Towards a Theory of .Free Economic Zones

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In this paper I present a theory capable of analysing the welfare effects of a wide variety of institutional innovations which have in common that they involve the deregulation of, or the lowering of tariffs and taxes on, a range of economic activities that can be effectively separated from the regulated, taxed and protected industries of which they are a part. The partial deregulation of economic activities in this manner will be shown to lead to the expansion of trade, but also to involve potential costs of locational diversion of trade and negative externalities. In the context of the debate over deregulation the development of free economic zones can be seen as a practical compromise that generates powerful local interest groups pushing partial deregulation against the well-known in- terest groups opposing general deregulation.

In this study I could draw on a limited stock of published research, none of which deals directly with the problems considered to be central in this study, but which provides some useful institutional information.[1]

In the first part I provide a descriptive analysis of free economic zones. Part II presents the political economy and Part III the welfare effects of free economic zones. In Part IV I speculate about the possibility of using the free zone concept for the partial deregulation of other heavily regulated industries. The paper closes with a summary and conclusions.

Remark: Many people have helped me to refine the arguments and find empirical illustrations presented in this paper. I would like especially to thank Walter Block, John Chant, Max Carden, Steve Easton, Sid Fancy, John Helliwell and Lars Svensson. I also benefited from discussions during seminars at the Universities of Mannheim, Ziirich, St. Gallen and Pennsylvania; at the German Military Academy in Hamburg, UNIDO in Vienna, the Institut fiir Weltwirtschaft in Kiel, the HWWA-Institut ftir Wirtschaftsforschung in Hamburg and the Institute for International Economic Studies in Stockholm.

[1] The economics literature dealing with the free trade zone phenomenon is limited to three theoretical papers, Hamada [1974], Rodriguez [1976] and Hamilton and Svensson [1980], and the more institutionally oriented papers by Wall (1976], Fernstrom [1976), Ping [1979] and Diamond [1979]. This literature has failed to create a comprehensive theory of free trade zones capable of assessing their welfare effects and suggesting tests for empirical study.

I. Analytical Description of Free Economic Zones

Free Trade Zones

Free trade zones are areas separated from the surrounding host country's territory by fences or other barriers into which goods from abroad can be brought without quota restrictions or the payment of tariffs and excise taxes, and without being subjected to exchange controls, and to the majority of statistical reporting requirements and regulations aimed at the protection of consumers. Goods can be stored, used in manufacture, exhibited, assembled, sorted and sold in such zones in processes that are subject to the host country's normal laws governing environmental protection, workers' safety and employment conditions. Profits and wages earned in the zones are taxed at regular rates. Goods can be exported as freely as they are imported. However, when goods are brought into the zone's host country, they are subject to the normal import quotas, duties and excise taxes.

In practice free trade zones may be as small as a retail store in an airport or as large as the territory of Hong Kong and they may serve the simple function of warehousing or may contain a broad spectrum of industries. The essential feature of free trade zones for economic analysis is that they lower the host country's level of protection through the reduction of tariffs, quantitative barriers and administrative hindrances to trade [1].

For example, a firm imports goods into the free trade zone, processes or assembles and then exports them. The firm saves the duty on these imports and for these goods the host country's tariff revenues and there-

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[1] When a free trade zone consists of only a warehouse, it is often called simply a "bonded warehouse". In the United States in recent years factories, such as the one assembling Volkswagen automobiles in Pennsylvania, have been declared free trade zones. In some instances, as in Panama, the free trade zones consist of a large area containing industries of many types. There are also free trade zones devoted to retail stores only, as at many international airports and harbors. According to our definition, Hong Kong represents one very large free trade zone. The Hanseatic cities of Northern Europe and the Free Cities of Germany, similarly used to be large free trade zones.

In developing countries we find also so-called "industrial estates" and "export processing zones". They have all of the characteristics of free trade zones as described in the text but in addition, they often provide subsidized services and facilities to occupants. One such service of great value often provided is an agent that deals with the host country's bureaucracy in the name of the zone's occupants [UNIDO, 1980].

fore average tariff rates are lowered[1]. Many countries have rules under which certain goods imported are assessed at a certain rate, but if these same goods are embodied in a product that has a certain domestic value-added percentage, then they enter at a lower tariff rate. Activities in free trade zones often contribute this required percentage of domestic value added and therefore indirectly lead to the lowering of tariff rates[2]. When imports are subject to quota restrictions, then they can be stored in free trade zones and imported whenever quotas become available. As a result, the effective import restrictions implicit in a given quota are lowered.

Importers value highly other effective duty reducing benefits provided by free trade zone operations. For example, defective goods can be destroyed in the zone before a shipment is imported into the host country and duty is assessed. Free trade zones serve as show-rooms for customers[3]. In addition there are savings in costs of dealing with customs and tax authorities which for small firms often are relatively large.

At the end of 1979 there existed 344 tax-free trade zones, free ports and similar designated areas on 72 countries of the world. In the United States there were about 50 such zones and plans existed for the creation of many more. It was estimated that in 1979 about $100 billion of total world trade of $ 1,300 billion went through free trade zones. Forecasts are that by 1985 about $ 300 billion or 20 per cent of world trade would pass through such free trade zones [Diamond, 1979).

