

REGULATIONS AND POLICIES AFFECTING TRANSPORT DEVELOPMENT

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Introduction

This paper discusses the objectives and effects of regulations and policies pertaining to the transport and agricultural sectors in developing countries under six broad classes, i.e. rate regulation, entry restrictions, capacity restrictions, input restrictions, transport subsidies, and agricultural policies. The agricultural sector is included since agriculture accounts for 37% of gross domestic products and involves over 70% of the labor force in most developing countries. The effects of these regulations and policies are primarily assessed in terms of impact on transport development. Specific recommendations based on this assessment are made.

Rate Regulation

Rate regulation exists in many developing countries. It consists of either a ceiling or a floor to free market prices. The distinction between maximum and minimum rate regulation is useful since they are based on different arguments in favor of them. In practice we also encounter fixed tariffs not permitting any deviation in either direction, and bracket or fork tariffs which allow prices to vary only within a prescribed margin. The following paragraphs only describe maximum and minimum rates, since the pros and cons of these rates also apply to fixed and bracket rates.

Traditional arguments in favor of maximum rates are based on the belief that free market prices are excessive either due to monopolistic elements in the market or due to temporary deficiencies in supply. Monopolistic elements are not likely to occur if quantitative entry restrictions do not exist. If these restrictions exist, the appropriate policy would be to relax them (see Entry Restrictions) rather than to introduce maximum rates.

Temporary deficiencies in the supply of transport services occur due to temporary peaks in demand as, for instance, in countries with two or three major export crops with harvest times partly overlapping (e.g. cotton and coffee). Temporary peaks in demand do result in relatively high prices. Maximum rates are, however, not recommended unless it has been demonstrated that the adaptation of prices to prevailing scarcities is more harmful than the effects of these rates. These effects would be excessive deterioration of quality, especially delays, and/or shortages requiring rationing with its attendant inefficiencies and inequities. Problems may particularly arise if maximum rates do not cover costs of operation. For instance in Zambia, where the government establishes freight rates for the transport of maize, the main staple food, serious problems have resulted in the collection of maize, since rates of short distance operations do not cover costs of operations. As a result the government is importing maize, while maize is uncollected and deteriorating in some of Zambia maize producing areas.

Maximum rates are sometimes advocated as an instrument of anti-inflationary policy. Such arguments fail to distinguish between a continuous rise in the general price level, i.e. inflation, and a one-time rise in a specific price. With the possible exception of the special case of scheduled carriers, maximum rates are not recommended since they lead to under investment in peak-load capacity which requires additional correctional measures, and a deterioration of transport services during periods of peak demand. In addition, maximum rates are expensive and difficult to control. Governments of developing countries are well advised to only use their limited resources for the control of important matters such as traffic safety and axle loads.

Based on arguments of the imperfections of the scheduled carrier market and/or social objectives, rates of scheduled carriers, particularly bus services, are frequently regulated. In developing countries, scheduled carriers often tend to be either monopolistic or oligopolistic in their sub markets. Allowing competition from unscheduled carriers may, particularly in case of restrictive regulation of competitors, not prevent scheduled carriers from practicing some rate discrimination. As long as monopolistic or oligopolistic market conditions prevail, rate control may be required. However, governments are encouraged to involve private operators in the provision of scheduled carrier services by obtaining bids for such provision for a period of three to five years, and entering into a contract with the lowest qualified bidder.

Finally it is noted that maximum rates are sometimes used as an instrument of regional development policy. In other words, maximum rates to and within depressed areas are intended to stimulate economic development in these regions. The success of such a strategy is doubtful since the maximum rates may retard the depressed region's development by reducing its natural economic protection against competition from more advanced regions in the country. In addition, practice has shown that maximum rates can result in secondary distortions. For instance, competitive relations among road and rail transport may be affected. Policy instruments such as tax privileges and/or subsidies for investment or employment in depressed areas are preferred to maximum rates since they are less likely to result in secondary distortions.

The principal reason advanced for minimum rate regulation is the protection of small operators who may not be able to determine costs of operations. Minimum rates are, however, impractical since demand for transport services is highly variable over time, and, therefore, they would have to be rather complex to avoid economic inefficiencies resulting from an inadequately differentiated system of these prices. Minimum rates can easily be too high at some times and, as a consequence, result in inefficient underutilization of capacity, and/or induce unnecessary, additional capacity. Even with a restrictive regulation of investment, minimum rates do not make sense, since the market will push prices up due to the ensuing scarcity of capacity.

