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ANALYSIS OF THE QUESTION TO IMPOSE USER CHARGES ON INLAND WATERWAYS WITH RESPECT TO AGRICULTURE

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Farmers in the upper midwest are located long distances from major export markets. Therefore, low per unit cost transportation outlets for their products are most essential for them to remain competitive. Presently, barge transportation is the least expensive per unit mode of transportation for grain and fertilizer. Both of these commodities are bulky and nonparishable, which are essential requirements for products to be shipped by barge.

At this time there are proposals to establish user charges for inland waterways, which will have an effect on the agricultural industry and the consumer. This paper will examine the history of user charge policy on inland waterways and the effects such charges will have not only on barge, but the rail and truck industries and analyze the factors to be considered in implementing such charges.

Upon examining the question of whether or not to impose user charges, the argument that resources are inefficiently allocated when user charges are not implemented is not relevant. Proponents of this argument believe that demand for waterway transportation is overstated, because the direct beneficiaries are not charged for the service of navigable waters. They fail to realize that certain social benefits are derived from government expenditures, such as lower cost consumer goods.

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In order to objectively look at the question of whether or not to impose user charges, one must examine the elasticity of demand for transportation services for each particular commodity. If the demand curve were fairly inelastic, then an increase in user fees would shift the supply curve to the left, but have little effect on the quantity transported.[1] In this case, supply is the amount of barges the industry will supply at a given price.

This is demonstrated in appendix (A). Line DD represents an inelastic demand curve with supply at line S_1S_1. If user charges were implemented, the supply curve would shift back to line S_2S_2. Total quantity demanded is unchanged. Therefore, the river industry is not hurt.

With an elastic demand curve, represented by line D in appendix (B), a price increase would have a negative effect on total quantity output. This is shown by the supply curve shifting left from line S_1S_1 to line S_2S_2. In this case, total quantity demanded dropped from point Q_1 to point Q_2. The result, in this case, is less business for the inland waterway industry.

The question is, will the social benefits exceed the social cost from a shift to the left in the supply curve? This question can not be answered unless one knows the elastisity of supply and demand for transportation of the commodity being shipped.

There are countless supply curves that can be brought about by different degrees in the amount and kind of user charge imposed on the barge industry. Special taxes, such as user charges, to achieve the most socially desirable output, are accepted tools in

today's society and should be used. The exact kind of user charge and the amount will be decided by Congress. Research in this area needs to be done at this time to aid Congress in their decision.

One reason why barge transportation is the least expensive mode of transportation is because the waterways are improved and maintained through government subsidies.

Free waterways transportation goes back to colonial times. Many people, during this era, were concerned about restrictions individual states could put on waterways, (i.e., Maryland merchants were concerned about Virginia's ability to restrict ships going to the lower Chesepaeke Bay).[2] This concern brought about the Northwest Ordinance of 1787 which laid down the policy of free waterways. It guaranteed freedom of navigable waters leading into the Mississippi and St. Lawrence from any taxes or duties.[3]

In the first half of the 19th century, a great deal of work on waterways was done by the individual states. When the railroad became of age, the inland waterway industry was hurt. Local and state governments, who were charging tolls in many cases, could no longer meet the cost of maintaining canals and rivers for navigation. The Federal Government took these projects over. In 1882 Congress enacted a toll-free navigation policy for federally provided inland waterways.[2]

This federal funding helped meet several objectives, including: defeating sectionalism and internal trade barriers, helping further westward expansion, providing low-cost transportation for a growing economy and maintaining competition for other modes of transportation.[3]

Opponents of cost sharing have construed the government policies of "Forever Free" waterway transportation to mean that all improvements and maintenance of waterways should be paid for by the taxpayer. Most historians and many private and government officials view this as prohibiting private control over waterways.[2]

There are many indications that user charges will be initiated in the near future. Every president since 1940 has proposed cost sharing for inland waterways.[2] Secretary of Transportation, Claude S. Bringar, in May of 1972 issued a report setting forth principles to guide DOT (Department of Transportation) in formulating national transportation policy.[2] The report stated:

> when federal expenditures are used to finance transportation investment or operations, these expenditures should be recovered from the users and other beneficiaries in a manner that is appropriate to the degree of benefits received, unless widely accepted national policy directs otherwise. The lack of user charges or cost sharing on the inland waterways that have been developed and are maintained with federal funds is not consistant with this policy.

More recently, Senator Pete V. Domenici, Republican, New Mexico, sponsored and the Senate passed, an amendment to Bill H.R. 5885. This amendment authorized the implementation of user taxes to recover 100 percent of the federal funds spent for improvements and maintenance of the waterways, based on a ten-year plan.