Free Banking Zones

Euro-Currency Banking. - It is now widely accepted that one of the primary causes of the rapid growth of Euro-, Asia- and Latin-American currency banking since the 1960s is the exemption which this type of

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[1] The savings for the exporter and therefore the practical reduction in duty burden from operating in the free trade zone usually is only equal to the opportunity cost of the duty paid since in most countries a system of duty drawbacks returns customs paid on all exported intermediate inputs. However, it should be noted that the economic effect of these savings for exporters may be quite significant since they are relevant to the export activity's value-added base. Therefore it is important to evaluate all of the reductions in protection in terms of the concept of effective protection as developed by Corden [1971].

[2] This characteristic of U.S. tax laws explains why several foreign automobile assembly plants in the United States have been made into free trade zones.

[3] In Hamburg oriental carpet dealers regularly take customers to their large warehouses in the duty free zone. In New York a free trade zone on a dock serves as an exhibition ground for sellers of machinery, to where customers can bring samples of goods for a demonstration of the processing capabilities of the equipment. Diamond [1979] provides an extensive list of benefits for exporters and importers located in free trade zones in a form useful for agents promoting a free trade zone. The sources of reduced operating costs noted here are merely samples designed to make the general point.

banking enjoys from the taxes implicit in minimum reserve requirements. That this is so can readily be seen by consideration of the following simplified example.

Consider a bank located in Montreal which pays interest on deposits at the annual rate of 8 per cent and therefore pays $8 on a $100 deposit. .Faced by an assumed 15 per cent reserve requirement, this bank can lend out only $85 of the deposit and if the loan rate is 10 per cent, it earns $8.50. Under these conditions, the $100 intermediation business brings the bank net operating revenue of $8.50 — $8 = $0.50. Assuming that operating costs for labor, etc. constitute $0.45, the before income tax net profit is $0.05 per $100 deposit.

Now assume that this bank opens a branch in London, England, and persuades its customers to do business there in return for a marginally higher deposit and marginally lower loan rate. For the sake of simplicity we assume that this margin is so small that in the present calculation it can be disregarded. Under these assumptions and remembering that there are no legally required reserves on foreign currency deposits for banks located in London, the net operating margin of the Montreal bank branch on a $100 deposit is $10 - $8 = $2, which is four times that the parent bank could earn in Montreal. If labor and other costs are the same $0.45 per $100 of intermediation in London as in Montreal, the London branch shows a before income tax net profit of $ 1.55. Shifting business from the taxed and regulated home base to the free banking zone in London therefore implies an increase in the bank's net profit margin of over 3,000 per cent[1]. Analogous increases in net profit margins are available to banks in most countries on deposits and loans made in foreign currencies.

The preceding example illustrates the strength of the incentives facing banks to enter the Euro- and other regional currency business and explains why this type of banking has grown from practically nothing in the 1960s to over $ 1,500 billion in 1980. For our purposes of analysis it is important to note that it involves a partial deregulation through the lowering of an implicit tax on a type of business that can be kept separate from the regular and regulated other business in two ways. First, the deregulation applies to business transacted in a geographically defined area, just like

[1] In fact, the spread between lending and borrowing rates in Euro-currency markets in individual currencies is narrower than that found in the currencies' home countries by an amount equal approximately to the implicit cost of the respective countries' reserve requirements. In effect, customers are reaping a large share of the benefits of the taxes saved. Portfolio balance considerations of banks, lenders and borrowers prevent perfect arbitrage between the rates in domestic and Euro-currency markets. However, the illustrative calculations are indicative of the strength of the incentives facing banks to escape domestic regulation, which persist as long as lending and borrowing spreads are determined in the domestic markets.

in the case of free trade zones discussed above, but with the important difference that in practice all of the rest of the world is the free economic zone.[1] Second, the deregulation applies to a certain type of business, namely foreign currency deposits, even though it may take place within a geographic territory where the banks' other business is fully regulated.

Free Banking Zone in New York. — In the year 1981, after many years· of negotiation, a free banking zone was opened up in New York [Cheng, 1981) and if it is successful, more such zones will be created in other U.S. centers of finance. The basic idea behind the establishment of these zones is the removal of reserve requirements on banks in order to induce the return to the United States of some of the business that has been lost to the rest of the world through Euro-currency banking. The problem faced in the establishment of these zones is how to prevent massive shifts of domestic business into them, which would produce serious inequities between ordinary banks and those operating in the zones. In addition, such shifts would raise the reserve-deposit multiplier and create problems for U.S. monetary policy. The solution to these problems adopted is that banks are freed from U.S. reserve requirements only on deposits in large denominations owned by others than U.S. residents. This particular method for the separation of deregulated from regulated business is likely to limit severely the growth of business in the U.S. free banking zones, though in the end their chances for success involve an empirical question which only actual operation of the zone can provide.[2]

Free Insurance Zone

Lloyds of London. — During the great wave of regulatory fervor in the postwar years all industrial countries have imposed increasingly more severe restrictions on the operation of insurance companies. During this period Lloyds of London grew rapidly because it constituted a haven free from regulation.