Minimum rates may also induce the overexpansion of transport on own-account, which cannot be subjected to minimum prices. An own-account operator is only involved in the movement of goods which he owns or produces. It is noted that minimum rates fail to protect the small

operators in situations where they are established regardless of distance covered and/or conditions of the road. To protect small operators, government publication of recommended rate brackets reflecting, inter alia, distance covered, road conditions, and nature of goods transported, rather than minimum rate regulation, is suggested.

Entry Restrictions

Entry into the transport industry is often restricted in developing countries. These restrictions may be qualitative or quantitative in nature. Qualitative entry restrictions establish certain minimum standards for the personal qualifications of the operator and are primarily designed to prevent unsuccessful ventures by those who have insufficient knowledge of the road transport industry. Such ventures would not be in the interest of the public. Qualitative restrictions may consist of moral qualifications such as the absence of a criminal record, professional qualifications such as sufficient knowledge of the transport industry, and/or financial qualifications such as adequate involvement of the carrier's own capital.

For own-account operators it is hard to justify the administrative costs required for qualitative entry conditions since the manner in which a firm or individual organizes his own transport requirements is only one link in the production process. Moral qualifications do not appear to make sense since imposing penalties by the courts as part of the original conviction itself is preferred. It is doubtful whether financial restrictions are effective since the licensee can withdraw his capital from the road transport business as soon as a license has been obtained. Professional qualifications may be worth the administrative costs to avoid losses resulting from individual errors. However, there is a danger of standards being manipulated for regulatory purposes.

Quantitative entry restrictions assign operating rights for specific routes, regions, commodity classes, etc. They do not regulate the number of vehicles to be used by a licensed carrier. It is therefore a misconception that quantitative entry restrictions, which particularly exist in many francophone African countries, prevent "over-investment." Quantitative restrictions are not recommended since the restricted validity of license prevents

- (i) efficient, complementary operation on routes or in regions for which a firm's or individual's license is not valid,
- (ii) capacity utilization on the backhaul for commodities other than those for which the carrier is licensed, and/or
- (iii) temporary excess capacity in one sub-market from being utilized in other sub-markets.

As a consequence, quantitative restrictions tend to result in overcapacity. Items (ii) and (iii) lead the present author to advocate that governments should allow own-account operators to transport goods not owned or produced by them.

Quantitative entry restrictions are normally imposed by governments. However, they can also be introduced by local, private interest groups. The smaller the group, the more effective it is. The establishment of freight bureaus is recommended to break such monopolistic

powers of small interest groups. The purpose of a freight bureau would be to market transport services by acting as an agent between clients and truck owners. Its services should be open to everyone. To enhance utilization of freight bureaus they should provide better services to clients than arrangements existing with interest groups. These services may, for instance, include assistance with freight insurance, handling of paper work, arrangements for return loads, banking, supply of spare parts, and maintenance facilities. Freight bureaus operating on the basis of these principles exist, for instance, in Nigeria. Such bureaus stimulate competition in the supply of transport services, resulting in better vehicle utilization and lower freight rates.

In the past, some governments of countries established freight bureaus which favored state owned and parastatal trucking companies (e.g. Tunisia) or which were used to enforce official tariffs and/or to collect transport statistics and/or fees (e.g.. Ivory Coast). Truckers were required to visit these freight bureaus for each load transported. Naturally such freight bureaus have not been successful. In Tunisia and the Ivory Coast these bureaus were boycotted by the private truckers and no longer exist. It is important that freight bureaus (i) give equal service to all truckers, (ii) not be used to collect fees and/or statistics, and (iii) not make use of their services mandatory. In addition, it is preferred to have the private sector organize the establishment of freight bureaus, possibly with short term government assistance.

Capacity Restrictions

These restrictions imply public control over expansion of vehicle capacity. Reasons advanced for capacity restrictions vary from preventing a drain on foreign exchange, preventing ill-judged investment decisions by carriers, to protection of railways and state-owned or parastatal trucking and bus companies, or the compensation of external distortions like inadequate road pricing. Capacity restrictions are either individual/firm-oriented, or market-oriented. A mixture of these two systems sometimes exists, when for instance, in a firm-oriented system the issuing of new licenses is suspended during a recession of demand.