The Domenici amendment has not been passed by the House, but Bill H.R. 5885 has been. This bill gives authorization to build a

new Lock and Dam 26 on the Mississippi River at Alton, Illinois. President Jimmy Carter has threatened to veto Bill H.R. 5885 if the Domenici amendment is not attached when it reaches his desk. Therefore, in all liklihood, the Domenici amendment will pass the House.

The implementation of user charges or cost sharing will not be without consequence to the upper midwest farmer. He produces 45 percent of the grain exports, 52 percent of the soybean exports, and 8 percent of the wheat exports.[4] The cheapest mode of transportation for these commodities is by water to New Orleans, where they are exported to foreign markets. These same farmers depend on the Mississippi River system for transportation of 41 percent of their fertilizer.[5]

Grain and fertilizer are high in bulk relative to their value and must be transported great distances to and from the upper midwest states. Consequently, a small increase in freight has a large impact on grain and fertilizer prices.[4]

Food generally has an inelastic demand; therefore, in the short run, a price increase in transportation is primarily absorbed by the farmer in lower prices. Over time this will result in reduced production, which will lead to increased prices. Ultimately, in the long run, both the farmer and consumer share the cost of the price increase. The amount each shares is determined by the relative elastisity of supply and demand for the commodity being shipped.

At first glance it would appear that social cost would outweight benefits if user charges of any kind for agriculture

commodities were implemented. We can not only look at the cost conditions the agriculture industry and consumers would face, for there are external economics or diseconomics that effect the total social picture. Policy makers must find the social optimum level of output for society as a whole and not the private industries directly affected.[1]

The cost of maintaining competition within the transportation industry needs to be considered. Regional monopolization can result if competition is not maintained, which could lead to poor service and high rates. At this time, the rail industry is at a disadvantage to the barge industry.

Safety records vary a great deal between rail and barge. Presently, rail transportation cost society more in terms of the safety and well being of its citizens than barge transportation.

The opportunity cost of the right-of-way for the rail transportation mode and congestion of rail cars in crowded cities must also be considered.

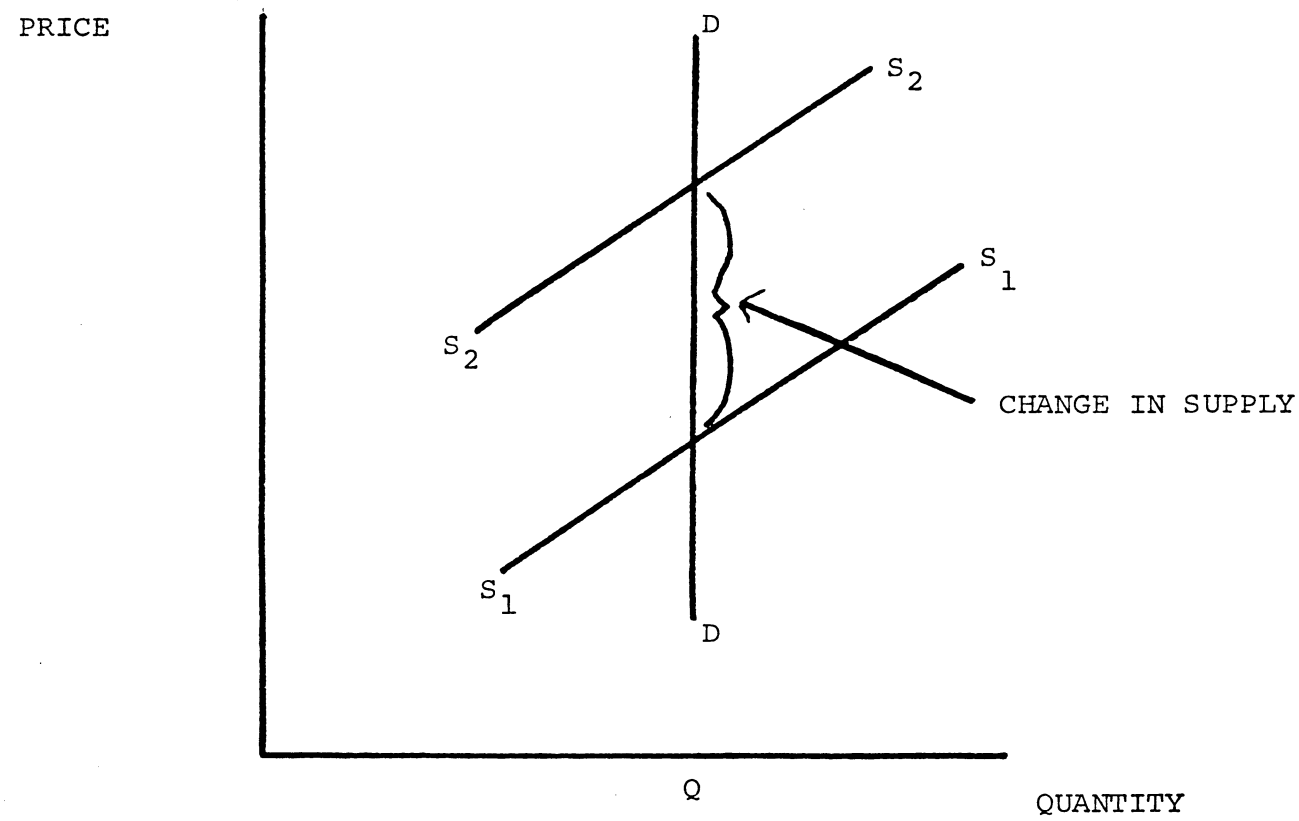
In light of our current energy problems, energy consumption should be a prime consideration. Consumption of energy varies a great deal from mode to mode. To move one ton mile one mile, barges use 500 BTU's, rail 750 BTU's and trucks 2,400 BTU's. This means that for grain and fertilizer, trucks should be used for the short haul, rail cars for longer hauls, and barges on inland waterways whenever possible.[4]