Lloyds has attracted mainly two types of business from other countries. First, there are the special risks for which there are few or no ex-

[1] Germany is the exception since that country's banking laws require the maintenance of reserves on deposits in all currency denominations, As a result, Germany harbors practically no Euro-currency banking business.

[2] It should be interesting to discover how enforceable is the foreign residence requirement in preventing shifts of domestic business into the zone, given the well-known ease with which funds can be funnelled through foreign branches and subsidiaries. Also, given the low cost of information transmission it is likely that new institutions can be developed which permit effective circumvention of the legislation restricting U.S. residents from use of the zone.

perience ratings, such as the cancellation of Olympic Games broadcast opportunities and the cancellation of computer leasing contracts. Second, there are the very large risks of insuring super-tankers and large-scale industrial projects. Lloyds has not attracted from other countries the standard fire, accident and life insurance business for which the local availability of agents is of paramount importance.

It is clear from the preceding description that an effective separation of regulated and deregulated insurance business has taken place in the world. Routine business involving large numbers of relatively small accounts has remained under the control of national regulatory authorities largely because transactions costs of dealing with Lloyds are too large. Special and very big risks, on the other hand, have been shifted to Lloyds either because in the case of special risks the advantages of deregulation are great or in the case of very large routine risks the transactions costs for the insured multinational enterprises are small.

The New York Free Insurance Zone. — In 1980 New York opened a free insurance zone [Decaminada, 1979; The Economist, 1979]. Similar zones may well be established in other U.S. cities. In the New York zone resident insurance companies can underwrite risks that require a minimum annual premium of $100,000 without obtaining the permission of regulatory authorities of the State of New York. In addition they can under- write many special risks which have been identified by the authorities and whose common characteristic is that regulators in the past have been unable to ascertain promptly and reliably that premiums charged and other conditions of the contract protect the consumer and assure viability of the underwriters. Because of the regulatory delays and costs such risks in the past have been insured by Lloyds.

The intent of the New York free insurance zone is clearly to return some of the business that has been lost to the deregulated environment abroad by offering similar deregulation to New York firms. But through the specification of the nature of deregulated business, an effective separation between regulated and deregulated sectors is assured. Some doubts have been raised about the likely success of the New York insurance deregulation experiment [The Economist, 1979] on the grounds that the success of Lloyds has. been due not only to a favorable regulatory environment but also to the special expertise and financial structure of the firm.[1] It remains to be seen how successful will be the New York free insurance zone in exploiting the benefits of deregulation and accumulating the required expertise.

1 Partners in Lloyds face unlimited personal liabilities

Free Gambling Zones

The State of Nevada constitutes a free gambling zone. It was created in 1931 when the sparse population of the state and its distance from centers of population amounted to the effective separation of markets. Only well-to-do people who could afford to travel to Nevada would be ex- posed to the risk of deregulation while the masses of ordinary citizens continued to be protected by the regulatory umbrella.

The establishment of gambling casinos in Atlantic City was approved and undertaken in the same spirit as Nevada's, though the strength of the possible discrimination between regulated and deregulated customers is much weaker. Still, in contrast with totally free gambling in New Jersey, limited free gambling in Atlantic City significantly reduces the exposure of ordinary citizens to the temptation of the activity. Already existing proposals for the establishment of other gambling centers in the United States suggest that if Atlantic City is successful, they will be established not in large urban centers but in relatively small resort centers where access by ordinary citizens is limited.

In Europe, where for a long time there has been less regulation of gambling than in the United States, big-time organized gambling through roulette and card games has been permitted only in casinos located in famous 19th century spas such as Baden-Baden and Monte Carlo frequented by royalty and gentry and where access is rather difficult for ordinary citizens. British gambling clubs require membership fees that represent a barrier to use by local residents of moderate means.

Free Enterprise Zones

It is widely accepted that the decay of city cores in Britain and the United States is due to a very significant degree to regulation of business, which affected especially small business and the employment it provided traditionally [Butler, 1980]. In Britain legislation has been passed that led to the designation of some depressed urban areas as Free Enterprise Zones. In these zones a number of burdensome types of regulation and taxation have been eliminated. The U.S. Congress is debating legislation that would permit the establishment of such zones in depressed U.S. cities.

The need to create effective separation between regulated and deregulated business has given rise to as yet unresolved problems in the formulation of the U.S. legislation and has led to problems with the British zones since discrimination in essence is based on geographic location. As a result, the borders of the zones create strong discontinuities. They have induced some business to move from outside the zone into it. In the process they have created a belt of depressed activity and real estate values around the zones. In addition, the zones can develop into tax havens for large firms. It remains to be seen whether it will be possible to create legislative mechanisms that allow the effective discriminatory deregulation and tax reductions to be channeled properly for the achievement of the stated objective of stimulating the establishment of *new* small enterprises without generating costly additional regulation.