Individual/firm-oriented systems apply to individuals or firms, who need a permit to procure a vehicle. Some countries like Tunisia have an extreme form of capacity restrictions since individuals and privately owned industries and commercial firms do not have a free choice in deciding on the loading capacity of a truck they wish to buy. For a farmer this capacity is determined by the size of irrigated and non-irrigated land and/or the number of cows and goats he owns. For a businessman and industrial or commercial firm the capacity is determined by the annual amount of tax he or the firm has paid in the year prior to the purchase of the vehicle. Naturally, such arbitrary measures are not recommended.

If a government insists on a restrictive policy (which is not advocated by the present author) carriers should be granted a license for additional capacity based on a demonstration that the investment can earn a return at least equal to the standard imposed by the licensing authority. In principle this return should equal the opportunity cost of capital prevailing in a country. Although an individual/firm-oriented capacity restriction is preferred to market-oriented restrictions and quantitative entry restrictions, its use is not recommended

since government authorities are normally not in a better position to judge a firm's future prospects than the carrier himself. The use of capacity restrictions to protect state-owned and parastatal transport companies has almost universally resulted in inefficient operations of these companies, which, as a consequence, require heavy subsidies. Realization of other objectives of individual/firm-oriented restrictions, such as the prevention of a drain on foreign exchange, can better be achieved by taxation. Unlike capacity restrictions, vehicles' sales taxes are normally free of discretionary administrative power inherent in the evaluation of prospective returns.

Market-oriented licensing systems are designed to control the expansion of total capacity, either in the entire road transport industry or in separate markets. They require a rationing scheme to distribute capacity among the individual applicants who always demand more capacity than is to be licensed. Market-oriented licensing systems, which are found in several developing countries, may be subdivided into quota systems and proof-of-need systems.

In practice, quota systems are the outcome of conflicting political pressures from different interest groups. Available capacity tends to be interpreted in terms of tons or seats regardless of differences in services. Sometimes available capacity involves the number of vehicles, which may produce a bias in favor of large vehicles and consequent inefficiencies. Given the fact that most developing countries lack adequate, statistical data on demand and available capacity and that modal split often depends on deliberate policy and/or unknown user preferences, it is of no surprise that quotas are based on political pressures rather than economic reasoning. They usually involve the established carriers' right to object against a license being granted on the basis that they already provide the needed services or plan to do so. Quota systems may result in a bias against new, dynamic firms wishing to use new marketing, production, and/or management systems. They may also lead to favoritism, graft and corruption. In short, they prevent a rational distribution of available criteria, or better yet, offsetting taxation, are preferred to quota systems. If a country wishes to maintain a quota system, the public sale of licenses, as practiced in Lebanon in the seventies, seems to be the most efficient and equitable method.

Proof-of-need systems involve separate decisions on individual applications. The total number of licenses is not established explicitly as in the quota systems. The separate decisions are made during public inquiries, in which all interested parties have the right to be represented. In Zambia, for instance, public inquiries are held twice a year. The applicant has to demonstrate that there is a market for his proposed services and that existing facilities are insufficient to satisfy demand. Competing carriers are given an opportunity to discredit the applicant's claims.

On surface, individual/firm-oriented systems appear similar to proof-of-need systems. The difference is, however, that in the latter systems the licensing authorities consider what competitors are already supplying together with existing capacity that could be used to supply the proposed services. The public inquiry is often cumbersome and costly both to the individual applicant and the licensing authority. Proof-of-need systems are, therefore, not recommended.

In some countries a dual system exists. That is, capacity restrictions apply to some types of vehicles and not to others. For instance, in Tanzania, anyone who has access to sufficient foreign exchange is allowed to import pick-up trucks while the procurement of other trucks is subject to authorization. In Tunisia, only the procurement of trucks with a total weight (including maximum load) of less than 3.5 tons, is not subject to any authorization. Such dual systems are likely to result in inefficiencies. For instance, Tunisian farmers who presently own two trucks with a total weight of less than 3.5 tons would have bought a larger truck instead, since this would enhance the efficiency of their operations. Those who could afford to buy a larger truck but not two small ones, and consequently own one small truck, complain of resulting transport delays during the harvest time, which, in case of perishable products, results in unnecessary losses. Finally, dual systems may give rise to a situation where long distance transport of commodities is primarily carried out by small trucks, while the use of medium or large sized trucks would have been more efficient.

