total sales revenue; (iv) total production costs; (v) profit; (vi) overall productivity. Volume of transportation was then increased, and the optimization problem was repeated. Then the entire exercise was repeated for the long run simulation with variable manufacturing capital and labour.

Recommendations: The microeconomic simulation exercise showed that an increase in the volume of transportation with the existing transportation network has an impact on the overall productivity in both the short run and long-run. More specifically a 50% increase in the volume of transportation

resulted in a 21% increase in productivity in the short-run, and 26.3% increase in the long run. It is also worth mentioning that eventually all microeconomic indicators, such as total production of the aggregate manufactured good, total sales revenue, total costs and profit improved in both runs. More efficient transportation allowed the producer of the aggregate manufactured good to increase output and reduce labour input in the short-run, and slightly expand operations in the long-run. In terms of welfare economics, total surplus increased as well. It increased by 1.3% in the short-run and by 1.5% in the long-run. The increase includes a 3.1% increase in consumer surplus in the short-run and a 3.6% increase in the long run as well as a 0.4% increase in producer surplus in the short run and a 0.52% increase in the long-run. This means that eventually consumers benefit more than producers from having an effective intermodal transportation in place.

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Annexure 1:

Definitions:

The transportation industry consists of five primary modes—shipping, trucking, rail, air, and pipeline—that move various combinations of cargo and passengers.

Shipping: Shipping generally focuses on ocean transport, dominated by companies like American President Lines, and inland waterway and domestic shipping lines that operate barges and smaller vessels.

Trucking: The trucking sector includes both full truckload carriers (TL) and less than truckload (LTL) carriers that using a hub and spoke distribution system. There are over 650, 000 trucking companies in the United States, 80 percent of which own 6 trucks or less.

Rail: The railroad sector encompasses both freight and passenger railroads. Amtrak provides nationwide passenger service while numerous public and private lines provide inter-city and intra-city commuter service.

Air: Air transportation includes legacy carriers such as Delta Airline, low cost carriers (LCCs) such as JetBlue, United Parcel Service.

Pipeline: A robust pipeline system safely and efficiently transports the bulk of

petroleum products, natural gas, and chemicals throughout the United States.