II. The Political Economy of the Free Economic Zones

The preceding description of the types, characteristics and growth of free economic zones raises the question why they have been permitted to develop in the past when there was generally strong faith in the need for and ability of regulation to improve free market institutions. Furthermore, the question arises why they are growing so rapidly in number in recent years when, after widespread realization of the high cost of regulation, efforts to achieve general deregulation have been stalled? In this section I will provide provisional answers to these questions arguing first that free economic zones are an instrument for selective deregulation and second, that they generate powerful interest groups which assure political success.

Selectively Targeted Deregulation

Regulation is basically a blunt instrument. For example, foreign trade restrictions bring costs to all regions of a country while often benefiting only a few. This proposition holds in the case of tariffs on automobile components, which benefit an industry that is often concentrated regionally, but the tariffs raise the cost of automobiles and automobile assembly, harming the interests of other regions, including some which under free trade might have a comparative advantage in automobile assembly. Similarly, regulation often provides paternalistic protection for consumers whether they need it or not. For example, in the insurance underwriting business for large tankers, it is reasonable to assume that the buyer does not need the state's protection concerning rates charged and the fiscal soundness of the insurer, while there is a much stronger case for protecting the public from the sellers of life-insurance policies that use unethical selling techniques and invest customers' funds fraudulently or unwisely. Also, the case for protecting the uneducated and poor from the temptations of gambling is certainly greater than that for protecting the wealthy. [1]

[1] None of the above examples are to be interpreted as making an absolute case for regulation. I think that the argument about the need to protect the poor but not the rich from the temptations of gambling is paternalism of the worst sort since it is combined with elitism.

The preceding examples suffice to make the case that regulation is basically a blunt instrument that cannot readily be applied to meet the special requirements of regions and groups of people. Seen in the light of this characteristic of regulation it is clear that free economic zones represent an instrument for the selective application of deregulation, permitting in principle the development of an optimum pattern by regions and classes of customers.

However, free economic zones are a useful instrument for selective deregulation only if two conditions are met. First, there must be a need for it and second, it must be technically feasible to achieve a separation of the regulated and deregulated market. In the case of the examples cited above, these two criteria appear to be met, except in the case of free enterprise zones where it is not clear that it is technically feasible to limit deregulation to the economically relevant firms.

Interest Group Backing

It is well known that the deregulation of some U.S. industries has been stalled because the deregulation lowers the welfare of some firms and workers clearly and by a substantial amount so that it is worthwhile for them to form well-financed interest groups lobbying with politicians and presenting them with a credible threat of the loss of blocks of votes in case their industries are deregulated. The beneficiaries of the deregulation, on the other hand, usually are large in number and would gain very little each from deregulation. As a result, they have no incentives to form interest groups and lobby with politicians for deregulation. Consequently, even in cases where it is widely accepted that the sum of small benefits exceeds the large costs to a few, the political process of deregulation is often stalled.

The preceding model of the political economy of regulation, however, can be used to explain why in the case of industries where complete deregulation is stalled, partial deregulation through the creation of free economic zones has been accomplished successfully. The reason is simply that the free economic zones generate benefits sufficiently large and concentrated for some firms, workers and local governments that it is profitable for them to form interest groups for lobbying with politicians in favor of the zones. The costs created by the zones, on the other hand, tend to be small and diffuse and therefore do not generate strong interest groups and political opposition.

The preceding considerations can be illustrated by reference to a free trade zone. When the Volkswagen company considered establishing an assembly plant in Pennsylvania, local workers, small businesses and governments stood to benefit a great deal and they formed a powerful lobby that succeeded in obtaining legislation which granted free trade zone status to the VW assembly plant. The producers of automobile parts in Michigan whose level of protection was lowered through the free trade zone suffered only marginally and in ways which were difficult to establish quantitatively. If they tried to lobby against the Pennsylvania zone, they obviously did not succeed because they were unable to generate a credible voting threat.

In the case of the free banking and insurance zones the pattern of interest group pressures was even more in favor of their establishment because most of the firms in the zones are branches of existing U.S. firms, which expect no reduction in business done in the regulated sector in the United States and instead expect to gain at the expense of foreign firms and by bringing home business that had been lost to partial deregulation abroad. As foreigners have no votes in U.S. elections, opposition from these interests was ineffective and the main battle was in persuading domestic firms unable to open branches in the zone that the planned techniques of discrimination would be successful in preventing loss of business from the regulated sector[1].

III. Welfare Effects of Free Economic Zones

The creation of free economic zones raises welfare through the more selective application of regulation according to the requirements of different regions and groups of customers. In real terms, the deregulation lowers costs of protection and of transactions, permitting welfare gains through the expansion of trade and specialization. Free economic zones are likely to have dynamic effects on the supply of work, technology and entrepreneurship.

However, free economic zones also may reduce welfare through the locational diversion of trade and investment and through the generation of negative externalities. In addition, there are welfare effects of an indeterminate sign due to the redistribution of tax revenue between governmental jurisdictions.