Input Restrictions

Some countries like Tanzania and Zambia (before its recent introduction of foreign exchange auctioning) ration the supply of inputs like spare parts, tires and fuel as a means of correcting factor price distortions caused by their overvalued currencies. Input prices are controlled and often set far too low in the belief that low prices ensure low transport tariffs and rates. Naturally, the scarcity of supply restricts competition, which drives tariffs and rates up.

In Tanzania the rationing of inputs has created a flourishing black market in which spares were sold up to 5 times the official prices in late 1984. The existence of the black market reflects the fact that many consumers are willing to pay higher prices than the official ones. As Tanzania is not an economy isolated from neighboring economies, the unofficial prices will tend to be influenced by what the inputs could catch in, for example, Kenya and Burundi at the unofficial exchange rates. The government's policy of input rationing and fixing prices below what is required to clear the market, has an important consequence for the functioning of the industry. It means that two different operations are competing on unequal conditions. Inputs at official prices are generally more easily available to parastatal trucking companies and large private trucking companies than to the small, private truck owner who often lacks the influence to obtain them and, therefore has to rely on the black market. Consequently, his performance in terms of truck utilization is poor although he is generally very cost-conscious and knowledgeable about trucks. Since about 60% of all trucks are owned by small operators having up to 4 trucks, there is presently a significant excess capacity of trucks in Tanzania.

Rationing the supply of inputs is also expensive in terms of administrative costs and may lead to favoritism and corruption. It is, therefore, not recommended. The alternatives are either the rationing of import licenses (most developing countries import spare parts) by the use of auctions, or the introduction of offsetting taxes. Auctioning of import licenses for items pertaining to a specific sector, i.e. the transport sector, is difficult, and not necessarily desirable. However, auctioning of foreign exchange required to import any commodity is

feasible. In October, 1985, the Government of Zambia introduced a system where once per week a given amount of foreign exchange is auctioned. Anybody who needs foreign exchange to import no matter what, can participate in the auction. It is too early to assess the impact of the auctioning system; however, private trucking companies are reported to be pleased with it since they finally compete on an equal basis with parastatal companies who used to get the major share of imported inputs sold at official prices although their operations in terms of load factors and annual mileage are significantly below those of private trucking companies.

When a government is not ready to make the bold but economically sensible decision to auction foreign exchange 1) it can introduce offsetting taxes (import duties) as a means of correcting factor price distortions caused by its overvalued currency. This instrument offers the following advantages as compared to quantitative restrictive systems:

- (i) it tends to exclude the least efficient operators and to admit those who can achieve above average returns by special effort and/or ability,
- (ii) it does not impair the efficient utilization of capacity, because the tax does not restrict the carrier to a specific sub-market, and,
- (iii) it reduces the danger of arbitrary decision, favoritism, or corruption since no administrative discretion is involved.

It is noted, however, that a government is sometimes limited in its ability to offset taxes. For instance, the government of Niger cannot increase fuel taxes to desirable levels, since this would result in many carriers buying fuel in Nigeria, where prices are significantly below international prices.

Sometimes the supply of spare parts is limited due to monopolistic features rather than government rationing. That is, governments sometimes limit the number of authorizations granted to concessionaires to import vehicles and related spare parts. Typically only the importer of Mercedes Benz or Toyota vehicles is allowed to import related spare parts. Such a situation is undesirable since concessionaires may keep the supply "artificially" low to demand higher prices.

Transport Subsidies

In principle, subsidies may be in one or more of the following forms: (i) a budgetary transfer, (ii) exemption from the payment of taxes and/or the following of restrictive regulations applying to competitors ("hidden subsidies"), and (iii) a reduced price per unit of input such as a fuel subsidy. In general, transport subsidies are not recommended since they often result in inefficient and expensive transport services, due to vague public accountability, poor financial management, and lack of incentive to be efficient since compensatory sources of revenue are provided for loss-making activities. Particularly, the lack of an up-to-date maintenance of an accounting system providing information on the costs and earnings of the activities of the

organization receiving a subsidy, often leads to high tariffs. Subsidies in the form of a reduced price per unit of input may lead to excessive demand for the input.

In developing as well as developed countries, scheduled carriers, particularly bus services, are often assisted by restricting competition from unscheduled services in the same market. By creating a monopoly, the authorities enable the scheduled carrier to earn profits on some routes which are to be used to cross-subsidize nonprofitable but desirable services on other routes. Cross subsidization causes secondary distortions by raising the price of transport services on the profitable routes above their most efficient level. In addition, the creation of a monopoly must be supplemented with measures to ensure that the monopolistic position on the profitable routes is not abused.