Also along the lines of energy, an open 100 ton railroad hopper car can carry 3.4 tons of cargo per one ton of steel. A 1,500 ton barge can carry 5.5 tons of cargo to one ton of steel.

This amounts to a 61 percent greater cargo capacity per ton of steel for barge transportation. Raw materials and the energy needed to product steel are thereby saved with barge transportation.

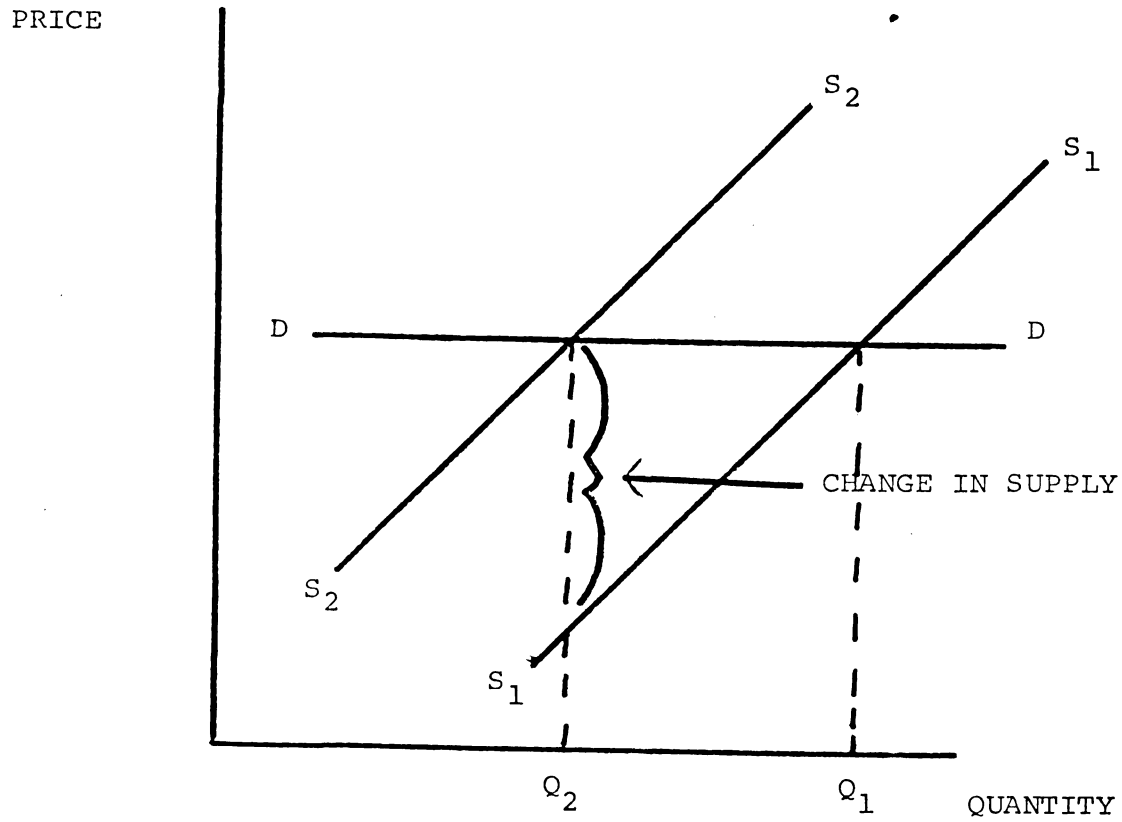
The social optimum for transportation must be strived for. This can be done by imposing special taxes where imperfections in the market are apparent. Railroads presently are at a disadvantage to barges, but policy makers must consider many other aspects such as: safety records, impact on regional as well as national economy, and energy consumption before deciding what rate to set on users of our inland waterways.

(A) Impact of User Changes On Quantity
Inelastic Supply Curve



(B) Impact of User Changes on Quantity

Elastic Demand Curve



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