Theoretically, the overall, net welfare effects of free economic zones are indeterminate. Only empirical studies can lead to estimates of net benefits and it is doubtful that some of the effects can ever be measured[2].

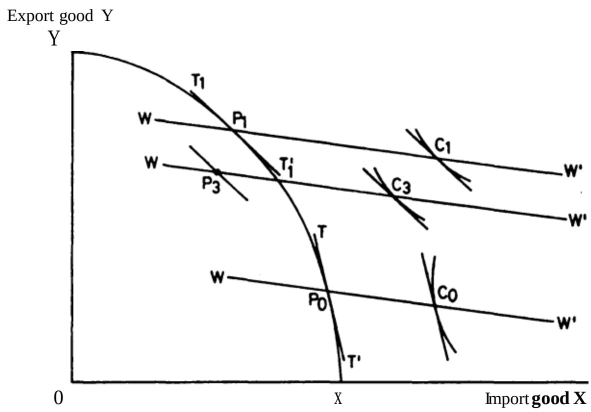
[1] The New York free banking zone was long delayed by opposition from U.S. banks which were prevented by federal law from opening branches in the zone and which feared that the zone would divert business away from them.

[1] Perhaps it will be possible to employ the methodology used in tbe empirical study of the effects of trade diversion and creation in connection with economic integration. In these studies externalities and tax effects have also been ignored or tre::lPd as residuals. Hodjera (1978], Johnson (1976] and Grubel (1980] have attempted cost benefit studies of regional free Euro-banking centers.

Real Economic Effects

As was shown above, the creation of a free trade zone amounts to the lowering of the level of protection of the host country. It is well known from the theory of international trade that such a lowering of protection leads to increased levels of trade and specialization, which in tum results in higher community welfare. This proposition is illustrated with the help of the standard Heckscher-Ohlin model in the figure, where the small home-country's import good X and export good Y are measured along the horizontal and vertical axes, respectively. In initial equilibrium production is at point P_0 on the production possibility locus XY, where the protection-distorted domestic relative price line TT' is tangent and the relative price of the traded good is equal to the marginal rate of transformation in production. Trade takes place along the world price line WW' and permits attainment of welfare level C_0, where the domestic price level is equal to the marginal rate of substitution for consumers.

Trade Creation and Locational Trade Diversion



The lowering of protection due to the creation of the free trade zone is assumed to result in the new domestic price ratio T_1T_1' with the new equilibrium output at P_1 and consumption at C_1 after trade at the unchanged world price WW'. The core of standard international trade theory consists of establishing rigorously that consumption point C_1 must imply a higher level of welfare than C_0. It follows therefore that if the creation of a free trade zone leads only to the lowering of protection and has no other effects, a small country must gain welfare through the increased specialization in production which exploits its comparative advantage. However, the lowering of protection through the creation of a free trade zone does have another effect which requires amendment of the standard model and results.

Locational Trade Diversion

The elimination of protection in the free trade zone may induce production to take place in an inefficient location, resulting in extra costs of production that lower the level of welfare below that which the country could attain if the same reduction in protection had been available uniformly to all firms regardless of location. Two examples may serve to illustrate this important point. First, when bank intermediation business is induced to shift from Montreal to London through the absence of the reserve requirement tax, several extra real costs of doing business are incurred because the London branch of the Montreal bank has to be staffed and supervised over great distances from the parent's headquarters. Lenders and borrowers incur extra costs of communication or travel or perhaps just legal complications by dealing in London rather than in Montreal, where by assumption in the absence of free banking in London they would have done their business at least cost. These added social costs of Euro-currency banking must be offset against the social gains which accrue because the smaller spread between lending and borrowing rates in London induces some extra lending and borrowing and makes capital markets more perfect. It should also be noted that the private incentives for doing business in London rather than Montreal remain in spite of these extra social costs, for otherwise the shift of the business would not take place.

As a second example consider the Swiss village of Nandans, which is located in a high valley between Switzerland and Austria. Because of difficult access from Switzerland in the 19th century this village was granted exemption from Swiss excise taxes and tariffs. In essence, it is a free trade zone which attracts much business through offering low prices especially in heavily taxed and protected gasoline and cosmetics. The economic waste created by this free trade zone is readily apparent as one envisages heavy gasoline trucks slowly lumbering up the steep mountain road to the village. These trucks are followed by long lines of private passenger cars. Once in the village the gasoline is transferred into the tanks of the passenger cars via the pumps of tax-exempt gas stations. After this transfer the cars and trucks return to the lowlands for regular, productive work. It is clear, that

the free trade zone induced business in Nandans is privately profitable, but that it involves a relatively substantial waste of real resources.

In terms of the model in the figure, the inefficiencies caused by the locational diversion of business are shown by production taking place at point P_3, which is inside the efficient frontier. While trade still takes place at the world price line WW', the point of consumption C_3 must necessarily be below C_1 because the only difference between the two situations is that C_1 is reached without the inefficiency cost of the locational diversion of business. Whether or not C_3 is on a higher indifference curve than C_0 is an empirical question that depends on the relative magnitude of the gains from trade creation and the losses due to the locational diversion of trade. However, it cannot be ruled out on logical grounds that because of locational diversions of trade free trade zones result in a net loss of welfare by the criteria of the standard trade model[1].