The outright granting of public subsidies is preferred to cross-subsidization since it does not require the creation of monopoly positions and gives rise to smaller economic distortions because the burden of the corresponding general taxes is more widely spread. Scheduled carrier's services can often be made more cost-effective by inviting bids for routes with given frequency of services, in national and local newspapers. The invitation could state a monthly amount of subsidy to be paid to the award winner or lowest fare bidder. Alternatively, the bid could be the amount of subsidy the local government would have to pay the operator given a set fare. Awards for franchise operations should be given for periods of 3 to 5 years.

Agricultural Policies

Producer and consumer prices of major food crops are often centrally controlled by a government. The essential role played by a government in such a situation is to ensure the uniformity of prices established by it throughout the country by controlling farmgate prices, prices paid at the gates of processing mills, and wholesale, retail and consumer prices. Sometimes these prices have no relation to distances over which the food crops have to be transported, and road conditions. Consequently, benefits from improved road infrastructure accrue only to hauliers or individual truckowners. A situation whereby part of these benefits would accrue to farmers by improved farmgate prices of agricultural inputs and products is preferable, since this would stimulate farmers to produce more. Tanzania's pan-territorial pricing policy of the 'seventies and early eighties' has resulted in increased maize production in the western and southern regions, far away from the main markets, and consequent, unnecessary high costs of transport. Zambia's present pan-territorial pricing policy for maize and fertilizers has also resulted in increased maize production far away from major, urban consumption centers. Significant savings in transport costs and reductions in the use of hard-obtained foreign exchange to import rice could be realized in the Ivory Coast if it would abandon its present rice pricing policy.

Agricultural pricing policies may also result in too high a demand for the product, and, as a consequence, too high a demand for transport services to haul it. For instance, in Zambia where wheat prices were decontrolled late in 1984, the main problem lies with the condition that its local currency, the Kwacha, was until recently, overvalued. The low prices have resulted in too high a demand in general, and have led to a failure to exploit the comparative advantages that the

country has in wheat production. As a consequence imports have soared, exacting a strain not only on the foreign exchange situation but also on the railways bringing in imported wheat via Dar es Salaam and the Southern Route. In October 1985, the government started to auction foreign exchange which resulted in a strong devaluation of the Kwacha and lead to an increase of the average CIF price of a ton of imported maize from ZK655 during the first half of 1985 to ZK1414 during the end of October. Assuming that the auctioning will be continued in the future, there exists significant scope for reversing the past trend, and to fairly soon make the country largely self-sufficient in terms of wheat. For the transport sector the implications are that significant capacity will be released within the railways to be used for the transport of other commodities, such as maize. The shift towards local supplies will also mean that those facilities being provided as part of the ongoing Dar es Salaam port project to speed up wheat unloading, will play a much smaller role than originally envisaged.

What could a government do to avoid unnecessary high costs of transport and to ensure that producers, middlemen, truckers and consumers will benefit from road infrastructure improvements? Provided no monopolistic or monopsonistic powers exist, a pricing system dictated by market rather than government forces is the preferable solution. If a government wishes to safeguard the interests of consumers and producers of food crops, it should designate a state agency as (i) a buyer of last resort, by establishing floor prices at which it guarantees it will purchase food crops, and (ii) a seller of last resort, by establishing maximum consumer prices at which it will sell food crops. These floor prices should reflect cost of transportation.

Government-controlled agricultural, producer and consumer prices sometimes only change from one harvest period or year to the next. A system whereby prices are not fluctuating during a year provides no incentives for making use of the farmer's own storage capacity and his natural concern to attend to his own stored crop in the best possible manner. In an alternative marketing system where the price is allowed to vary to reflect current demand and supply conditions, some farmers would prefer to store their products in order to increase earnings by selling when the supply in the market is less, thereby evening out the flow.

In Tanzania, Tunisia and Zambia, the governments establish the prices of major foodcrops on an annual basis. Since these prices remain constant during the year, farmers are eager to sell their products as soon as possible after harvest. Consequently, almost all of the production of major food crops is released more or less at the same time. In terms of transport and storage, this means a formidable task for the parastatal crop authorities responsible for the marketing of food crops. This situation increases the economic costs of marketing to the country because of the need for transport capacity at peak periods.

FOOTNOTES

1. The author is only aware of two governments who made such a decision.