Defensive Deregulation

At this point of the analysis it is important to introduce a distinction between what might be called offensive and defensive free economic zone creation. When a free trade zone is created in a country we have the offensive case for which all of the preceding conclusions about trade creation and diversion are relevant. However, the creation of the free banking and insurance zones in New York involve a defensive act in the sense that they are a response to prior deregulation abroad in the form of Euro-currency banking and Lloyds of London, as described above. There- fore, these U.S. free zones reverse some of the locational diversion of trading that the prior deregulation had produced and they are more likely to be raising welfare than are the offensive zones.

Generally, the preceding analysis suggests that the costs of trade diversion are likely to be the smaller the more free economic zones there are. In the limit, the number of zones will be so large as to include all of the country's territory and in effect universal free trade is achieved with zero costs of trade diversion.

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[1] The results of the analysis focusing on the concepts of trade creation and locational trade diversion are strongly reminiscent of results obtained in the analysis of the effects of economic integration [Lipsey, 1960]. In fact, we have here simply another case of the second-best and reconfirmation of the basic principle that partial movement towards free competition does not necessarily result in greater welfare. However, the results of second-best policies are ultimately an empirical matter and in this context it may be useful to note that most studies of the effects of European integration concluded that trade expansion dominated by far trade diversion effects. However, only actual studies of free trade zones from this point of view can establish whether the beneficial effects of integration also prevail in the case of free trade zones. No such studies have been brought to my attention.

In this context it is worth noting that the "underground economy", which recently has become the object of much study [Feige, 1979; Mirus and Smith, 1981) is a form of free economic zone, which involves welfare gains and losses that are analogous to those of free economic zones j11st discussed. Deregulation that causes economic agents to leave the underground economy are defensive and can lead to a lowering of existing costs of locational diversion costs. Free gambling zones may well have this result if they induce gamblers and the suppliers of gambling services to give up their illegal activities, creating social savings in the form of less crime and corruption.

Capital Flows

Free economic zones generally, but free trade zones in developing countries especially, can give rise to capital flows which have potentially important welfare implications. As is well known, regulation and protection in many developing countries represent serious barriers to the inflow of capital, even if local labor productivity would otherwise make such investment profitable. The establishment of a free trade zone which removes these barriers can induce the inflow of capital which raises the productivity of local labor, may generate dynamic linkage effects and gives rise to income tax revenue from the profits of foreign firms, all of which translates into gains in welfare for the host country. At the same time, the owners of capital in the rest of the world gain since their private yields are increased.

The growth in world welfare caused by the more efficient global allocation of capital is in addition to that of the gains due to the more efficient allocation of given resources in each country discussed in the preceding section. However, as in the case of the effects involving given resources, the flow of capital can result in costs of locational diversion. For example, foreign capital which has located in the Philippines' Bataan free trade zone might have located elsewhere in Philippines if deregulation had been uniform for the whole country. If this is the case, the productivity of the capital is lower than it would have been if it had located in the most efficient place. In the extreme, if the foreign capital comes from a regu- lated environment, the true social productivity in that zone may be lower than what it was in its country of origin. Again, as in the case of the anal- ysis of the effects with given resources, the net welfare effects of capital flows induced by free economic zones on the host and home country are a function of the empirically determined relative effects of creation and diversion.

Dynamic Effects

All of the preceding arguments about the welfare effects of free economic zones are essentially static in the sense that they considered the results of induced changes within the analytical framework of given resource endowments, technology and the efforts of workers and entrepreneurs. This approach misses what in the longer run may be the most important source of benefits of free economic zones, the dynamic effects. While they are notoriously difficult to predict or even to identify, their importance was stressed in empirical studies of the effects of integration and they underlie the widespread interest in supply side economics in the 1980s. The dynamism generated by selective deregulation has already manifested itself in the more rapid and frequent innovations in banking and insurance services offered, in Euro-currency banking and by Lloyds of London, respectively. It has been due to the fact that only commercial and technical feasibility determined their introduction and regulatory processes could not prevent or even delay them. The well-known past innovations in the free banking and insurance zones are likely to be followed by more and free zones in other industries should result in similar acceleration of innovation.

External Diseconomies

There exist two competing theories of the reasons for regulation. The first suggests that it is the outcome of democratic political processes which enable special interest groups to enrich themselves at the expense of the general public and overall total welfare [Wolf, 1979; Cairns, 1980]. To the extent that free economic zones lower trade barriers under this model they injure only special interest groups and increase overall welfare. Therefore, the estimates of welfare gains due to free trade zones must be revised upward in a way that can never be rigorous.

Under the second model, protection is imposed to eliminate some market failure. Lowering of trade barriers through free economic zones thus leads to the reappearance of external diseconomies and a social cost that has to be included in the welfare analysis presented above.

The impact of the external diseconomies can logically consist of the following extremes. First, the external diseconomies are confined to the host country, as for example might happen if through lowered protection of an import-competing industry the country loses the security benefits of domestic agriculture or of a defense industry. Under these conditions the welfare calculus for the host country has to be adjusted downward. The calculus for the rest of the world requires no adjustment. Second, the external diseconomies accrue mainly to the world as a whole and only minimally to the host country. For example, Euro-currency banking is feared to have raised the probability of a major global financial crisis because in the absence of national regulatory controls these banks have invested imprudently large amounts relative to their capital base to individual borrowers of doubtful ability to repay [Grubel, 1979]. Whatever may be the merit of this argument in practice, it serves to illustrate how deregulation of banking in Euro-currency markets can result in negative externalities for the world while most of the benefits from the deregulation accrue to the few financial centers hosting the Euro-currency banks. In such cases the welfare calculus of the effect of free economic zones must be amended in obvious ways that are not pursued here.

Finally, it should be noted that if the methods used for discriminating between regulated and unregulated sectors are working imperfectly, business which should be regulated escapes into the deregulated sector. For example, it may not be possible to exclude people from free gambling zones who through excessive losses become public burdens, or firms with imperfect knowledge may be induced to do business with deregulated banks and insurance companies that is not in their long-run interest and leads to social losses. The negative external effects of such imperfect separation of regulated and unregulated markets must be entered into the social welfare calculus of free economic zones.

Tax Revenue Effects

Free economic zones cause a redistribution of tax revenue between governmental jurisdictions that permit some to lower taxes and require another to raise them (or change expenditures without corresponding changes in taxation). The resultant welfare effects are well known from the public finance literature and will not be pursued here. Instead, the following is limited to a brief taxonomy of the major tax revenue effects.

The local government jurisdiction hosting the free economic zone gains income directly if it is the landlord of the zone and raises charges to land users upon establishment of the economic zone.[1]

[1] If the owner of the land wishes to maximize his income, he will charge for the use of the land an amount that is analytically equivalent to the economic rent which accrues to the occupant. A duty-free camera retail store at an airport, for example, faces a downward sloping demand curve and sets the price at an output level and accompanying price where marginal revenue equals marginal costs, with all inputs available at constant prices from the regulated sector and the rent being determined as a residual. In this extreme case, all of the benefits from deregulation accrue to the airport authority and the local government owning it. Capital, managers and labor of the store are paid only their opportunity cost in the regulated sector.

If landlords charge rent above the monopolistic optimum, the level of business done in the tax free store will also be less than optimum. I have noted that in some countries duty free airport stores charge prices that appear to be above the optimum and therefore appear to transact very little business. The question arises whether in these cases the stores exploit a very inelastic demand curve, the determinants of which may not be obvious to the casual visitor or whether landlords have set rents too high in ignorance of the elasticity of demand.

On the other hand, it is also possible for landlords to charge less than the optimum amonnt. In this case the entrepreneur leasing the store enjoys economic rents, which may imply non-desirable income distribution effects. To avoid non-optimal outcomes, the owners of land on which free economic zones are established should set charges through competitive bidding.

If the local government has an income tax, revenue is raised by the growth in factor incomes accompanying the free economic zone trade expansion and as the tax base is broadened through the migration of capital into the zone from the host country and abroad. Overall increased activity and wealth raise excise and property tax revenues of the local jurisdiction.

The senior government of the country hosting the zone suffers a loss of tariff and other revenue generated by regulation equal to that avoided by firms locating *in* the free economic zone. In addition, there is a shrinking in the income tax base as factor incomes are lowered in industries which contract because of lower protection. Offsetting these losses are higher factor incomes and therefore income tax revenue from export industries and the broader tax base created by the flow of foreign capital into the zone. The rest of the world loses tax base through the outflow of capital.

The most important conclusion emerging from this brief overview is that the local government hosting the zone always gains tax revenue and it should therefore not be surprising that local governments typically are prime promoters of free economic zones. Senior governments, on the other hand, are likely to lose revenue unless the trade expansion and foreign capital inflows are large enough to offset the losses. This may well be one important reason why some senior governments, such as that of Canada, oppose the creation of free trade and economic zones.

IV. Free Economic Zones for Other Industries?

Free Investment Zones

After the analysis of the nature and welfare effects of free economic zones, it may be useful to consider application of the principles developed to other industries which are well known to suffer from heavy regulation. I will do so here for the investment and drug-medical industries.

Paternalism in the regulation of capital markets of the world is very strong, having moved from an initial concern with the accuracy of information disclosed about investment projects to where some governments have taken it upon themselves to evaluate the economic merit and risk of projects. Inevitably, the legislative requirement to have all capital issues approved by the bureaucracy has resulted in additional costs and delays and in effect requires government officials to do things for which they are not particularly well qualified. Doubts have been expressed that these costs are worth the benefits to investors [Kalymon, 1978].

As in the case of insurance and banking, there is room for disagreement over the net social benefits of regulating capital markets and there exist powerful interest groups benefiting from the regulation. Complete deregulation is therefore unlikely and it may be worth considering partial deregulation through the establishment of free investment zones. In such zones borrowers would not be required to obtain government approval of prospectuses accompanying the issue of new securities. Investors' protection would consist of the remaining applicability of laws which make it a criminal offense to misrepresent facts in prospectuses. Basically, however, investors would be required to have their decisions guided by the principle of "caveat emptor", which would induce them to study prospectuses carefully, use the services of private firms specializing in such evaluations, or both. And, of course, they always have the option of not buying securities in the zone at all.

It may well be that in equilibrium there would be dual capital markets. Risk averse and untrained investors would purchase securities in regulated markets and would be willing to pay the premium and accept delays involved. Firms in relatively stable industries, such as utilities, might find the costs and delays in getting approval acceptable and would be the main suppliers of securities in these regulated markets. In the unregulated zones, on the other hand, securities would be sold to investors with a preference for risky but potentially high return securities and with special skills in evaluating investments. Small and newly created firms in industries where new investment opportunities tend to develop quickly, such as high-technology and resource development, would supply securities and gain greatly in their ability to exploit new opportunities quickly and cheaply.

Free Medical Zones

It is well known that the regulation of drugs, hospitals and medical doctors has resulted in excess costs because the political and bureaucratic incentive structure puts too much weight on the prevention of problems with new products and treatments relative to the cost incurred by delays or cancellations in the introduction of new products and treatments [1].

There exist in fact free drug and hospital zones in Mexico, some Eastern European countries and in the Swiss Canton of Appenzell[2]. Patients from many countries take advantage of these facilities, often after treatments in their home-countries were unsatisfactory. Because public health-insurance programs in most countries do not cover treatment in such zones abroad, access has been limited to wealthy persons.

The creation of free medical zones in industrial countries would be defensive in the sense defined above and could be achieved simply by setting aside areas within which most of the existing regulation of drugs, treatments and doctors are inapplicable. Patients who consider use of the facilities in the zones would have to rely on their own judgement and that of their doctors and relatives as to the merit of the risks and potential benefits offered. They would have also as protection the desire of firms in the zone to continue in business, which would prevent them from offering drugs and treatments that are ineffective or carry excessive risk in use Perhaps it would be useful to require that all consultations between firms in the zone and patients be recorded on video tape as evidence that

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[1] See Grabowski [1976] and Wardell [1979] for studies which indicate that the U.S. cost of obtaining permission to market a new drug was $ 50 million on average in the middle 1970s and involved testing over several years. As a result, life-saving drugs that had been proven effective and safe in Europe have become available in North America only after several years and after much unnecessary suffering and deaths. Some so-called "orphan drugs" are never marketed because expected sales levels would not permit the recovery of the required $ 50 million investment in obtaining government approval, even though, by all medical standards such drugs are effective and safe.

[2] Appenzell is the home of many clinics using "natural" treatment methods for many ailments. Medical doctors can practice and use their titles obtained abroad without having to pass examination required in other Swiss cantons. According to casual observations by

Swiss economists, the Canton of Appenzell has attracted many patients from abroad for a long time and business has not been impeded by expensive law-suits or scandals.

patients had been given full explanations of risks, benefits and costs and had consented to treatment under free will and in possession of their facilities.

It is clear from the preceding considerations that free investment and medical zones do not offer an opportunity for the separation of markets in the same way as do the free banking and insurance zones. In these latter types of zones use is restricted easily to customers who through their size and other characteristics clearly have very little need for the paternalism of the state. In the case of free investment and medical zones it is not possible to use objective criteria to limit access to those who obviously do not need protection. In the case of the medical zone, in fact, arguments can be made that potential users are in special need of state paternalism. For these reasons perhaps the suggested creation of free investment and medical zones has little chance of being implemented in the near future.

However, in principle, the case for free investment and medical zones is much like that for free gambling zones and there may well come a time when like in the case of gambling the costs of regulation become so great that relatively small and politically independent areas will encourage the creation of such free investment and medical zones because of the large local benefits they promise.

V. Summary and Conclusions

In this paper I have described several recent and diverse institutional innovations which have in common that they permit the selective deregulation of economic activity by location or type of customer or both. It was shown that such selective deregulation, referred to conveniently as the creation of free economic zones, generates powerful interest groups which can succeed politically where attempts at complete deregulation are stalled because of some doubts about the merit of the action and because vested interests oppose it politically.

The welfare effects of the free economic zones are theoretically indeterminate. There are gains from the expansion of trade, encouragement of innovation and increased freedom of choice for producers and consumers. Welfare losses may arise from the locational diversion of trade and externalities, including some due to the imperfect separation of regulated and deregulated sectors. Some free economic zones created in New York are defensive in the sense that they are in response to zones created ab- road and the accompanying diversion of trade. Such zones are likely to reduce rather than increase the cost of locational diversion of trade.

If the already existing free economic zones are successful commercially and costs in terms of locational diversion and externalities are small, further free economic zones are certain to be created and new industries included. The selective deregulation of the investment and medical industries may be primary candidates for such new initiatives.

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